# PATHCON & LAB EXPO 2023

## 7th Annual Conference of the Association of Practising Pathologists(APP), India

16th December, 2023 **(Virtual)**

17th December, 2023 **(Hybrid)**

**The Lalit, New Delhi**

CONFERENCE

SOUVENIR

# PATHCON & LAB EXPO 2023 - ORGANIZING COMMITTEE

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# PATRON
# LT GEN (DR) J R BHARDWAJ

**It is my great pleasure to know that** PATHCON 23 **is being held on** 16 and 17 December 2023 **at** Hotel Lalit.

As usual this conference will have large numbers of lectures and deliberations by esteemed faculty on very important topics, very educative to all pathologist . Theme of the conference is rightly chosen as "Pathways to precision in Pathology-Artificial intelligence as it is the requirement of the mordern medicine.

I wish a great success to the organisers and be beneficial to all the delegates.Hope that a large number of pathologists will participate.

With best wishes

With best
**Lt Gen (Dr) J R Bhardwaj**
PVSM AVSM PHS (Retd)
MD DCP PhD FICP FAMS FRC Path (London)

# ADVISORY BOARD CHAIRMAN
# PROF. K B LOGANI

It is a great pleasure for me to write in for holding of **7th Annual conference of Association of Practicing Pathologists**, APP India on **16-17th December 2023** both in virtual and hybrid mode that would encourage maximum numbers of participants to attend and benefit all age groups of participating professionals. The scientific program has been prepared meticulously through including a wide spectrum of interesting topics in various fields of Pathology, Microbiology, Clinical Biochemistry, Hematology, immunology, and Surgical Pathology with emphasis on quality assurance in each of the above to help clinical Physicians and Surgeons in management of non-neoplastic, neoplastic, and molecular -genetic disorders. It is exciting to note that the role of Artificial Intelligence (AI) that is enthusiastically being promulgated & applied in various diagnostic and clinical aspects of diseases.

In the conference, a pragmatical approach has been taken to discuss on pros and cons of AI viz: its accuracy, reliability, dependency and to deduce that how far AI can be applied in the diagnosis of diseases in Pathology and its allied fields and to get an assurance in the safe clinical management of the case. The results of this discussion will be of great help to the industry of AI in developing required equipment, soft- ware programs and to discuss and take care of nuance of AI in developing a reliable approach to precision diagnosis in coming years. In my view, we may not depend and rely completely on Artificial Intelligence (AI) albeit it would help a lot in continued training and learning process but it has to be kept under constant observation by the diagnostician and the clinician like flying by wire aero plane under auto mode being constantly monitored by chief pilots. The scientific program also grants a pragmatic approach by holding various workshops in interesting fields of medicine to impart emphasis on a- hands-on practical experience to the participants in developing and honing their practical skills in various laboratory procedures.

# ADVISORY BOARD CHAIRMAN
# PROF. K B LOGANI

I appreciate that All members of Association of Practicing Pantologists (APP), India have worked collectively hard over the years since its inception to bring it to this height of success, popularity and firm footing on strong pillars of members, who as epitome of pillars have put their all efforts together to have built the foundation of APP so strong that that **now no tremors** of any Richter scale can give even a hair thin crack to its standing and popularity. We have to be strong enough with a collective strength to make listen to our voice and existence.

I see a luminous experienced guest Faculty speaking on interesting, complexed subjects in various fields of medicine who have come to share their knowledge and experiences with attending young and senior delegates from different parts of India, and wish to thank them for making this conference a great success. My heartiest congratulations to the members of Organizing and Scientific committee to hold the conference at this large scale.

**Dr. K.B. Logani**
Former Principal & MS and Addl DGHS,
Lady Hardinge Medical College & Associated Hospitals,
Ministry of Health & FW, Government of India New Delhi

# FOUNDER PRESIDENT, ASSOCIATION OF PRACTISING PATHOLOGISTS (APP) DR RAKESH SHARMA

Dear Members,

As we gather for our annual meeting, I want to address the challenges standalone pathologists face in the shadow of big corporate medical laboratories backed by international investors. Organizations enlisting laboratories in their panels offer significantly low reserve rates, fostering cutthroat competition. The administration's apathy towards our genuine demands adds to our struggles.

I'm pleased to acknowledge the relentless efforts of our Association's office bearers, working towards redressal through regulatory authorities and legal channels. While the judicial process demands patience, our pursuit of justice continues.

We must raise awareness among our patients and the public about the vital advantages of reports authenticated by pathologists. These professionals physically authenticate test results, ensuring accuracy before releasing reports and following national standards and ethical practices.

I advise all young and senior pathologists to adhere strictly to the best ethical practices, join external quality assurance programs to uphold high-quality management standards, and actively participate in continuing medical education meetings.

Together, let's remain hopeful that positive changes are on the horizon.

Best regards,
**Dr Rakesh Sharma**

# PRESIDENT APP & ORGANIZING CHAIRMAN
# DR NEERAJ JAIN

Dear Colleagues,

Now all of us are again together in 7th PATHCON & LABEXPO-2023.Our collective journey in advancing the field of pathology has been nothing short of remarkable.

As we navigate the ever-evolving landscape of healthcare, your commitment to excellence and dedication to the highest standards of diagnostic precision continue to inspire. Together, we form a community that not only embraces the challenges of our profession but actively shapes its future.

Our association stands as a testament to the collaborative spirit that defines us—a spirit that fosters innovation, encourages continuous learning, and strengthens the bonds of professional camaraderie.

I extend my sincere appreciation to each one of you for your contributions, be it through groundbreaking research, clinical expertise, or the mentorship you provide to the next generation of pathologists. Our collective impact is profound, and it is through our shared vision that we propel the field forward.

As we embark on the journey ahead, let us embrace the opportunities for growth, learning, and collaboration. Together, we can elevate our practice and make enduring contributions to the realm of pathology.

Thank you for your unwavering commitment to our association and the invaluable work we do.

Sincerely,

**Dr Neeraj Jain**
Organising Chairman
PATHCON & LABEPO-2023

# ORGANIZING SECRETARY
# DR RAJAN VERMA

Dear Esteemed Colleagues,

I am delighted to extend a warm invitation to all pathologists and members of our distinguished community for the Annual Pathology Conference of APP ( Regd.) As the Secretary of the Pathologist Association, it is my privilege to welcome you to an event that promises to be a cornerstone in our collective pursuit of diagnostic excellence.

This year's conference boasts an exciting lineup of keynote speakers, workshops, and interactive sessions, all designed to deepen our understanding of cutting-edge developments in pathology. Our theme, "Shaping the Future of Diagnostic Excellence," underscores the pivotal role pathologists play in advancing healthcare.

The conference provides a unique platform for networking, knowledge exchange, and collaboration. We encourage you to actively engage in discussions, share your expertise, and explore innovative approaches to enhance our field. Together, let us foster a community dedicated to pushing the boundaries of pathology and contributing to the advancement of medical science.

I eagerly anticipate your participation in what promises to be a transformative experience for all. Let us unite in our commitment to excellence and forge a path toward a brighter future for pathology.

Warm regards,

**Dr Rajan Verma**
Organizing Secretary

# PRESIDENT, DMC
# DR ARUN GUPTA

It is my privilage and pleasure to be a part of PATHCON-2023 being organized by Association of Practising pathologists (regd.) on 16-17 Dec 2023.

This conference as in the past has been a conglomerate of academicians who have been pioneers in their field s of dominance sharing and enlightening the participating delegates and post graduate students with their knowledge . I also congratulate the Organising committee that in keeping wit the recent developments ,the conference is planned as hybrid mode wherein it has a far more wider participation both at national and international level

No conference is complete without participating industry partners who not only impart glamour to the conference but by exhibiting their recent products bring world to our doorstep, and with most companies now going in for Make in India approach have been instrumental in bringing down the costs of both equipments and their consumables without compromising in quality.

I heartily congratulate the organizers for this wonderful conference ,I wish the Association of practising pathologists (APP) keeps on bringing such literary activities in future.

**Dr Arun Gupta**
President DMC

# REGISTRAR DMC
# DR GIRISH TYAGI

I am delighted to be part of **7th conference of Association of practising pathologists (Regd.)** I feel happy that PATHCON, that what was once an annual affair till pandemic of Covid 19 is back on its track. It was the pandemic of Covid which made us realise how important Pathology is to clinical medicine.

I am also aware of the fact of newer challenges faced by standalone pathologists, in the form of corporatisation and sample aggregators. We at DMC are in constant touch with the concerned authorities and with the help of APP will be working towards a sustainable solution

Finally, I congratulate the organising committee for PATHCON 23, for organizing the gala event year after year, and hope the delegates have a memorable memories to take home, both in terms of academics and conference as whole.

**Dr Girish Tyagi**
Registrar DMC

# ADVISOR
# DR SUBODH GUPTA

It gives me an immense pleasure to present to you season **7th Chapter of Delhi Chapter of Association of Practicing Pathologists (APP),** THE PATHCON 2023, like the last episode THE PATHCON 2023, this year, will also be held in Hybrid Mode, at THE LALIT, Barakhamba Road, New Delhi, on 16th and 17th Dec'23.

As an Advisor, I might be at the back seat at the APP, but when it comes to PATHCON my enthusiasm and energy levels are same as it was when we hosted the 1st Pathcon at the IHC, and it gives me an immense satisfaction to see APP growing and Pathcon and other events blossoming even better than as they were in the past.

I have no qualms in accepting that I am from an old school and would have loved to see PATHCON 2023 as a full blown out physical conference of two days where everyone would have had a chance to interact with our esteem faculty but also sea of young pathologist and delegates who are ever so hungry for knowledge be it through our workshops lectures or poster presentations.

I welcome all the faculty delegates and our participating industry partners who always stood by us and were also a source of inspiration in giving us a confidence in hosting PATHCON 2023 and future PATHCONS..

Wishing everyone all the very best for PATHCON 2023

Yours Very own
**Dr Subodh Gupta**
Advisor and Immediate Past President

# SCIENTIFIC COMMITTEE CHAIRPERSON
# DR RINU GOYAL

Dear Esteemed Colleagues,

As the Chairperson of the Scientific Program, I am honored to welcome you to our annual conference, a celebration of the cutting-edge research and advancements in the field of pathology.

This year's scientific program is a testament to the dedication and expertise of our esteemed presenters. We have curated a diverse range of sessions that delve into the latest developments, foster interdisciplinary collaboration, and provide a platform for the exchange of ideas that will shape the future of pathology.

I extend my deepest gratitude to our presenters who have contributed their time, knowledge, and insights to make this program truly exceptional. Their commitment to advancing our understanding of pathology is commendable, and I am confident that their presentations will stimulate thought-provoking discussions.

To all attendees, your active participation is crucial in making this conference a vibrant hub of intellectual exchange. I encourage you to engage, question, and share your experiences, as it is through these interactions that we collectively elevate our practice.

I look forward to the exciting discoveries and collaborations that will undoubtedly emerge from this year's scientific program. May our shared pursuit of knowledge continue to drive progress in the fascinating world of pathology.

Warm regards,
**Dr Rinu Goyal**
Chairperson, Scientific Program

# SOUVENIER CHAIRPERSON
# DR VAGISH DAVE

Continuing with the tradition, I present to you the **7th edition of Souvenir of PATHCON 2023**. I am thankful to the organizing committee for continuously endowing this responsibility. As the Association of Practicing Pathologists(APP) is steadily moving towards its Silver Jubilee, apart from our quarterly sessions, two pillars of its success story have been the monthly VILAC program and our annual extravaganza of Knowledge dissemination THE Pathcon are growing each year.

Pathology is the bridge between basic sciences and clinical medicine, helping translate research findings into practical applications, and through Pathcons, as we continuously strive for imparting latest information and knowledge to our distinguished participants through our eminent and very experienced faculty in their own fields in our workshops and lectures.

On Behalf of Organising committee of PATHCON 2023 and APP, I welcome all our delegates, faculty and Industry partners to Pathcon and Lab Expo 2023, on 16th and 17th Dec 20023, at THE LALIT, Barkhamba Road, NewDelhi.

**Dr Vagish Dave**
Souvenir Chairperson

# THE ASSOCIATION OF PRACTISING PATHOLOGISTS

The Association of Practising Pathologists was founded in the year 2001 by a group of twenty odd post graduate pathologists, practicing laboratory medicine in Delhi and NCR. The association was registered under S.R. Act of 1860 (Punjab Amendment Act of 1952). As of today the association has around 300 qualified members. "APP was granted the status of a stake holder by International laboratory Corporation (ILAC) in its annual conference in Sydney in 2007

**Aims & Objectives**

In the last two decades, there has been a quantum jump in technology and computerization. Keeping in view of such advancements in the field of Pathology and Laboratory Medicine, the APP resolved to have the following three primary aims & objectives:

**A. Quality Assurance**

To apprise its members on current concepts of quality control, internal auditing, management and assurance, the Association organizes regular workshops and seminars for its members.

In order to improve confidence of its members an External Quality Assurance Programme VILAC - "Voluntary Inter Laboratory Comparison Programme," the official Proficiency Testing Programme of APP is being offered to its members since 2001. VILAC is the most comprehensive & economical. Quality assurance programme which covers Hematology, Biochemistry, immunoassays, Hb A1C, Hb A2, and Microbiology including cultures. The member participants have developed a sense of accomplishment and confidence over the years as they now meet the high standards of quality assurance. This tremendously benefits the Patients as well as the Clinicians.

**B. Continued Medical Education (CME)**

To keep members abreast with recent advances, the association organizes Quarterly Symposiums, Seminars, workshops etc. The duration varies from 3-4 hours and 3-4 eminent Indian and International speakers are invited to discuss and deliberate on topics of mutual interest Till date we have organized 81 such CME activities without any break!

**C. Fellowship**

To meet fellow pathologists and understand their difficulties and share their experiences. In last 84 meetings, attendance has always been excellent. Now member pathologists feel comfortable and friendly with each other rather being competitive.

**D. APP Certification:**

With the apparent boom in lab industry post covid ,there has been a sea of change in how lab should operate and with corporates foray into system there has been a big survival for existence. It was realized in 2021 that some kind of certification should in place. After much deliberations from Nov 2022 till date about 40 Privately owned laboratories have been issued "APP Certification", so as to make general people aware that the certified labs perform test with highest level of quality and their authencity cannot doubted.

In 2014, APP decided to convert its annual conference into a national one, in the form of PATHCON & LAB EXPO. It was being organized for two days (Saturday & Sunday) in December every year since 2014. Due to an unprecedented outbreak of the Pandemic of COVID 19 we were unable host the Pathcon, but this year, the Executive committee of APP decided to organize PATHCON & LAB EXPO 2022 on 17th-18th December at Vivanta, by Taj, Dwarka, New Delhi. The Deviation from the previous conferences, is that this year Day one will be an online affair, while main conference will be held in hybrid mode. Extra Efforts have been made to make this mega event a grand success this year too. Our Industry partners have like all the previous years have given us an extraordinary response for The Expo, and hope to have maximum participation from Diagnostic & Medical Industry, making it the biggest so far!

The Pathcon will consist of twelve workshops online on the 17th Dec'22, while the Conference will be on the 18th Dec, at Vivanta, Dwarka, as Hybrid mode, in which topics of mutual interest including quality assurance, applied aspects and recent advances will be held covering the entire field of Pathology & Laboratory Medicine. Lab Expo will be organized on 18th only and will boast of stalls managed by the top Diagnostic & Medical Companies and healthcare societies. Latest machines and technologies will be on display.

The conference being an hybrid shall have no participation cap of for delegates unlike our previous Pathcons which includes members of APP, Pathologists, Laboratory Consultants and post graduate students of pathology and laboratory medicine. The registrations will be done on first come first serve basis. It will not be an understatement to say that Pathcon this year also boasts of hundred odd national and international faculty form the top institutions.

**www.appvilac.com**

# In memory of Dr S K Sood

## Professor Swaroop Krishan Sood

31 July 1927- 24 Oct 2023

**Prof SK Sood,** born as Swaroop Krishan Sood on 31 July 1927, hailed from Moga district of Punjab He did his medical graduation from Medical college, Gwalior and post-graduation from the prestigious AIIMS, Delhi, being from the first batch of postgraduate students of that institution in 1958. He worked at AIIMS in various capacity from 1958-1979 and held independent charge of Hospital laboratory services. Thereafter he worked as Prof of Pathology at the University of Benghazi Libya up to March 1982. He joined University college of Medical Sciences (UCMS) Delhi where he played a pivotal role as HOD Pathology in establishing Hematology and Blood transfusion services, giving it a solid foundation with his vast and rich experience. After superannuation from UCMS in 1993, he joined as visiting Professor (Hematology) University of Kuwait. In the private sector he worked in Sir Ganga Ram Hospital (SGRH) as senior consultant and during his long tenure of 16 years he took on the mantle of head of hematology and chairman Quality Control at SGRH. The last appointment he held was in Dr B L Kapur Superspeciality Hospital, New Delhi, as senior consultant Hematology for the next 5 years. After a long and distinguished academic career, he retired from active service and joined his son at Malayasia along with his wife.

Dr Sood has contributed vastly to academics and research. With his pioneering work on iron metabolism, he conducted several prestigious projects related to Nutritional anemia, Thalassemia and Hemoglobinopathies, sponsored by

ICMR, UNICEF and WHO. The Govt of India incorporated many of the recommendations of these projects in the current Health policies. He was concerned with quality assurance and was instrumental in introducing Quality Assurance in Laboratory Medicine. Infact, one of his last publications at the age of 85 was a book on Quality assurance. In all, Dr Sood completed 18 assignments in India and abroad in countries like Srilanka , Bhutan and Nepal. Besides being a researcher par excellence he headed /was member of several selection committees of AIIMS, PGI Chandigarh, SGPGI Lucknow and ICMR. He has been Chairman of the Accreditation Committee and Accredited Lead Assessor of National Accreditation Board of Testing and Calibration Laboratories (NABL).

He was a towering figure in Hematology at the National level too, having been President of the ISHBT besides being a very active founder member and one of the earliest President of the Delhi Society of Hematology. He has delivered during his long career several orations, Keynote addresses and invited lectures at plenary sessions. In recognition of his tremendous work and dedication to the cause of Hematology in India he has been honored with four Lifetime achievement awards including one from the Association of Practicing Pathologists and fellowship and LTAW of ISHBT. He had over 150 National and International publications and books on laboratory methods and quality assurance.

Above all Prof. Sood was an excellent human being who believed in mentoring and nurturing young talents. He breathed his last at the age of 96 years on Oct 24th 2023 at Malaysia with his son and his family by his side. This great and down to earth eminent hematologist is no longer with us, but his legacy continues in the hearts of those whom he inspired and nurtured with his profound wisdom, knowledge and able leadership.

# PATHCON 2023 COMMITTEE

## Patrons

**J R Bhardwaj**
Delhi

## Advisory Body Chairman

**K B Logani**
Delhi

## Secretary General & Organizer VILAC

**Rakesh Sharma**
Delhi

## Organizing Chairman

**Neeraj Jain**
Delhi

## Organizing Secretary

**Rajan Verma**
Delhi

## Organizing Co Chairman

**Alok Jain**
Delhi

## Organizing Co Chairman

**Vagish Dave**
Delhi

## Organizing Co Chairman

**Juhee Chandra**
Delhi

## Advisors

**Subodh K Gupta**
Delhi

**Arun Gupta**
Delhi

**Navin Dang**
Delhi

**S M Kantikar**
Delhi

**Sunil Dargar**
Delhi

## Members

| | | | |
|---|---|---|---|
|  **Anand P Agarwal** Delhi |  **Anupama Arya** Delhi |  **Ashok Kumar** Muzaffar Nagar |  **Ashok Sharma** Agra |
|  **Ashok Kataria** Delhi |  **Atul Kapila** Delhi |  **Bhuvnesh C Gupta** Faridabad |  **Dilip Kumar** Ghaziabad |
|  **Gajendra Yadav** Rewari |  **Jagpal Singh Suri** Delhi |  **Kalpana Jain** Gurgaon |  **Manish Wadhwa** Faridabad |
|  **Neena Bhatia** Delhi |  **Neha Trivedi Kaushik** Delhi |  **Nishit Gupta** Delhi |  **Parminder Singh** Delhi |
|  **Pradeep Suri** Delhi |  **Prashant Gupta** Delhi |  **Prashant Goyal** Delhi |  **Rachna Singh** Delhi |

## Members

**Rajesh Makashir**
Delhi

**Rinu Goyal**
Delhi

**Ritika Verma**
Delhi

**Rohini Kalhan**
Delhi

**Savita Nagpal**
Delhi

**Savita Sachdeva**
Delhi

**Vibha Tomar**
Delhi

**Vibha Malik**
Delhi

**Vijay Kumar**
Delhi

# FACULTY


Prof Amita Jain


Dr Anil Handoo


Dr Anisha Manocha


Dr Anita Chopra


Dr Anjali Kakati Gupta


Dr Anupama Arya


Dr Col. Arun Harith


Dr Arvinder Singh


Dr Ashok Sharma


Dr Bhuvnesh C Gupta


Dr Bhawesh Mishra


Dr Debdutta Basu


Dr Deepak Mishra


Dr Dilip Kumar


Dr GPS Gahlot


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Dr Manish Wadhwa


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Dr Nabhjit Malik

Dr Nalini Gupta

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Dr Neena Bhatia

Dr Neera Dhar

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Dr Neeta Kumar

Dr Nita Khurana

Dr Poojan Agarwal

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Dr Pradeep Suri

Dr Pradeep Dabla

Dr Pranay Tanwar

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Dr Praveen Sharma

Dr Preeti Diwakar

Dr Priya Pathak

Dr Puja Sakuja

Dr Pulkit Rastogi

Dr Rachna Singh

Dr Rajesh Bhola

Dr Ranjan Modi

Dr Reena Bhardwaj

Dr Reena Tomar

Dr Richa Gupta

Dr Rinu Goyal


Dr Rohini Kalhan


Dr Ruchi Gupta


Dr Ruchika Gupta


Dr Sarika Singh


Dr Shalini Bahadur


Dr Shyam Prakash


Dr Sheetal Verma


Dr Shivangi Harankhedkar


Dr Shivani Kalhan


Dr Shuchi Ghai


Dr Sonam Sharma


Dr Sudip Dutta


Dr Sujata Chandrasekaran


Dr Sujata Chaturvedi


Dr Sumit Seth


Dr Sushma Patil


Dr Tushar Sehgal


Dr Vagish Dave


Dr Venkat Iyer


Dr Vibha Tomar


Dr Yash Javeri

# INAUGURATION PROGRAM

1230-1235Hrs

**Floral Welcome & Lamp Lighting**

1235-1240Hrs

**Welcome Address by Organizing Chairperson:**
**Dr Neeraj Jain**

1240-1245Hrs

**Release of Souvenir**

1245-1250Hrs

**Our Patron - Dr S K Sood :**
**Contribution in APP**

1250-1255Hrs

**Prize Distribution Annocument of**
**Oral & Poster Presentations**

1255-1300Hrs

**Address by Patron**
**Lt. Gen. (Dr) J.R. Bhardwaj**

1300-1305Hrs

**Vote of Thanks by Organizing Secretary :**
**Dr Rajan Verma**

# WORKSHOP PROGRAM

## 16th December 2023

### Pre Lunch Workshops

#### W-I: Role of Flow cytometry in Benign Hematological Disorders

**Moderator - Dr Gajendra Yadav**

| Time | Topic | Speakers |
|---|---|---|
| 0900-0915Hrs | Importance of Flow Cytometry in Benign Hematology | Dr Pulkit Rastogi |
| 0915-0945Hrs | Application of Flow Cytometry for diagnosis of PNH | Dr Nabhjit Malik |
| 0945-1000Hrs | Application of Flow Cytometry in RBC disorders<br>• Red Cell Membrane Disorders<br>• Reticulocyte Analysis<br>• Role in G6PD deficiency | Dr Praveen Sharma |
| 1000-1030Hrs | Flow Cytometry in WBC disorders<br>• Immunophenotyping in immunodeficiency disorders<br>• Lymphocyte subset analysis | Dr Pulkit Rastogi |
| 1030-1045Hrs | Flow Cytometry in Platelet Disorder<br>• Platelet Activation Studies<br>• Platelet Disorders Identification | Dr Nabhjit Malik |
| 1045-1100Hrs | Case Studies and Interpretation<br>• Reallife Cases of Benign Hematological Disorders | Dr Praveen Sharma |

#### W-II: Immunohistochemistry

**Moderator - Dr Neena Bhatia**

| | | |
|---|---|---|
| 0900-0930Hrs | Utility of Immunohistochemistry in Uterine tumours | Dr Nita Khurana |
| 0930-1000Hrs | Immunohistochemical approach to NHL | Dr GPS Gahlot |
| 1000-1030Hrs | Immunohistochemical approach to Liver SOL | Dr Puja Sakuja |
| 1030-1100Hrs | Quality Control In Immunohistochemistry | Dr Prateek Kinra |

#### W-III: Antimicrobiological Resistance

**Moderator - Dr Rohini Kalhan**

| | | |
|---|---|---|
| 0900-0930Hrs | Understanding Microbial Mechanisms of Antimicrobial Resistance | Dr Sheetal Verma |
| 0930-1000Hrs | Policy Interventions for Combatting AMR: Insights from India's Healthcare System | Prof Jyotsna Agarwal |
| 1000-1030Hrs | Challenges in implementation of AMS Program | Dr Yash Javeri |
| 1030-1100Hrs | TB and Antimicrobial Resistance: A Dual Threat to Public Health | Prof Amita Jain |

# WORKSHOP PROGRAM

| | | |
|---|---|---|
| **W-IV: Lab Management** | | |
| **Moderator - Dr Vibha Malik** | | |
| 0900-0930Hrs | Basics in Digital Pathology now and Future | Dr Sushma Patil |
| 0930-1000Hrs | Equipment planning & Management | Dr Sonam Sharma |
| 1000-1030Hrs | Business DNA-Branding the Pathcare Way | Dr Arvinder Singh |
| 1030-1100Hrs | Medicolegal issues in Laboratory | Dr Rohini Kalhan |
| **W-V: ISO 15189:2022 - What and How?** | | |
| **Moderator - Dr Anupama Arya** | | |
| 0900-0930Hrs | Changes as per 15189:2022 new release | Dr Neelamani Murthy |
| 0930-1000Hrs | Risk Management | Dr Sujatha Chandrasekaran |
| 1000-1030Hrs | Documentation Requirements | Dr Neeraj Jain |
| 1030-1100Hrs | EQAS in Laboratory | Dr Rinu Goyal |
| **Oral Sessions (1100-1400Hrs)<br>Moderator - Dr Anupama Arya, Dr Neena Bhatia<br>Judges: Dr Parul Jain, Dr Shalini Bahadur, Dr Richa Gupta, Dr Poonam Rani** | | |
| **Poster Sessions (1400-1600Hrs)<br>Judges: Dr Sonam Sharma, Dr Priya Pathak** | | |
| **Post Lunch Workshops** | | |
| **W-VI: Liquid Based Cytology** | | |
| **Dr Dilip Kumar** | | |
| 1600-1630Hrs | LBC-Techniques and Principles | Dr Ruchika Gupta |
| 1630-1700Hrs | LBC in Gynae Cytology | Dr Neeta Kumar |
| 1700-1730Hrs | Effusion Cytology: LBC and Beyond | Dr Nalini Gupta |
| 1730-1800Hrs | Respiratory Cytology: LBC and Beyond | Dr Nalini Gupta |
| 1800-1830Hrs | Role of EBUS-TBNA in Mediastinal lymph nodes/ Lung lesions | Dr Poojan Agarwal |
| **W-VII: Advances in Lab Medicine** | | |
| **Moderator - Dr Sumit Seth** | | |
| 1600-1640Hrs | Crisis Management in Clinical Biochemistry Lab | Dr Bhawesh Mishra |
| 1640-1720Hrs | Setting up of Advanced Genetic Lab | Dr Ashok Sharma |
| 1720-1800Hrs | Immunoassay- what we need to learn | Dr Col. Arun Harith |
| 1800-1820Hrs | Direct Immunofluorescence: Technique and Application in anatomic pathology | Dr Anisha Manocha |

| W-VIII: Bone Marrow Aspirate and Biopsy | | |
|---|---|---|
| **Moderator - Dr Vagish Dave** | | |
| 1400-1415Hrs | Tips and Tricks of performing a bone marrow aspirate and biopsy | Dr Mukul Aggarwal |
| 1415-1440Hrs | Components of a normal bone marrow aspirate and biopsy | Dr Debdutta Basu |
| 1440-1510Hrs | Bone marrow findings in benign disorders | Dr Ruchi Gupta |
| 1510-1540Hrs | Bone marrow features of hematolymphoid malignancies | Dr Prabhu Mannivanan |
| 1540-1550Hrs | Quiz | Dr Jasmita Das |
| 1550-1600Hrs | Discussion | All Speakers |
| **W-IX: Approach to Coagulation profile** | | |
| **Moderator - Dr Rachna Singh** | | |
| 1600-1640Hrs | Special Coagulation assays | Dr Rajesh Bhola |
| 1640-1720Hrs | Coagulation Screening tests: Techniques and interpretation | Dr Tushar Sehgal |
| 1720-1800Hrs | Preanalytical variables of coagulation testing | Dr Shivangi Harankhedkar |
| **W-X: Surgical Pathology** | | |
| **Moderator - Dr Kalpana Jain** | | |
| 1605-1630Hrs | Surgical pathology of neuroendocrine tumours: Update & challenges | Dr Jasvinder Kaur Bhatia |
| 1630-1655Hrs | TNBC with latest molecular updates | Dr Reena Tomar |
| 1700-1725Hrs | Evolving updates on CNS Tumours- 2016-2023 | Dr Prachi |
| 1730-1755Hrs | Manual tissue microarray construction - pitfalls and solutions | Dr Preeti Diwakar |

# CONFERENCE PROGRAM

| 17th December 2023 | | |
|---|---|---|
| **Chairperson, Scieitifc Committee - Dr Rinu Goyal** | | |
| 0900-0930Hrs | Ethics in Medical Practice | Dr Rohini Kalhan |
| **Chairperson: Dr Dilip Kumar, Dr J S Suri** | | |
| 0930-1000Hrs | POCT Quality Assurance: A Paradox or a pressing need | Dr Anil Handoo |
| **Chairperson: Dr Pranay Tanwar, Dr Kalpana Jain** | | |
| 1000-1030Hrs | Haemocytomorphometry - A case based approach | Dr Pradeep Suri |
| **Chairperson: Dr J M Khunger, Dr Anita Chopra** | | |
| 1030-1100Hrs | Case Vignettes in Precision Haematology | Dr Deepak Mishra |
| 1100-1130Hrs | TEA BREAK | |
| **Chairperson: Dr Shivani Kalhan, Dr Shalini** | | |
| 1130-1200Hrs | Molecular Basis of Colonic Carcinoma | Dr Richa Gupta |
| **Chairperson: Dr Sujata Chaturvedi, Dr Monica Sharma** | | |
| 1200-1230Hrs | Emerging Trends in Molecular pathology | Dr Venkat Iyer |
| 1230-1300Hrs | Inauguration - MOC (Dr Savita Nagpal) | |
| 1300-1400Hrs | LUNCH | |
| 1400-1430Hrs | Inning Break | |
| **Chairperson: B C Gupta, Dr Manish Wadhwa** | | |
| 1430-1500Hrs | Interpersonal Communication | Dr Neera Dhar |
| **Chairperson: Dr Sarika Singh, Dr Meetu Aggarwal** | | |
| 1500-1530Hrs | Role of lab in management of PPH-Basics and beyond | Dr Jyoti Kotwal |
| **Chairperson: Dr Pradeep Dabla,Dr Shyam Prakash** | | |
| 1530-1600Hrs | Role of cardiac makers in early diagnosis and management of heart failure | Dr Ranjan Modi |
| **Chairperson: Dr Anjali Kakati Gupta, Dr Shuchi Ghai** | | |
| 1600-1630Hrs | Total Lab Automation | Dr Sudip Dutta |
| 1630Hrs | **Valedictory - Early Bird Price and Happy Draw** | |

**Moderator**

| **Scientific Session** | **Food** | **Scientific Session** |
|---|---|---|
| Dr. Neena Bhatia | Dr. Vagish Dave | Dr. Neena Bhatia |
| Dr. Savita Sachdev | Dr. Savita Sachdev | Dr. Savita Sachdev |
| Dr. Anupama Arya | Dr. Savita Nagpal | Dr. Anupama Arya |
| | Dr. Neha Trivedi Kaushik | |
| | Dr. Kalpna Jain | |

# SPEAKER
## *Presentations*

# Business DNA: Branding the Pathcare Way

**Dr Arvinder Singh**
Arth Diagnostics, Udaipur and International Medical Board, London,
Pathology, Business Skills and Medical Law

## Introduction:

In the rapidly evolving world of healthcare, professionals must not only excel in medical skills but also in effectively marketing their services to remain competitive and relevant. This workshop is designed to provide healthcare professionals with a comprehensive understanding of the traditional and digital 'Ps' of marketing, tailored specifically to the healthcare industry's unique challenges and opportunities.

We will explore the fundamental 'Ps' of marketing – Product, Price, Place, Promotion People, Process, and Physical Evidence – and their significance in healthcare.

### 7 P's of Marketing and Their Application for Pathcare Centres

| | |
|---|---|
| Product | Tailoring healthcare services to meet patient expectations. |
| Price | Strategies for competitive and value-based pricing. |
| Place | Enhancing accessibility and convenience in service delivery. |
| Promotion | Effective methods for community outreach and patient education. |
| People: | The critical role of healthcare staff in marketing. |
| Process: | Streamlining operations for better patient experiences. |
| Physical Evidence | Enhancing the tangible aspects of patient encounters, both physically and digitally. |

## Strategic Implementation of the Marketing Mix for Pathcare:

At Pathcare Diagnostic Centre, a strategic fusion of the 7 P's of marketing is essential for enhancing its market standing and service quality. Quality and range of services must reflect in the pricing strategy, ensuring value for patients. The convenience and accessibility of the centre's location are pivotal in augmenting service perception.

Promotional efforts should extend beyond awareness, focusing on educating the community about the significance of timely diagnostics, backed by a team of proficient professionals. The efficiency in processes, from booking to reporting, should underscore the centre's reliability, while the physical aspects of the centre should consistently reflect the brand's promise of excellence and trust.

This harmonized approach to the marketing mix can effectively bolster Pathcare's position, attracting and maintaining a dedicated patient base.

### Digital and Traditional Marketing for Pathcare:

The workshop will offer insights into integrating traditional and digital marketing strategies for a cohesive approach. Participants will leave with actionable knowledge and tools to effectively market their Pathcare services, meeting the needs of a digital-savvy patient base while maintaining the core values of their profession. The workshop will then pivot to the digital realm, underscoring the growing importance of digital marketing in healthcare. This includes understanding the dynamics of online presence, leveraging social media, and utilizing digital tools.

## Crisis Management in Clinical Biochemistry Lab

**Dr Bhawesh Mishra**
More than 13 years of post MD experience in teaching, research and Laboratory quality management. Deen Dayal Upadhyay Hospital, Govt. of NCT of Delhi

Recent decades have witnessed an increased dependency of the healthcare system on laboratory investigations for better diagnosis and treatment. Correspondingly Clinical Laboratories are observing an ever-increasing sample load. With advancement of Laboratory technology, we are currently highly dependent on high end equipment as well as software especially in Biochemistry and Haematology Labs. Skilled and sufficient manpower is another indispensable prerequisite of a successful medical laboratory.

Crisis management in a Clinical Lab is the process by which the Lab deals with a disruptive, negative and unexpected event that threatens to harm the services of the Lab or its stakeholders. It has to be understood that the overall idea of "Crisis Management" is different from Risk Management, Disaster Management and Emergency Management. While Risk management focuses on identifying risks of harm to patients and opportunities for improved patient care, Disaster and Emergency management address the need of preparedness of the Laboratory to handle an unexpected external or internal disaster.

The primary purpose of Crisis Management is to provide uninterrupted quality services to patients/clinicians and safeguard the interests of all stakeholders during times of crisis. It is also Important to reduce losses and to boost the morale of the Lab staff & the team in these tough/crisis times. In difficult/crisis times, sometimes the management becomes afraid of making decisions for fear of making mistakes. This can slow decision making, resulting in "paralysis by analysis". So, it is required that a proper Crisis Management Plan or SOP should be in place well in advance.

Each lab by its own experience knows and identifies its own crisis situations that are likely to disrupt the quality services of the lab. Challenges may be slightly different for Government Hospital Labs, Corporate Hospital labs and Standalone Pvt labs. To prepare a Crisis Management Plan it is first important to identify and enlist common crisis situations like equipment related, manpower related, IT/data related, supplies of consumables/reagents, Quality issues, policy or management issues.

The Lab crisis management team in consultation with external experts (wherever needed) should prepare a checklist of preventive measures to be taken against each crisis situation. Then for action, a Graded Response Action Plan(GRAP) can be made defining the degree/severity of the crisis situation and an appropriate response to the situation. So, a systematic approach for GRAP 1,2, 3 will be ready. When the crisis situation arises each lab personnel will act according to roles already assigned and can effectively avoid last minute panic, chaos and significant losses.

## Components of a normal bone marrow aspiration and trephine biopsy

**Dr Debdatta Basu**
Mahatma Gandhi Medical College and Research Institute, Pondicherry

Evaluation of the bone marrow is an important tool in diagnostic pathology. It requires adequate sampling and appropriate processing along with clinical details and laboratory data. Peripheral smear examination is a pre-requisite before either bone marrow aspirate (BMA) or biopsy (BMB) is carried out. Naked eye evaluation of BMA smears should demonstrate marrow particles. Such smears are ideal for differential count, morphology and abnormal cells. At times marrow aspirate is diluted and unsatisfactory. Moreover, in certain diseases marrow involvement is focal (e.g., granulomas, metastatic deposits, lymphoma infiltration with fibrosis) and therefore the aspirate fails to demonstrate the disease process. To arrive at a diagnosis a bone marrow trephine biopsy is necessary. Current practice is to do both aspirate and biopsy in the same sitting.

Interpretation of BM aspirate smears is done in a sequential manner and the following points are noted

1. Cellularity of fragments- depends on age
2. M:E ratio (normal 2.5:1 to 5:1). At least 200 marrow cells must be counted.
3. Erythroid cells- Cellularity, maturation, nuclear and cytoplasmic abnormalities.
4. Myeloid cells - normally in the paratrabecular region, Cellularity, maturation sequence and cytologic abnormalities.
5. Megakaryocytes – usually scattered, number, maturation and morphology.
6. other cells - Plasma cells, lymphocytes, abnormal cells, macrophages, parasites.
7. Iron stores are better assessed in an aspirate smear. Perls stain is an essential stain for all aspirates
8. Fibrosis is appreciated on a trephine biopsy – Reticulin stain and Masson trichrome stain helps in grading the fibrosis.

## Trephine versus Aspirate

Decalcification is a major step in processing a biopsy and can lead to delay in turnaround time vis-a-vis aspirate smears however trephine biopsies are needed for topographic evaluation like cellularity, fibrosis and focal lesions. It is a useful adjunct to marrow aspiration in providing material for cytologic study (imprint smears), immunohistochemistry and other special techniques. Aspirates are useful to study morphological details like blasts, myelodysplasia, storage cells, hemophagocytosis and parasites. Both the procedures are complimentary.

# IMMUNOHISTOCHEMICAL APPROACH TO NON HODGKIN LYMPHOMA

**DR (COL) GPS GAHLOT**
PROFESSOR (PATHOLOGY & ONCOPATHOLOGY)
COMMAND HOSPITAL (SC) PUNE MAHARASHTRA 411040

Non-Hodgkin lymphoma (NHL) is highly diversified group of hematolymphoid malignancies that arises in lymph nodes or at extra-nodal sites from monoclonal proliferations of B or T lymphocytes. The variable heterogeneity due to different clinical presentations, histopathological subtypes, immunological, environmental, genetic and lifestyle factors may lead to their divergent prognosis. Worldwide NHL is eighth most common malignancy in males and eleventh common in females with higher incidences in North America, New Zealand/Australia, Europe than in South-Central/ Eastern Asia and Caribbean. The median age of diagnosis is lower in the developing countries for both low and high NHL. In India, annual incidence of 23,718 NHL cases per year with Delhi as highest age-adjusted incidence rates (AARs) has been reported.

Immunohistochemistry (IHC) is a diagnostic technique that uses antigen-antibody interactions to detect specific proteins in cells. Its advantages of high cost-effectiveness, shorter turnaround time, and the ability to be performed on formalin-fixed paraffin-embedded tissues enables superior over other ancillary techniques, The three-pronged role of IHC in Non Hodgkin lymphoma include its subtyping, prognostication and potential for targeted therapy. With the recent development of immunotherapy, numerous antibodies against markers such as programmed death-ligand 1 (PD-L1), CD19, and CD30 have been used as biomarkers to identify therapeutic targets.

Based on histomorphological differentials with appropriate IHC markers analysis; all NHL has been classified into B-cell and T-cell immunophenotypes. The developing countries have lower frequency of B-cell NHL (86.6%) and a higher frequency of T/NK-cell NHL (13.4%) as compared to respective 90.7% and 9.3% of the developed countries. Among B-cell NHL, the developing regions have higher grade B-cell lymphoma (59.6%) and lesser low-grade B-cell lymphoma (22.7%) than to respective 39.2% and 32.7% of the developed world. Common B-cell subtypes include diffuse large B-cell lymphoma (DLBCL) followed by follicular lymphoma (FL), chronic lymphocytic leukemia/small lymphocytic lymphoma (CLL/SLL), mantle cell lymphoma (MCL) whereas T-cell

subtypes include peripheral T cell lymphoma not otherwise specified (PTCL, NOS), anaplastic large cell lymphoma (ALCL), angioimmunoblastic T-cell lymphoma (AITL) and precursor T-lymphoblastic lymphoma (T-ALL). Therefore a thorough knowledge of the pattern/type of positivity (membrane, cytoplasmic nuclear) with awareness of associated caveats is essential for the accurate subtyping and distinguishing from the reactive processes.

## Role of lab in Management of PPH :Basics and Beyond

**Dr (Prof.) Jyoti Kotwal**
MD, PDF Haemat FRCP Edin, FAMS, Professor and Chairperson,
Department of Hematology, SIR GANGA RAM HOSPITAL

Post Partum hemorrhage is an obstetric emergency and a cumulative blood loss of > 1000ml is accompanied by signs or symptoms of hypo volume and it is one of the top 5 causes of maternal mortality.. Whatever the initial etiology of PPH, dilutional coagulopathy sets in all patients. As d-dimer values is increased in the third trimester and these patients are wrongly diagnosed as DIC. The major coagulation abnormally associated with PPH is acquired fibrinogen deficiency as per recent studies.

The clinical aim is to recognize PPH early and carry out evidence based management. Pregnancy is a different physiological state with increased factor VIII, vWF increased fibrinogen and d-dimer and shortened PT and APTT as compared to normal population. Thus, when there is bleeding due to trauma, tone, tissue or thrombin (4Ts of PPH) and there is consumptive coagulopathy, many cases are misdiagnosed as DIC due to the normally increased d-dimer. The ISHTH DIC score does not work in PPH.

Studies have shown that fibrinogen < 200mg/dL (2gm/L) is 100% positive predictive of PPH and a value >4gm/L (400mg/dL) is 79% negative predictive of PPH. Thus, the early laboratory monitoring of fibrinogen has a major role in management of PPH and preventing the development of florid DIC.

Point of care monitoring of the by Thromboelastography (TEG) and Rotational Thrombo- elastometry (ROTEM) are the newer methods of real-time early evidence based patient blood management. FIBTEM A 5 on ROTEM has a good correlation with fibrinogen value and is available in 10 minutes of sample reaching the lab. We have studied the correlation of FIBTEM with fibrinogen and have developed the cut off both for FIBTEM and fibrinogen as a predictor of PPH for Indian women undergoing delivery.

Plasma fibrinogen levels and FIBTEM A5 can be used to predict PPH and to guide blood transfusion in on appropriate manner once PPH occurs. Further studies are required to validate the application of ROTEM in management of PPH.

The same as well as the algorithms to follow as well as the advice the lab can give on patient blood management will be discussed.

# Policy Interventions for combating AMR: Indian scenario

**Prof. Jyotsna Agarwal**
Head, Dept. of microbiology, RMLIMS, Lucknow

Antimicrobial resistance in pathogens causing important communicable diseases has become a matter of great public health concern globally including our country. The factors responsible for this are widespread use and availability of practically all the antimicrobials across the counter meant for human, animal and industrial consumption. To monitor antimicrobial resistance it is necessary to have regulations for use of antibiotics in the country, creation of national surveillance system for antibiotic resistance, mechanism of monitoring prescription audits, regulatory provision for monitoring use of antibiotics in human, veterinary & industrial sectors and identification of specific intervention measures for rational use of antibiotics. For monitoring use and misuse of antibiotics: Schedule H of the drug and cosmetics act contains a list of 536 drugs which are required to be dispensed on the prescriptions of a registered medical practitioner.

In India, the antibiotics are used widely in food animals as growth promoters and to prevent and treat infection. We need to establish inter sectoral coordination committee with experts from various sectors as one health approach, and develop regulations on usage of antimicrobials in poultry and other animals as well as the requisite labelling requirements in food.
Various strategies suggested for promoting rational use of drugs are:

1. Educational strategy: Training, printing materials, media-based approach
2. Managerial strategy: Monitoring & supervision, generic substitution, patient cost sharing (economic incentives) etc
3. Regulatory strategy: Enforcement, sanction, drug withdrawal, market control etc
4. Formulation & implementation of an antibiotic policy: that are standard national / local treatment guidelines advocating evidence based immunotherapy or combination therapy. This must include consideration of spectrum of antibiotics,pharmacokinetics / pharmacodynamics, adverse effects monitoring,cost and special needs of individual patient groups

**The National Action Plan on AMR was adopted in April 2017 and priorities outlined in the National Action Plan for antimicrobial resistance in India are:**
Strategic priority 1 Improve awareness and understanding of AMR through effective communication, education, and training
Strategic priority 2 Strengthen knowledge and evidence through surveillance
Strategic priority 3 Reduce the incidence of infection through effective infection, prevention, and control
Strategic priority 4 Optimize the use of antimicrobial agents in all sectors
Strategic priority 5 Promote investments for AMR activities, research, and innovations
Strategic priority 6 Strengthen India's leadership on AMR by means of collaborations on AMR at international, national, and sub-national levels

# Liquid-based Cytology in Effusion Samples

**Dr Nalini Gupta, MD, DNB, MNAMS, MIAC**
Professor, Department of Cytology and Gynaecologic Pathology
Postgraduate Institute of Medical Education and Research
Chandigarh, India.

Serous effusions cytology refers to the examination of fluid samples collected from body cavities such as the pleural, peritoneal, or pericardial cavities. These effusions can result from various conditions, including infections, malignancies, inflammatory processes, and more. Cytological analysis of serous effusions involves the examination of cells present in the fluid, which can provide valuable diagnostic information.

**Collection and Processing:** Adequate amount of anti-coagulant must be added in effusion samples in order to prevent clot formation. Gross examination of the sample with recording of the volume, colour and consistency of the fluid sample is of utmost importance. The sample is processed after centrifuging the sample at 2000 rpm x 10 min at room temperature and air-dried MGG and alcohol fixed Pap stained smears are prepared.

**Liquid-based Cytology:** Liquid-based cytology (LBC) is another method used to process cytological samples, including effusion samples, for microscopic examination. Fluid sample can be transferred to liquid-based cytology (LBC) preservative and an LBC slide can be prepared. Special stains and immunocytochemistry can be done on LBC smears; however sections from cell blocks are preferred for immunochemistry for better results. LBC offers several advantages over conventional smear techniques, which include better cellular preservation, cleaner background with much less debris, mucus, and inflammatory cells, uniform distribution of cells leading to better visualization and interpretation of cellular details, additional testing on the same sample, such as immunohistochemistry (IHC), special stains and molecular studies, better storage and transportation of samples and a standardized method of sample preparation, reducing variability and ensuring consistent results.

**Processing of hemorrhagic samples:** Haemolysis in hemorrhagic samples can be achieved before processing [by Carnoy's fixative or glacial acetic acid), during processing (by preparing 'fish-tail' smears, LBC smears, buffy coat smears), and after slide preparation (by saline re-hydration/ Saponin).

Cell blocks must be prepared from effusion samples especially in cases of malignant effusions. Various methods used for preparing cell blocks include plasma thrombin/ thromboplastin clot technique/ Agar-based, sodium alginate/CaCl2/histogel/collodion bag etc. Cell blocks are valuable to perform immunochemistry and the cytological material can also be used for other ancillary techniques such as polymerase chain reaction etc.

The Reporting Systems used for reporting of Serous effusion cytopathology includes The

International System as well as a system proposed by Indian Academy of Cytopathologists. Risk of malignancy (ROM) has been given for each category. The International System includes five categories-
Category I: Non-diagnostic [ROM- 17.4 ± 8.9];
Category II: Negative for malignancy [ROM- 21 ± 0.3];
Category III: Atypia of undetermined significance [ROM- 66 ± 10.6];
Category IV: Suspicious for malignancy [ROM- 82 ± 4.8];
Category V: Malignant [ROM- 99 ± 0.1].

**Adenocarcinoma:** Adenocarcinoma cells are typically larger than mesothelial cells, have a higher nuclear-to-cytoplasmic ratio, round nuclei, coarse chromatin with prominent nucleoli. Windows may be seen even in adenocarcinoma cells. The cells are usually present as tightly-cohesive three-dimensional ball-like/ papillaroid structures with nuclei of the cells forming borders of the ball-like clusters. Cytoplasmic vacuolation may be present. Immunochemistry is performed in order to delineate the primary site such as GATA 3 for breast primary, CDX2/ SATB2 for colorectal primary, PAX8 for mullerian origin and TTF1/ Napsin A for primary of pulmonary origin. Pleural effusion samples with metastatic lung adenocarcinoma can be subjected to EGFR mutation testing, IHC for ALK and ROS1 rearrangements and PDL1 testing. Next-generation sequencing is also possible on these effusion samples as these samples are highly cellular. IHC for estrogen receptor, progesterone receptor and HER2 is also done on cell blocks of effusion samples with primary in breast.

**Mesothelioma in effusion samples:** Mesothelioma cells may form papillary clusters, three-dimensional aggregates, or "ball-like" arrangements (spheroids). The cells are often larger, polygonal, and exhibit distinct cytoplasmic borders. They may show microvilli on the cell surface. Tumor nuclei tend to be elongated, grooved, and irregular in shape. Nucleoli may be prominent. Intracytoplasmic inclusion bodies, such as psammoma bodies or hemosiderin, can be seen in mesothelioma.

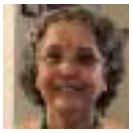
**Immunohistochemistry:** Mesothelioma cells may express markers like calretinin, WT-1 (Wilms tumor-1), and cytokeratin 5/6.

**Lymphocyte-rich effusion:** There can be lymphocytosis, which may be a pure reactive process like in tuberculosis or a manifestation of an indolent lymphoma. In another situation, there can be infiltration by large cell lymphoma, which is easy to diagnose on cytomorphology alone, but may require ancillary techniques especially flow cytometry for proper sub-typing.

Types of lympho-proliferative disorders encountered in serous effusions include lymphoma (more commonly NHL; rarely Hodgkin's lymphoma), followed by leukemias, multiple myeloma and other myeloproliferative disorders. The reported frequency of lymphoma in malignant effusions is approximately 10-15%. Pleural effusion is usually seen in 5-20% non-Hodgkin's lymphoma (NHL) cases. Involvement of peritoneal cavity and pericardial cavity is comparatively less common.

Cytological analysis of serous effusions helps guide further diagnostic and treatment steps. It can aid in diagnosing malignancies, determining the primary source of metastases, monitoring treatment response, and assessing disease progression.

# Changes as per 15189:2022



**Dr Neelamni Murthy**
Sr. Consultant Pathologist, 38 years Post MD

The objective of ISO 15189:2022- Medical Laboratories – Requirements For Quality And Competence is to promote the welfare of patients and satisfaction of laboratory users through confidence in the quality and competence of medical laboratories

This Standard is far less prescriptive and hence makes it more flexible to meet and evidence the requirements set out in the document .Phrases comply to the ISO directives with "Shall"(indicating a mandatory requirement) and "should "indicating a strong recommendation ) still exist. However at relevant places these are followed by qualifier statements "as appropriate e.g.; clause 6.6.3 "so as to ensure that the laboratories have a good understanding of their practices and if something is considered as inappropriate to the services provided would be able to justify when a particular requirement is not met with. Second highlighted change is that of Point of Care Testing (POCT) which is now integral to the Standard and supersedes ISO 22870.
Few old terms are deleted e.g.; Laboratory Director, Quality Manager Process and few new terms eg.IQC,EQA, Complaint,etc are added.

The Standard is aligned to the revised ISO 9001:2015 which in turn led to the revision of ISO 17025 :2017 and the Standard 15189:2022 now has a similar structure with the management requirements appearing towards the end in both the documents. Risk management is aligned with the principles of ISO 22367, Laboratory Safety are aligned with ISO 15190 and requirements for sample collection and transport with ISO 20658

The ISO 15189:2022 quality management section is more specific in its wording and has been segregated into general (Clause4.0),structural (Clause5.0)resource (Clause6.0),process (Clause7.0) and management system requirements (Clause8.0 ). It specifies the responsibilities of personnel either external or internal personnel in the laboratory as the ones or means responsible for the management system, including reporting on any areas that need improvement, identifying deviations, and ensuring the effectiveness of laboratory activities. However as in the earlier version the role of the Laboratory Director is crucial and he/she is bestowed with the ultimate responsibility for the overall operations of the laboratory

To meet the changing work culture of the laboratory processes sample collection activities are included in the resource requirements(6.8) ,irrespective of the process being handled by internal or external personnel and emphasising the fact that the requirements of the Standard are to be met with.Referral laboratories and Consultants too are included in the same sub clause.

Examination processes elaborate on evaluation of measurement uncertainty (7.3.4).A significant change is seen in the documentation of examination procedures where in information from product instructions for use could be incorporated into the procedures by reference ,provided

the laboratory has verified the same and has not made any changes to the instructions provided by the manufacturer. There is a strong emphasis on "validity pertinent to clinical decision-making," thus enhancing the interaction between laboratory and clinicians

Non conforming work (7.5) control of data and information management(7.6) Complaints (7.7) and Continuity and Emergency preparedness planning (7.8)are now part of Process requirements to meet the objectives of the Standard being welfare of patients and user satisfaction . A quality manual and a designated quality manager are no longer mandatory requirements

To meet the objectives of the Standard ( as given in its introduction itself) the approach is risk based with, patient welfare and user satisfaction as focus and encourages continuous improvement within medical laboratories. Throughout the document there are requirements that are designed to ensure that the risk to patients is central to the ethos of the laboratory's quality management design and processes. So over all the rights, requirements, and safety of patients are more strongly emphasized in this updated version of ISO 15189.

**What Next ???**
All medical laboratories need to perform a gap analysis ,reviewing their existing quality management system against the requirements of the new Standard. The analysis must involve input from staff ,including staff in clinical advisory /interpretation of results and stake holders before embarking on implementation of the same .

## Liquid Based Cytology in Cervical lesions

**Prof. Neeta Kumar**
Formerly Professor and Head, Faculty of Dentistry, Jamia Millia Islamia.
Professor, Maulana Azad Medical college, New Delhi
35 Years (National and International)

Liquid Based techniques is increasingly used for cervical cytology. Both Thin Prep and Sure path (approved by FDA) give mostly similar results . Sure Path is more popular due to lesser cost.
LBC: Advantages over conventional smear

1. Sample collection process for smear taker is simplified. There is no operator dependent variation since processing controlled by the lab.
2. Quicker to screen as limited screen area, monolayer cells and minimal obscuring material. Reduced inadequate rate - Cells better preserved, well fixed and not obscured by blood, mucus, inflammation. Infectious organisms retained and better preserved.
3. Multiple slides can be produced allowing further testing. Residual material available for further ancillary tests- HPV, chlamydia etc.
4. Facilitates computer assisted screening (automated) due to standard preparation. Sample storage can be done for a long time for future

**LBC: Morphology**

There is not much difference from the conventional smear. Cells are randomised so cell company is lost. (In CS: a cell is identified by the company it keeps). Over all cell looks smaller due to "rounding up" effect of the liquid. leading to altered N:C ratio.

Due to rapid fixation, the cells are well preserved – evidenced by clarity of nuclear chromatin. Chromatin often take a pale vesicular delicate appearance. Prominent nucleoli may be seen due to pale chromatin in benign and reactive conditions- Caution for overdiagnosis.

Some Loss of background material may occur. Necrosis, blood, inflammation, mucin may be seen clinging to cells and may be missed. In addition fragmentation of cell groups occurs and more discohesive cells are seen.

Adequacy criteria: For LBC a minimum of 5000 squamous cells are required as compared to 8-12,000 cells for conventional smear. Criteria for glandular component is same. Background is clean. Smear is free of obscuring material like blood and inflammation. This has reduced unsatisfactory rate in LBC

**NILM:**

Inflammatory smear: smear must include reactive epithelial changes. Mere presence of neutrophils does not make it inflammatory.

Benign reactive cellular changes due to inflammation: Cytoplasmic changes may comprise of intracytoplasmic vacuoles, Perinuclear halo , amphophilia or increased Eosinophilia, fuzzy cellular outlines. Squamous metaplasia may also be seen. Neutrophils may be seen sticking to epithelial cells. Nuclear changes may be seen in the form of karyomegaly, Bi or multinucleation, pyknosis, karyorrhexis and karyolysis.

**Infectious organisms**

Normal flora of Lactobacilli can be seen as gram positive rods with cytolysis of intermediate cells. Infective organisms like Trichomonas vaginalis, Candida sp. , Actinomyces, Bacterial vaginosis, Herpes can be easily identified due to monolayering of cells and clean background in addition to cellular changes associated with it.

Key features by which LBC improves accuracy include complete cellular capture with minimal sample loss., specimen randomization, improved cellular preservation, improved individual cell visualization, decrease in obscuring factors (blood and inflammation) and consistent cell location and viewing area.

**Disadvantages of LBC:** It is much more costly than conventional pap and may not be feasible in resource limited settings. Manual liquid based systems are gaining popularity is such settings. Preparation is more labor intensive than conventional. Some minor differences in architecture and morphology need attention in the beginning.Training is required for both the screeners and the smear takers. Because nuclear details are too good, initially more borderline diagnosis (ASC) during learning curve has been observed in previous studies.

## Utility of Immunohistochemistry in Uterine tumours

**Dr Nita Khurana**
Director Professor& Head, Department of Pathology,
Maulana Azad Medical College, New Delhi

The diagnostic journey of uterine tumours starts from history of the patient and a thorough physical examination followed by radiological evaluation as indicated. The invasive procedures like endometrial aspiration and hysteroscopic guided endometrial biopsy are performed to ascertain the nature of the lesion. The detailed morphologic assessment is helpful for a diagnosis in most cases. The need for immunohistochemistry arises when certain diagnostic issues need to be resolved and for use as a predictive and prognostic biomarker. The issues which will be the focus of this session will include IHC as an aid to make a definite diagnosis using histomorphology as base in situations like differential diagnosis of endometrial carcinoma histotype as endometrioid, serous or clear cell with emphasis on high grade carcinomas using pattern of immunolocalization of the antigens and their interpretation guidelines ,difference between undifferentiated and dedifferentiated carcinoma, differential diagnosis of endocervical and endometrial adenocarcinoma, utility of IHC surrogate markers for molecular classification of endometrial carcinomas as POLE mutated, p53 abnormal, MMR deficient and no specific molecular profile and utility in diagnosis of tumours with mixed epithelial and mesenchymal components , differential diagnosis of mesenchymal tumours of stromal and muscle origin with variants of leiomyoma and uncommon lesions and theradiagnostic uses including assessment for immune therapy.

## Bone marrow features of hematolymphoid malignancies

**Dr Prabhu Manivannan**
Additional Professor, Department of Pathology, JIPMER, Puducherry

The diagnosis of hematolymphoid malignancies requires a holistic approach of combining the clinical features, morphology, immunophenotyping and molecular genetics. The most commonly used investigations such as complete blood count and peripheral smear examination provides the most valuable features prompting the further invasive bone marrow examination. The bone marrow aspirate and imprint smears usually provide better cytomorphological features such as increased blasts/ atypical cells, dyspoietic features indicating the progressing from underlying myelodysplastic syndrome (MDS). The presence of Auer rods/ Phi bodies is pathognomic of

myeloid leukemia. There are certain morphological pointers indicating the underlying genetic basis such as long slender Auer rods in neutrophils is usually seen in RUNX1-RUNX1T1 AML. It also provides additional material for ancillary techniques such as special cytochemical stains, flow cytometry or molecular tests.

It is generally recommended to perform the trephine bone marrow biopsy at the same time as both the techniques are complimentary. The biopsy provides better details about overall cellularity and altered topographical arrangement which would be useful in myeloproliferative neoplasms. The stromal changes such as fibrosis, necrosis, gelatinous transformation, amyloid deposits in plasma cell neoplasms and bony trabecular changes are better appreciated in trephine biopsy. The pattern of involvement such as interstitial, paratrabecular, nodular, sinusoidal and diffuse patterns are classical associated with non-Hodgkin lymphoma. The disease such as Hodgkin lymphoma and myeloma are known for its focal involvement and better seen in biopsies.

Immunohistochemistry performed on the trephine biopsy at times provides the greater details which might be missed out on only morphological examination. In hypoplastic marrow, CD34 helps in identifying the abnormal localisation of abnormal precursors indicating the hypoplastic MDS or progression from aplastic anemia. This also helps in differentiating the metastasis from the hematolymphoid tumors with anaplastic or pleomorphic features.

The morphological evaluation not only helpful for diagnosis but also useful for predicting the prognosis in post-therapy cases. The morphological evidence of remission is defined by presence of less than 05% blast in acute leukemias. It should be used as a starting point which helps in guiding to choose next higher investigations such as immunophenotyping or molecular techniques.

## EVOLVING UPDATES ON CNS TUMORS- 2016-2023

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The 2016 World Health Organization Classification (WHO) of Tumors of the Central Nervous System (CNS) represented a major change. It recommended an "integrated diagnosis" comprising histologic and molecular information facilitating a more precise diagnosis of specific CNS tumors. Its goal was to provide greater diagnostic precision and reproducibility resulting in more clinical relevance and predictive value, ultimately leading to better patient care. Advances in molecular classification, mostly resulting from DNA methylation array profiling of CNS tumors, were occurring at a very rapid pace and required more rapid integration into clinical practice.

cIMPACT-NOW updates and other recent papers plus salient features of 2021 WHO CNS5 in this lecture were discussed. Recognizing the need to integrate these into clinical practice more rapidly and without inordinate delay, the International Society of Neuropathology (ISN) 2016 sponsored an initiative called cIMPACT-NOW. Goal of cIMPACT-NOW was to provide clarification regarding contentious issues arising in the wake of the 2016 WHO CNS update as well as report new advancements in molecular classification of CNS tumors and new tumor entities emerging

as a result of these advancements. cIMPACT-NOW updates: It thus laid the foundation for the 5th edition of the WHO Classification of CNS tumors (2021 WHO CNS 5). Most of the proposed recommendations, including the use of Arabic numerals, grading within tumor types, newly recognized tumor entities, and revised nomenclature, have been incorporated in 2021 WHO CNS5. Similarly, key diagnostic genes, molecules, pathways, and/or combinations in major primary CNS tumors have been incorporated.

The seven Updates, the key molecular diagnostics, and the importance of DNA methylation profiling in CNS tumors, the integrated reporting of CNS tumors, hypermutated gliomas and the importance of identifying such tumors, especially for therapeutic purposes were discussed.

## Quality Contol in IHC

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### Introduction

Immunohistochemistry (IHC) is widely used in surgical pathology and serves as a diagnostic, prognostic, and predictive tool. It was recognized over a decade ago that IHC assay standardization was vital for reproducible and reliable results. Agencies, including the Biologic Stain Commission, CLSI (previously NACCLS), FDA, and the manufacturing sector established guidelines, standards, and recommendations for reagents and package inserts. These efforts have resulted in consistent, high-quality assay components and instruments on which contemporary IHC is performed. It has also allowed the development and use of so-called black box IHC stainers in which IHC assays have preset parameters set by the manufacturer. Despite the improvements of reagents and automation, authors over the years have consistently noted the inconsistent quality of IHC assays. Unlike previous IHC-epochs, most of the causative responsibility rests with the individual laboratory performing the IHC and specifically, the lack of standardization and attention to quality assurance programs. Prior consensus conferences identified the likely causative factors (Table 1). Recent studies strongly suggest that these problems are widespread and are not insignificant. Unfortunately, laboratories often do not appreciate the negative impact on their specimens and the validity of IHC performed on them created by diverging away from these recommendations. The recommendations listed below do not diverge from general practice recommendations and are supported by scientific data.

### Summary of Preanalytic, Analytic and Post analytic factors.

**PREANALYTIC**

- Test Selection
- Acquisition- (Delay in putting samples into fixative)
- Transport time
- Decalcification- type and time
- Fixation: Type & time
- Tissue Processing: Type & temperature

- Slide drying time and temprature

**ANALYTIC**

- Antibody selection- (different clones)
- Antibody Optimization- Antigen retrieval procedure, antibody dilution, incubation time
- Instrumentation- (different automated platforms, manual stains)
- Protocol, control selection
- Reagent validation
- Technician training/ certification
- Laboratory certification

**POST ANALYTIC**

- Control evaluation (positive and negative controls)
- Results interpretation & reporting
- Pathologist experience/ CMEs
- Digital pathology with imaging analysis.

## PREANALYTIC FACTORS

### 1. Fixation

Tissue should be fixed in 10% neutral-pH, phosphate-buffered formalin for a minimum of 8 hours. If formalin or formalin-alcohol mixture is a component solution on the tissue processor instrument, tissue should be fixed in formalin for 6 to 12 hours before being loaded onto the tissue processor. Non–formalin-based fixatives and or alternative fixation methodologies are strongly discouraged in regard to IHC, in large part because performance data are limited and extrapolation from formalin-fixed data is unreliable.

The time and type of preprocessor fixative and the time, type, and component solutions of the tissue processor should be recorded for every IHC tissue specimen. Delineation of neutral-buffered formalin alone is inadequate; rather, specification of the type of buffer and its molar concentration is required. The same is true for reagents on the tissue processing instrument, with special attention to xylene alternatives and type of embedding paraffin. This information should accompany all tissue that is sent to an outside laboratory where the IHC staining is performed. When IHC studies are performed in a reference laboratory, the originating laboratory is responsible for recording this information for each case. This information should be permanently maintained as part of the daily work run logs of the IHC laboratory. This information should be checked against the quality of the IHC stains and be incorporated into the IHC stain quality review log performed the laboratory head or their designate.

### 2. ANTIGEN RETRIEVAL (AR)

AR is presumed to ''restore'' the antigenicity after the formalin fixation. The parameters of an AR protocol must be balanced to match the unique length and type of tissue fixation of the individual laboratory and the characteristics of the individual antibody. For tissues fixed in formalin for at least 6 hours before being loaded onto a tissue processor, one AR protocol is usually adequate. Different types of AR, such as low pH buffers, high pH buffers, various types of heating devices, enzyme digestion, etc, should be available for each AR protocol, depending on the optimization parameters of individual antibodies. Although enzyme digestion is not generally considered as a component of AR, it functions as an alternative method for practical purposes. It may be the preferred method of tissue pretreatment for some antibodies.

Declcification- Decalcification may have a negative impact on an IHC assay for certain antigens.

As such, CAP recommends that a disclaimer be included in the surgical pathology or fine-needle aspiration report, which may read as follows: "This IHC assay has not been validated on decalcified tissues. Results should be interpreted with caution given the likelihood of false negativity on decalcified specimens."

## ANALYTICAL FACTORS

Proper analysis of IHC assays is critical for correct tumor identification and prognostic/predictive assessment. Pathologists who have documented expertise in this field should interpret IHC assays. Expertise is attained by documenting experience with literature use and proficiency testing.

## ANTIBODY OPTIMIZATION

Optimization is the process in which the laboratory serially tests and modifies component procedures with the end point of producing a consistent high-quality assay. Antibody optimization must be completed before moving on to the validation step. Antibody validation is the process whereby the parameters of the IHC assay, including its accuracy, reliability, and reproducibility are established. Reagent package inserts should be read completely and in detail before beginning the optimization process. The laboratory director should sign the package insert and it should be maintained in an easily accessible laboratory manual as a reference source during the active life of the antibody or reagent. The manufacturer recommendations listed in the package insert should be followed.

The test tissue used to optimize the IHC assay should contain the target antigen. Tissue specimens used for antibody optimization should be selected on the basis of the intended use of the IHC clinical assay and the level of target antigen expression in the respective tissue specimen.

The specific antibody clone selected for the IHC assay should be selected on the basis of intended clinical use of the IHC assay and the established record of immunoreactivity in published studies.

## ANTIBODY VALIDATION

1. Laboratories must validate all IHC tests before placing into clinical service.
2. For initial validation of every assay used clinically, with the exception of HER2/neu, ER, and PR (for which established validation guidelines already exist), laboratories should achieve at least 90% overall concordance between the new test and the comparator test or expected results. If concordance is less than 90%, laboratories need to investigate the cause of low concordance.
3. For initial analytic validation of nonpredictive factor assays, laboratories should test a minimum of 10 positive and 10 negative tissues. When the laboratory medical director determines that fewer than 20 validation cases are sufficient for a specific marker (eg, rare antigen), the rationale for that decision needs to be documented.
4. For initial analytic validation of all laboratory-developed predictive marker assays, laboratories should test a minimum of 20 positive and 20 negative tissues. When the laboratory medical director determines that fewer than 40 validation tissues are sufficient for a specific marker, the rationale for that decision needs to be documented.
5. For a marker with both predictive and nonpredictive applications, laboratories should validate it as a predictive marker if it is used as such.

6. When possible, laboratories should use validation tissues that have been processed with the

same fixative and processing methods as cases that will be tested clinically.

7. If IHC is regularly done on cytologic specimens that are not processed in the same manner as the tissues used for assay validation (eg, alcohol-fixed cell blocks, airdried smears, formalin postfixed specimens), laboratories should test a sufficient number of such cases to ensure that assays consistently achieve expected results. The laboratory medical director is responsible for determining the number of positive and negative cases and the number of predictive and nonpredictive markers to test.
8. If IHC is regularly performed on decalcified tissues, laboratories should test a sufficient number of such tissues to ensure that assays consistently achieve expected results. The laboratory medical director is responsible for determining the number of positive and negative tissues and the number of predictive and nonpredictive markers to test.
9. Laboratories may use whole sections, Tissue microarray blocks(TMAs), and/or multi tissue blocks (MTBs) in their validation sets as appropriate. Whole sections should be used if TMAs/MTBs are not appropriate for the targeted antigen or if the laboratory medical director cannot confirm that the fixation and processing of TMAs/MTBs is similar to clinical specimens.
10. When a new reagent lot is placed into clinical service for an existing validated assay, laboratories should confirm the assay's performance with at least 1 known positive case and 1 known negative case.
11. Laboratories should confirm assay performance with at least 2 known positive and 2 known negative cases when an existing validated assay has changed in any one of the following ways: antibody dilution, antibody vendor (same clone), incubation or retrieval times (same method).—Expert Consensus Opinion
12. Laboratories should confirm assay performance by testing a sufficient number of cases to ensure that assays consistently achieve expected results when any of the following have changed: fixative type, AR method (eg, change in pH, different buffer, different heat platform), antigen detection system, tissue processing or testing equipment, environmental conditions of testing (eg, laboratory relocation), laboratory water supply. The laboratory medical director is responsible for determining how many predictive and nonpredictive markers and how many positive and negative tissues to test.
13. Laboratories should run a full revalidation (equivalent to initial analytic validation) when the antibody clone is changed for an existing validated assay.
14. The laboratory must document all validations and verifications in compliance with regulatory and accreditation requirements.

***External Positive and Negative Controls for Tumor of Unknown Primary-***

| Normal tissue type | IHC markers |
|---|---|
| Colon | AE1/3, CAM 5.2, CK20, SATB2, CDX2, CDH17, villin, b-catenin, M, MUC4, MUC2, P504S |
| Pancreas | CK7, AE1/3, chromogranin, CD56, synaptophysin, NSE, insulin, glucagon |
| Skin | S100, HMB-45, Mart-1, MITF, vimentin, CK5/6, CK903 (34BE12), p63, p40 |
| Liver | CK7, arginase-1, HepPar-1, CD10, pCEA |
| Stomach | MUC1, MUC5AC, MUC6, S100P, gastrin |
| Kidney | CK7, EMA, E-cadherin, vimentin, CD34, CD31, ERG, CD10, RCCma, pVHL, P504S, PAX-2, PAX-8 |
| Testis | Calretinin, inhibin-a, androgen receptor |

## NEW LOTS OF ACTIVE IHC ASSAYS

With additional studies and publications, many IHC markers initially believed to be highly specific gradually lost their specificities. However, additional novel biomarkers are emerging continuously. Both first and second IHC panels for a specific differential diagnosis should be kept updated.
Begin with a limited panel of IHC markers first. If the first IHC panel for the specific differential diagnosis is inconclusive, the follow-up second IHC panel to be used.
Pathologist should Know the Diagnostic Sensitivity and Specificity of Each IHC Marker before applying one.

## POST ANALYTIC FACTORS

INTERPRETATION- There is no universal IHC scoring system. An example used by several members is to classify 0% to 20% immunoreactivity as ''focally reactive,'' 21% to 80% as ''variably reactive,'' and >80% immunoreactivity as ''uniformly reactive.'' Another system being used in clinical predictive IHC assays is the IHC score (range, 0 to 400) which is the product of staining intensity (range, 1 to 4) and percentage of immunoreactive target antigens. IHC is an adjunct to pathologic interpretation, and all IHC assays should always be interpreted within the context of morphology.

**REPORTING IHC -** The following information should be included in the IHC assay report:

1. The subcellular localization (nucleus, cytoplasm), which is immunoreactive, pattern of antigen expression (granular, dot, linear, homogeneous), intensity of immunoreactivity within the cellular compartment, and the proportion of cells demonstrating this pattern of immunoreactivity.
2. The scoring system that was applied and the immunoreactivity cut-point threshold of a positive result.
3. Whether there is an internal positive control cell or structure present on the test (patient) slide and descriptive documentation regarding the intensity and proportion of internal control cells or structures that were immunoreactive.
4. Specimen number / block used for IHC slides.
5. Type of fixative and length of fixation.
6. Tissue specimen anatomic location and type of specimen.

In the absence of a universal IHC assay scoring system, responsibility rests with the pathologist to provide this information in the report. Documentation also provides a method of verifying the interpreting pathologist evaluated immunoreactivity in the appropriate antigenic target and applied appropriate cut-points thresholds

### Track and compare the IHC utilization data-

The utilization of immunohistochemical stains should be audited periodically for each subspecialty group and each pathologist; IHC utilization among pathologists within the same subspecialty group is compared and contrasted, using the group average or median as the benchmark. The pathologists found to excessively use IHC tests may be informed to correct the overutilization issue, using the group average as a reference. With this in mind, the concept of best practices in immunohistochemistry can be effectively implemented.

# Manual Tissue Microarray Construction: Pitfalls and Solutions

**Dr Preeti Diwakar**
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Tissue microarray (TMA) is a pivotal research tool which has revolutionized the research in pathology owing to its high throughput immunohistochemical and molecular analysis. Currently, TMA is an integral part of preclinical and translational research. It is a technique in which small tissue cores are extracted from multiple pre-existing paraffin embedded donor tissue blocks and re-embedded onto a single recipient block according to the predesigned array map. Construction of TMAs using commercially available silicone molds and automated tissue arrayers is expensive and confines its use in resource limited settings. However, manual TMA can be constructed in a cost-effective manner using different methods described in literature. Kononen et al. described the "recipient block technique" which is one of the most commonly followed method for manual TMA construction. In this method wax cores are removed from the recipient block and replaced by the tissue cores from multiple donor blocks. The other technique often referred as "tape method" does not require prefabricated recipient block, instead a double sided tape is placed in the embedding mold on which tissue cores are adhered securely followed by addition of molten wax to make the TMA block. The common pitfalls encountered in manual TMA construction include:

- Difficulty in core extraction
- Cracking of TMA during core insertion
- Retained wax inside the punch biopsy needle
- Loss of tissue cores while handling with forceps
- Presence of enlarged holes around the tissue
- Presence of longer cores than depth of holes
- Tissue cores shorter than the depth of holes
- Bulging of block when cores placed closely
- Loss of cores during sectioning
- Breakage of blocks during sectioning

All these aforementioned issues can be tackled by undertaking few additional steps and precautions while constructing and sectioning TMA blocks. Thus, manual TMA is not only feasible, it is easy to construct once the technique is learnt and is a reliable alternative to the traditional paraffin-based techniques for research applications, especially in resource-limited centers with high patient load.

# Triple-Negative Breast Cancer (TNBC) – "Basics and way forward" What's new ?

**Dr Reena Tomar**
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Breast carcinomas represent a heterogeneous group of tumors that are diverse in behavior, outcome, and response to therapy. Triple-negative breast cancer (TNBC subtype (ER–/PR–/Her2–)) is a high risk breast cancer that lacks the benefit of specific therapy, aggressive in behaiour and TNBC accounts for fewer than 20% of breast cancer cases.

TNBC can be subtyped by various molecular surrogate immunohistochemical markers.
Expression of PDL 1, Androgen receptor AR , Ki 67 , CD44, CD24 ,CD49f, CD133 in tumour cells and immune cells in triple negative breast cancers (TNBC) verses non triple negative breast cancers (NTNBC) are important immunohistochemical marker and has correlation with clinical and pathological variables like age, histological grade and Tumour infiltrating lymphocytes (TILs).

Immunomodulatory IM, Mesenchymal stem cell like MSL are deleted from 2011 TNBC classification.

**2016 TNBC classification includes following**

- Basal like 1 BL1
- Basal like 2 BL2
- Mesenchymal M
- Luminal androgen recetor LAR

Novel tissue-based risk biomarkers for triple negative breast cancers is the need of the hour for planning the advanced strategies for the treatment and follow up in triple negative breast patients.

# Liquid Based Cytology: Techniques and Principles

**Dr Ruchika Gupta**
Scientist E & Coordinator, Division of Cytopathology, ICMR-National Institute of Cancer Prevention and Research, Noida

Pap smear was devised almost 80 years ago by Sir George Papanicolaou. The conventional method of cervical cytology has been successful with up to 80% reduction in mortality from cancer of the cervix in developed nations having organized cervical cancer screening programs. However, the conventional smears suffer from drawbacks such as high rate of unsatisfactory smears, uneven fixation, obscuring factors, and cellular clumping. Also, only a portion of the collected sample is transferred to the slide in conventional smears and the rest is discarded.

In order to circumvent the above-mentioned issues, Liquid-based cytology (LBC) was devised. LBC is a technology where cervical samples are collected in a liquid medium with appropriate fixative, thus reducing inadequate rate of cervical samples. LBC offers several advantages such as higher cellular yield, uniform representation of various cells in a monolayer, uniform fixation and fewer instances of air drying, lack of obscuring factors such as inflammation, blood and polymorphs, and the facility of using the remaining sample for molecular tests such as HPV detection.

**How is a cervical sample obtained for LBC?**

The US Food and Drug Administration (FDA) has approved two LBC Pap tests- ThinPrepTM in 1996 and SurePathTM, in 1999. LBC involves the use of Cervex-Brush to obtain the sample. The longer bristles of Cervex brush are inserted into the endocervical canal and outer shorter bristles touch the ectocervix. The brush is rotated 360O five times clockwise to obtain an adequate sample. In SurePathTM, the brush head is detached into a vial containing preservative fluid while in ThinPrepTM, the brush head is removed after rinsing it thoroughly in the vial. The two USFDA-approved technologies differ in their principle of LBC preparation:

- SurePath® test – Density gradient centrifugation process
- ThinPrep® test – Filtration method

# Understanding Microbial Mechanisms of Antimicrobial Resistance

**Dr Sheetal Verma**
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Antimicrobial resistance (AMR) stands as a critical global health threat, as microorganisms adapt to withstand the impact of drugs, compromising the efficacy of standard treatments. This widespread resistance endangers public health by limiting our ability to combat infections effectively. A comprehensive grasp of the microbial mechanisms underpinning AMR is imperative for formulating successful intervention strategies.

Genetic mutations serve as a primary driver of resistance, with alterations in microbial DNA affecting target proteins and neutralizing the intended impact of antimicrobial drugs. Horizontal gene transfer is a pivotal process wherein microorganisms rapidly exchange resistance genes, accelerating the dissemination of resistance within and between species.

Biofilm formation, predominantly observed in bacteria, involves the creation of structured communities encased in protective matrices. This shields microorganisms from the deleterious effects of antimicrobial drugs and facilitates the efficient exchange of resistance genes. Efflux pumps, specialized proteins, actively expel drugs from microbial cells, diminishing drug concentrations and efficacy.

Enzymatic inactivation is a prevalent resistance strategy, where microorganisms produce enzymes that modify or destroy antimicrobial drugs. Notably, beta-lactamase enzymes in bacteria can break down beta-lactam antibiotics, rendering them ineffective. Microorganisms also employ the alteration of metabolic pathways, enabling them to bypass drug effects by modifying the synthesis of essential compounds.

Understanding these microbial mechanisms underscores the urgency of a multifaceted approach to tackle AMR comprehensively. This strategy includes advocating responsible antibiotic use, implementing robust surveillance measures, emphasizing infection prevention practices, and fostering the development of innovative antimicrobial agents. Collaborative efforts across healthcare, research, and policy domains are imperative to address AMR effectively. By promoting responsible practices, bolstering surveillance, and investing in novel treatments, the global community can mitigate the impact of AMR, ensuring the continued effectiveness of antimicrobial treatments and safeguarding public health on a worldwide scale.

# Multi-disciplinary Integration and End-to-end Total Lab Automation: Opportunities, Challenges, and Impact

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**Abstract:**
Total laboratory automation (TLA) combines full automatization of preanalytics, analytics, and postanalytics, such that specimens are processed, tested, and stored with minimal user intervention. It increases laboratory efficiency by reducing error, increasing productivity in terms of sample processing capacity, offers cost and space savings and safer working conditions for the staff due to minimal sample handling. In May 2020, AIIMS Delhi established TLA enabled Laboratory with multi-disciplinary integration comprising of Biochemistry, Immunoassay, Infectious serology, Hematology and Coagulation studies, in one location.

In the last three years, the implementation of this technology has presented us with newer opportunities in terms of sample processing efficiency and holistic interpretative reporting of results.

It has presented with opportunities to facilitate add-on testing and sometimes lab-initiated testing, leading to decrease in time to diagnosis and confidence in reporting. The implementation of TAT In this talk we would discuss the opportunities, challenges, and the impact of TLA on diagnostics delivery. Impact of TLA was assessed under four heads: Increased Capacity, Turn-around-time (TAT), Lab Efficiency and Benefits to patients. Lab efficiency was assessed in terms of Space and Manpower; benefits to patients were assessed using subjective tools like distance to walk, number of phlebotomies done and waiting time. It was observed, delivery of diagnostics has improved in terms of lab quality indicators. Implementation of auto-validation process has led to lesser turn-around-times. It has brought in space and manpower economy and improved benefits to patients even with increased sample turnover.

# Challenges in implementation of AMS program

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**Prof(Dr) Monika Rajani MD,FAME**
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**Outline -** Stewardship of antimicrobials is an apt descriptor of related activities that help optimize antimicrobial therapy, ensuring the best clinical outcome while lowering the risk of subsequent development of antimicrobial resistance. However, the implementation of the AMS program faces several challenges.

Challenges-Infection severity often precludes withdrawing or postponing antibiotics. The complex decision-making process frequently involves clinicians with limited expertise. Difficult to ensure disease-long continuity of care by the same medical makes the scenario complex. Many clinicians regard the right to prescribe antibiotics freely (unrestricted) as a basic human right. The lack of knowledge, time, prescriber beliefs, and attitudes may be just as persuasive as test results for an antibiotic prescriber. The desire to use newer agents and commercial push further makes the program inefficient. Often antibiotics are still thought to be a panacea for any physiological insult. Inappropriate combinations, poor-quality drugs, and no control over the use of restricted antibiotics a major reason for AMS program failure. In addition, patient expectations and demands may also sway some prescribers to falter.

The vicious spiral of life-threatening infections centres on complex clinical scenarios with many stakeholders. Evidence is mostly limited to empirical use. The presence of infection and infectious pathogens is often not confirmed. Clinicians are in a position of conflict with the goals of stewardship. Risk stratification is seldom practiced for the severity of infection and the presence of resistant bugs.

Secondary or mixed infections and non-infective aetiology further challenge the AMS policies. Infection control and the AMS program run together. However, a lack of political will and commitment from stakeholders makes them weak. AMS strategies have to be contextual with workable solutions rather than a cookbook approach. The organization needs to risk manage the barriers and help with solutions. Outpatient and over-the-counter usage of antibiotics is largely unchecked. The MDT approach involving the clinicians, AMS team, clinical microbiologist, and pharmacologist is seldom practiced. Costs related to staff employment and education, as well as management and information technology with health economic analysis, are largely missing.

Antibiotic stewardship program faces diverse challenges and needs to be implemented in a structured manner and requires an interdisciplinary team, educational interventions, system innovations, process indicator evaluation, and feedback to health-care workers.

The predicament remains: Under treatment versus overtreatment/irrational use.

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## Direct Immunofluorescence: Technique and Applications in Anatomic Pathology

**Dr Anisha Manocha**
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Immunofluorescence (IF) is a simple, reliable and reproducible technique in immunopathology and it can either be direct or indirect.

The principle of direct IF is based on the interaction of the antigen to be detected, with a fluorochrome labelled primary antibody, which results in fluorescence emission. FITC is the most commonly used fluorochrome.

Direct IF detects in situ and circulating immune deposits involved in the pathogenesis of various diseases, especially in kidney and skin disorders. It is particularly useful in diagnosing immune complex mediated glomerulonephritis and immune mediated vesiculo bullous disorders. Its other uses include detection of IgG subclasses, C4d detection in post renal transplant, diagnosing leucocytoclastic vasculitis, porphyrias etc. A complete panel including IgG, IgM, IgA, C3, C1q, kappa and lambda must be performed on fresh tissue transported in Michel's medium. Any fluorescent staining must be reported under the following headings: antigen type, intensity, location, pattern and extent. Furthermore, IF is now being performed on paraffin embedded sections after enzymatic retrieval with proteinase K whenever fresh tissue is not available.

It's major pitfall include diminishing of the fluorescence on exposure to light, necessitating fast reporting and making long term storage difficult.

In this talk, we discuss the principle, technique, procedure and common applications of direct immunofluorescence in anatomic pathology.

# ROLE OF EBUS-TBNA IN DIAGNOSIS OF MEDIASTENAL LYMPH NODES / LUNG LESIONS

**Dr. Poojan Aggarwal**
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In the era of precision medicine, Endobronchial ultrasound-guided transbronchial needle aspiration (EBUS-TBNA) is the technique of choice for diagnosis of mediastinal/ lung lesions. It has high diagnostic yield and excellent safety profile, avoiding more invasive procedures, such as mediastinoscopy. It is the modality of choice for staging and restaging of Non-small cell lung cancers. With the bronchoscopes and EBUS needles improvised over the years, more material is available for routine smear preparation and carrying out ancillary techniques on cell blocks which includes diagnostic IHC and biomarker prognostication.

Most common non-neoplastic lesions that we encounter in our practice are the granulomatous lymph nodes in which tuberculosis and sarcoidosis are the main differentials. Other lesions encountered include anthracotic nodules, fungal infections, mediastinal cysts and even intra-thoracic thyroid extension. It is important to keep in mind the lesions encountered and correlate with radiological features as sometimes there can be a diagnostic surprise. Special stains like Ziehl Neelsen, Grocott Methenamine Silver, Periodic Acid Schiff still hold relevance in diagnosis.

EBUS-TBNA is now recommended modality in diagnosis, staging and follow-up of patients with lung carcinoma. A good cell block is a gold mine for IHC work-up, biomarker testing, providing tissue for FISH and NGS (if not directly collected). Interestingly, morphology still holds the horses. Cytopathologists can guide the clinicans, when encountering uncommon lesions like enteric adenocarcinoma, pleomorphic carcinomas, lesions of the thymus and even unsuspected metastasis especially from a renal cell carcinoma and breast carcinoma, which can relapse even after decades. Lymphoproliferative lesions are an another important category where, often the biopsies can be crushed but a meticulous evaluation of the cytology smears provide clue to diagnosis especially in Non-Hodgkin lymphomas. FNA also holds advantage in rapidly multiplying necrotic lesions as multiple agitations in different directions are carried out so more representative cells and preserved lesional cells are often maintained.

EBUS-TBNA is a safe, highly sensitive technique for diagnosing lesions of lung and mediastinum. Cytopathology training is a must for identifying clues even in small volume samples.

# Bone marrow findings in benign disorders

**Dr Ruchi Gupta**
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The bone marrow's role in benign disorders is pivotal, as disruptions in its normal functioning can lead to imbalances in blood cell production. Understanding these disorders and their impact on hematopoiesis is crucial for accurate diagnosis and the development of effective management strategies. This investigation may prove to be diagnostic for a wide variety of benign hematological disorders, as listed in Table 1. Bone marrow is the primary site for the production of blood cells hence most common indications for performing a bone marrow include; unexplained anemia, thrombocytopenia, bicytopenia and or pancytopenia. Both aspiration and biopsy are important as they complement each other. The marrow examination guides in ascertaining whether the cytopenias are due to a hypo-productive state, or whether there are other reactive, infective, infiltrative, or other neoplastic causes of marrow failure. Bone marrow failure might also sometimes be secondary to other systemic disorders, like metabolic disorders. It is also one of the commonest investigations performed in patients with suspected pyrexia of unknown origin (PUOs), wherein the smears prepared, or cultures performed from the aspirated often clinch the diagnosis.
The common benign disorders, presenting with anemia, thrombocytopenia or pancytopenia encountered in day to day practise will be discussed in the session.

**Common Indications of Bone marrow examination in suspected benign disorders**

1. **Unexplained Anemia**
   Nutritional deficiencies, infections, red cell aplasia, autoimmune diseases, chronic anemias secondary to systemic diseases, inherited states like DBA, CDA etc
2. **Thrombocytopenia**
   ITP, Drugs, infections, hypersplenism, amegakaryocytic thrombocytopenia
3. **Pancytopenia**
   Aplastic anemia, severe B12 deficiency, autoimmune states, HLH, Infections like Leishmaniasis, tuberculosis
4. **Organomegaly, particularly hepatosplenomegaly**
   Storage and other infiltrative disease
5. **Pyrexia of unknown origin**
6. **Suspected Hemophagocytic lympho-histiocytosis**
7. **Certain hemolytic anemias like Hereditary sideroblastic anemia, PNH**

# Coagulation Screening tests: Techniques and interpretation

**Tushar Sehgal**
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All India Institute of Medical Sciences, New Delhi

After a proper clinical assessment, pertinent history, and family history, the clinician often has a fair idea concerning the cause of a patient's bleeding. The most appropriate laboratory tests can then be ordered that may include a complete blood cell count, platelet count, and evaluation of a peripheral blood film, a prothrombin time (PT), and an activated partial thromboplastin time (APTT).

The division of the clotting cascade into the various pathways such as the intrinsic, extrinsic and common pathways has a little in vivo validity but nevertheless remains a useful concept for interpreting the results of laboratory investigations. The coagulation screening tests include PT, APTT, TT (less common) and fibrinogen. The PT was described by Quick in 1935 and the test was initially often referred to as 'Quick's Prothrombin Time.' The PT measures the activity of the so-called extrinsic and common pathways. Normal values depend on the thromboplastin used, the exact technique and whether visual or instrumental end-point reading is used. With most rabbit thromboplastins the normal range of the PT is between 11 and 16 sec; for recombinant human thromboplastin it is shorter (10–12 sec). Each laboratory should establish its own normal range. The common causes of a prolonged PT are as administration of oral anticoagulant drugs (vitamin K antagonists), presence of a direct acting inhibitor of factor Xa, liver disease, vitamin K deficiency, disseminated intravascular coagulation (DIC) and rarely, a previously undiagnosed factor VII, X, V or prothrombin deficiency or defect.

The APTT in contrast to the PT, measures the activity of the intrinsic and common pathways of coagulation. Essentially the term 'partial' means phospholipid is present but no Tissue Factor. The normal range is usually about 26 to 40 s. The actual times depend on the reagents used and the duration of the pre-incubation period, which varies in manufacturers' recommendations for different reagents. Each laboratory should calculate its own normal range. The common causes of a prolonged APTT are DIC, liver disease, massive transfusion with plasma-depleted red blood cells, administration of or contamination with heparin or other anticoagulants, a nonspecific circulating anticoagulant (such as lupus anticoagulant), the presence of a direct acting anticoagulant drug (e.g. anti-IIa or anti-Xa agents) and deficiency of a coagulation factor other than factor VII.

The TT is a widely performed test although not necessarily part of the basic screening profile. The TT is affected by the concentration and function of fibrinogen and by the presence of inhibitory substances. A patient's TT should be within 2 s of the control (i.e. 15 to 19 s). Times of 20 s and longer are abnormal. The common causes of prolonged TT are a hypofibrinogenaemia as commonly found in DIC; dysfibrinogenaemia, either inherited or acquired, in liver disease or in neonates; unfractionated heparin, oral or parenteral direct thrombin inhibitors, hypoalbuminaemia and paraproteinaemia.

Fibrinogen assays are an important part of the investigation of a bleeding tendency or an unexplained prolongation of the APTT or PT. Guidelines on fibrinogen assays recommend the Clauss technique for routine laboratory use. The normal range is approximately 1.8 to 3.6 g/l. Fibrinogen defects may be quantitative (hypo- or hyper-fibrinogenaemia) or qualitative (dysfibrinogenaemia). Inherited dysfibrinogenaemia is rare, but an acquired defect of fibrinogen function is more common, especially in liver disease.

## Suggested Reading

Practical Hematology, Dacie & Lewis: 12th edition.

# EQAS IN LABORATORY

**Dr Rinu Goyal**
Head of The Department, Dept of Lab Medicine
Sitaram Bhartia Institute of Science & Research

ISO 15189 is an international standard that specifies requirements for competence and quality in medical laboratories. EQAS (External Quality Assessment Scheme) is a crucial component of a laboratory's quality management system. The purpose of EQAS is to monitor and assess the laboratory's performance by comparing its results with those of other laboratories. Here are some of the key requirements for EQAS as per ISO 15189:

1. Participation in EQAS:
   - The laboratory should participate in EQAS or similar proficiency testing programs relevant to its scope of activities.
   - Participation should cover the entire scope of the laboratory's examination and testing services.
2. Frequency of Participation:
   - The laboratory should participate in EQAS at regular intervals, as appropriate for the frequency of testing and the stability of the analytical process.
3. Selection of EQAS Providers:
   - The laboratory should carefully select EQAS providers that offer relevant and reliable proficiency testing materials.
4. Management of EQAS Results:
   - The laboratory should establish procedures for the timely and appropriate management of EQAS results.
   - Deviations from expected results should be investigated, and corrective actions should be taken as necessary.
5. Performance Evaluation:
   - The laboratory should use the results from EQAS to evaluate and improve the performance of its examination and testing processes.
6. Documented Procedures:
   - The laboratory should have documented procedures for participating in EQAS, including how to handle EQAS samples, analyze results, and take corrective actions.
7. Feedback to Staff:
   - Feedback on EQAS performance should be provided to relevant laboratory personnel, and training or retraining should be considered if needed.
8. Record Keeping:
   - Records of participation in EQAS, including results and any corrective actions taken, should be maintained.
9. Communication with EQAS Providers:
   - The laboratory should communicate with EQAS providers to clarify any issues related to the EQAS materials, instructions, or results.
10. Continuous Improvement:
    - The laboratory should use the information obtained from EQAS to continually improve its processes and procedures.

# DOCUMENTATION REQUIREMENTS

**Dr Neeraj Jain**
President - APP & Founder President - MELAP

ISO 15189 is an international standard that specifies requirements for competence and quality in medical laboratories. It covers aspects such as quality management, personnel, facilities, equipment, pre-examination processes, examination processes, and post-examination processes. You need to create documents to meet the standard's requirements.

Here are some key documents commonly associated with ISO 15189:

1. **Quality Management:** This document outlines the laboratory's quality management system, including the scope of accreditation, the organizational structure, and the laboratory's policies and procedures.
2. **Procedure Manuals:** These include detailed procedures for each process in the laboratory, such as sample collection, handling, and analysis. The procedures should be in line with the requirements of ISO 15189.
3. **Record-Keeping Forms:** Forms for documenting various activities, including sample identification, equipment calibration, quality control results, and corrective actions.
4. Training Records: Documentation of training and competency assessment for laboratory personnel.
5. **Equipment Calibration and Maintenance Records:** Records of equipment calibration, maintenance activities, and any issues related to equipment performance.
6. Internal Audit Reports: Documentation of internal audits conducted to ensure compliance with ISO 15189 requirements.
7. **Non-conformance and Corrective Action Reports:** Records of any non-conformities identified and the corresponding corrective actions taken.
8. **Risk Management Plan:** A plan that identifies and assesses risks associated with laboratory processes and outlines strategies for managing those risks.
9. **Management Review Minutes:** Documentation of management review meetings, where the laboratory's performance and the effectiveness of the quality management system are discussed.
10. **Proficiency Testing Records:** Documentation of participation in proficiency testing programs and the laboratory's performance in these tests.

It's important to note that the specific requirements for documents may vary based on the size and complexity of the laboratory and the scope of accreditation. When implementing ISO 15189, it's recommended to work with experts in quality management systems or seek guidance from accreditation bodies to ensure that your documents meet the standard's requirements.

# ABSTRACT

## *Schedule*

# ABSTRACT SCHEDULE

## ORAL PRESENTATION SCHEDULE (1100-1400Hrs)

| S.No | Abs ID | Abstract Title | Presenter Name | Co-Authors Name | Schedule |
|---|---|---|---|---|---|
| 1 | 1 | BLOOD GROUP CHANGING FOLLOWING CHEMOTHERAPY IS NORMAL , ALTHOUGH RARE - A CASE SERIES | MD RAHUL ALAM | DR LUBNA KHAN | 1100-1105Hrs |
| 2 | 2 | A DIAGNOSIS OF PLASMACYTOMA THAT TURNED OUT TO BE MULTIPLE MYELOMA | MD RAHUL ALAM | DR LUBNA KHAN | 1105-1110Hrs |
| 3 | 4 | SALIVARY GLAND TUMOURS: ROLE OF FINE NEEDLE ASPIRATION CYTOLOGY(FNAC) AS FIRST LINE INVESTIGATION | MEGHA SHARMA | DR NITIN GUPTA<br>DR MANISH SHARMA | 1110-1115Hrs |
| 4 | 5 | RETROSPECTIVE ANALYSIS OF ELDERLY PATIENTS WITH IDIOPATHIC THROMBOCYTOPENIC PURPURA(ITP) | MEGHA SHARMA | DR SUBHASH BHARDWAJ | 1115-1120Hrs |
| 5 | 6 | A RETROSPECTIVE STUDY ABOUT PERSISTENT PROTEINURIA IN CHILDREN. | MEGHA SHARMA | DR NITIN GUPTA<br>DR SUBHASH BHARWAJ | 1120-1125Hrs |
| 6 | 7 | CYTOMORPHOLOGICAL SPECTRUM OF CT-GUIDED FNAC OF LUNG MASS | SHAYHER BANU | DR VISHNUPRIYA<br>DR KAHKASHAN RIAZ | 1125-1130Hrs |
| 7 | 8 | MOLECULAR SUBTYPING OF BREAST CANCER: A NEW ERA OF PERSONALIZED MEDICINE | AKANKSHA HEGDE | | 1130-1135Hrs |
| 8 | 9 | LARGE CELL NEUROENDOCRINE CARCINOMA OF UTERINE CORPUS IN AN ELDERLY FEMALE POSING A DIAGNOSTIC DILEMMA- A RAREST HISTOLOGICAL VARIANT | PRACHI | DR.HEMA MALINI AIYER<br>DR. GAURAV SHARMA<br>DR. SATINDER KAUR<br>DR. RANDEEP SINGH | 1135-1140Hrs |

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| 9 | 12 | – NEUTROPHIL LYMPHOCYTE RATIO (NLR), PLATELET LYMPHOCYTE RATIO (PLR), AND MONOCYTE LYMPHOCYTE RATIO (MLR) AS PREDICTORS OF SUICIDALITY IN PATIENTS WITH DEPRESSION | SNEHA SHUKLA | DR MAHAK GOYAL<br>DR. O.P. BHARGAVA<br>DR. S.K. TOTADE | 1140-1145Hrs |
| 10 | 13 | STUDY OF EFFICACY OF HAEMATOLOGICAL SCORING SYSTEM IN NEONATAL SEPSIS | NEETU YADAV | DR RISHI DIWAN | 1145-1150Hrs |
| 11 | 14 | STUDY OF CYTO-HISTOPATHOLOGICAL CORRELATION OF THYROID LESIONS | SHYNA SACHDEVA | DR CHETNA JAIN | 1150-1155Hrs |
| 12 | 15 | UTILITY OF FINE NEEDLE ASPIRATION CYTOLOGY IN EVALUATION OF LYMPHADENOPATHY | MANISH SHUKLA | DR BRAJENDRA SHAKYAWAL | 1155-1200Hrs |
| 13 | 20 | EVALUATION OF SERUM MALONDIALDEHYDE, SERUM TOTAL PROTEINS, AND SERUM URIC ACID LEVELS IN PATIENTS WITH PSORIASIS | VEERA ANUSHA V | DR. V. BHAVANI | 1200-1205Hrs |
| 14 | 21 | EVALUATION OF SERUM URIC ACID, ZINC, ALBUMIN AND HBA1C LEVELS IN PATIENTS WITH TYPE 2 DIABETES MELLITUS | J. MONISHA | DR. K.V. LEELA | 1205-1210Hrs |
| 15 | 22 | PROGNOSTIC SIGNIFICANCE OF SERUM MAGNESIUM IN ISCHEMIC STROKE | R KRISHNA MANASA | DR. K.V. LEELA | 1210-1215Hrs |
| 16 | 23 | STUDY OF ENDOMETRIAL CHANGES IN UTERUS WITH LEIOMYOMA | DEEPAK KUMAR DEWANDA | DR. SUMIT PRAKASH RATHORE<br>DR. RISHI DIWAN<br>DR. AMIT SHARMA | 1215-1220Hrs |

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| 17 | 25 | A COMPARATIVE STUDY OF THE PARIS SYSTEM AND COMMON REPORTING FOR URINE CYTOLOGY WITH CYTO-HISTOLOGY CORRELATION: A STUDY OF 829 URINE CYTOLOGY SPECIMENS | ANJU KHAIRWA | ANJU KHAIRWA<br>SWATI<br>PRERNA MAHAJAN<br>PREETI DIWAKER | 1220-1225Hrs |
| 18 | 27 | ROLE OF PLATELET PARAMETERS AS BIOMARKERS IN PREECLAMPSIA & ECLAMPSIA | SHIPRA SINGH | DR KALPANA SHARMA<br>DR GEETA PACHORI | 1225-1230Hrs |
| 19 | 28 | TO STUDY THE EFFECTIVENESS OF INTERNATIONAL CONSESUS GROUP FOR HEMATOLOGICAL REVIEW (ICGHR) CRITERIA FOR MANUAL PERIPHERAL SMEAR REVIEW | SHWETA KUMARI | DR RISHI DIWAN | 1230-1235Hrs |
| 20 | 31 | MORPHOLOGICAL SPECTRUM OF ANAEMIAS IN GERIATRIC POPULATION AT JHALAWAR MEDICAL COLLEGE, JHALAWAR (RAJASTHAN) | AMIT SHARMA | DR. SUMIT PRAKASH RATHORE | 1235-1240Hrs |
| 21 | 32 | RELATIONSHIP OF PRETERM LABOUR WITH MATERNAL SERUM MAGNESIUM AND ZINC LEVELS | SEERAM SAMEERA | DR. I VASUNDHARA DEVI | 1240-1245Hrs |
| 22 | 33 | CYTOMORPHOLOGIC PANORAMA OF GIANT CELL TUMOUR OF TENDON SHEATH | PRIYA SUNEJA | DR. PREETI DIWAKER, DR. KARISHMA RANJAN | 1245-1250Hrs |
| 23 | 34 | CYTOMORPHOLOGICAL SPECTRUM OF BREAST LESIONS DIAGNOSED ON FINE-NEEDLE ASPIRATION CYTOLOGY IN A TERTIARY HEALTH CARE AND SUB-DISTRICT HOSPITAL IN GARHWAL REGION OF UTTARAKHAND. | RAJESH CHOUDHARY | SHEELA CHAUDHARI, GHAZALA RIZVI SRIJAN SRIVASTAV | 1250-1255Hrs |

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| 24 | 35 | THE HISTOPATHOLOGICAL SPECTRUM OF NON-INFECTIOUS BENIGN LESIONS OF SKIN AT TERTIARY HEALTH CARE HOSPITAL IN GARHWAL UTTARAKHAND. | SWATI SANGWAN | DR SACHAN BHAT | 1255-1300Hrs |
| 25 | 36 | HISTOMORPHOLOGICAL SPECTRUM OF GALLBLADDER LESIONS IN A TERTIARY HEALTH CARE HOSPITAL IN GARHWAL REGION OF UTTARAKHAND. | BARBIE MECH | DEEPA HATWAL<br>PAWAN BHAT<br>SRIJAN SRIVASTAV | 1300-1305Hrs |
| 26 | 37 | EVALUATION OF HEMATOGICAL PARAMETERS IN CHRONIC KIDNEY DISEASE PATIENTS UNDERGOING HAEMODIALYSIS | DEBANJAN DUTTA | DR CHETNA JAIN | 1305-1310Hrs |
| 27 | 38 | STUDY OF CYTOMORPHOLOGICAL SPECTRUM OF THYROID LESION IN MIDDLE AGED WOMEN | RISHITA SAINI | DR CHETNA JAIN | 1310-1315Hrs |
| 28 | 39 | EVALUATION OF ACCURACY OF STATIC TELEPATHOLOGY IN DIAGNOSIS OF ENDOMETRIAL BIOPSIES | RADHIKA C SASTURKAR | DR PUSHPALATHA K | 1315-1320Hrs |
| 29 | 40 | ROLE OF USG/CT GUIDED FNAC IN DIAGNOSIS OF LUNG LESIONS | RAKSHA MEHRA | DR SUDHA PANKAJ MEENA<br>DR VINNY GUPTA | 1320-1325Hrs |
| 30 | 43 | METASTATIC TUMOR TO PANCREAS: A SERIES OF 18 CASES DIAGNOSED ON EUS FNA | KINJAL KOTAK | | 1325-1330Hrs |
| 31 | 49 | MYSTERIES OF GASTRIC BIOPSY DECODED BY HISTOPATHOLOGY AND ENDOSCOPY. | PRAGNYA .P. PATIL | DR. SUCHITA. V. DESHMUKH<br>DR.PRADNYA. CHIMANKAR | 1330-1335Hrs |
| 32 | 50 | A CASE OF DIFFUSE MIDLINE GLIOMA H3 K27 ALTERED PRESENTING IN THE DORSAL SPINE OF A YOUNG ADULT | PRACHI | DR. HEMA MALINI AIYER<br>DR. GAURAV SHARMA<br>DR. ASHISH KUMAR SHRIVASTAV | 1335-1340Hrs |

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| 33 | 51 | IMMUNOHISTOCHEMICAL CHARACTERISATION OF CELL OF ORIGIN IN DIFFUSE LARGE B- CELL LYMPHOMA AND ITS ASSOCIATION WITH THE DOUBLE EXPRESSOR PHENOTYPE: A RETROSPECTIVE STUDY | PRACHI | DR. HEMA MALINI AIYER<br>DR. GAURAV SHARMA<br>DR. SARITA RANI JAISWAL<br>DR. SUPARNO CHAKRABORTY | 1340-1345Hrs |
| 34 | 52 | CYTOLOGY REPORTING SYSTEM FOR LUNG CANCER: JAPAN LUNG CANCER SOCIETY AND THE JAPANESE SOCIETY OF CLINICAL CYTOLOGY(JLCS-JSCC) | AKANKSHA | DR. SANJAY KUMAR<br>DR SUNITA SINGH | 1345-1350Hrs |

## POSTER PRESENTATION SCHEDULE (1400-1600Hrs)

| S.No | Abs ID | Abstract Title | Presenter Name | Co-Authors Name | Schedule |
|---|---|---|---|---|---|
| 1 | 3 | CYTOMORPHOLOGY OF ROUND CELL LESION | ARTI PATEL | DR. MALA KANTHALI | 1400-1405Hrs |
| 2 | 10 | SOLITARY PLASMACYTOMA OF STERNUM: - A RARE CASE | SNEHA SHUKLA | DR. RASHMI NAYAK<br>DR. PUSHPA BATHAM | 1405-1410Hrs |
| 3 | 11 | ANAPLASTIC CARCINOMA OF THYROID - A RARE CASE REPORT | SHRADDHA SAXENA | DR.RASHMI NAYAK<br>DR. PUSHPA BATHAM | 1410-1415Hrs |
| 4 | 16 | FINE NEEDLE ASPIRATION CYTOLOGY IN DIAGNOSIS OF LYMPHOPROLIFERATIVE NEOPLASM IN FEMALE BREAST | SHARIB ANWAR | DR RISHI DIWAN<br>DR CHETNA JAIN | 1415-1420Hrs |
| 5 | 17 | GIANT ECCRINE SPIRADENOMA-A MIMICKER OF MALIGNANCY | CHANDRAKANTA MEENA | DR RICHA SHARMA<br>DR CHETNA JAIN | 1420-1425Hrs |
| 6 | 18 | FINE NEEDLE ASPIRATION CYTOLOGY OF PHYLLODES TUMOUR IN BREAST OF MALE PATIENT | PRAKASH CHAND DARIYA | DR. CHETNA JAIN<br>DR. RICHA SHARMA | 1425-1430Hrs |

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| 7 | 19 | FINE NEEDLE ASPIRATION CYTOLOGY OF DUCTAL CELL CARCINOMA IN MALE BREAST - AN UNUSUAL PRESENTATION. | MALKA GULNAR NAHID | DR. RISHI DIWAN DR. CHETNA JAIN | 1430-1435Hrs |
| 8 | 24 | FINE NEEDLE ASPIRATION CYTOLOGY OF ADENOCARCINOMA OF UNKNOWN PRIMARY PRESENTING AS METASTATIC MASS AT ELBOW - AN UNUSUAL PRESENTATION | RISHABH PATNI | DR. RISHI DIWAN DR. CHETNA JAIN | 1435-1440Hrs |
| 9 | 26 | MALIGNANT GRANULAR CELL TUMOUR OF FLOOR OF MOUTH (NON-NEURAL IN ORIGIN)- A RARE CASE REPORT AND REVIEW OF LITERATURE | ANJU KHAIRWA | ANJU KHAIRWA NADEEM TANVEER1 | 1440-1445Hrs |
| 10 | 29 | ALVEOLAR SOFT PART SARCOMA- A RARE CASE REPORT | ARCHITA TYAGI | DR (PROF.) SEEMA GUPTA | 1445-1450Hrs |
| 11 | 30 | NODULAR HIDRADENOMA OF BREAST - A BENIGN ADNEXAL TUMOR THAT MIMICKING BREAST CARCINOMA CLINICALLY. | RAMPRASAD DHAKAD | DR RICHA SHARMA DR RISHI DIWAN | 1450-1455Hrs |
| 12 | 41 | TITLE: CONVENTION SMEARS OF PLEURAL EFFUSION CYTOLOGY REVEALING METASTATIC CANCER OF ENDOMETRIUM: A RARE CASE REPORT | PRIYA SUNEJA | DR. ANJU KHAIRWA DR. NADEEM TANVEER | 1455-1500Hrs |
| 13 | 42 | PAPILLARY CARCINOMA THYROID (PTCA) MISSED ON FNAC | AJAY KUMAR KALWA | DR BRAJENDRA SHAKYWAL | 1500-1505Hrs |
| 14 | 44 | AN INCIDENTAL FINDING OF PAPILLARY THYROID CARCINOMA IN A THYROGLOSSAL CYST | SONAXI JAIN | DR. KAVITA JAIN DR. MANJU PUROHIT | 1505-1510Hrs |

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| 15 | 46 | CONCURRENT CANNIBALISM AND HEMOPHAGOCYTOSIS IN A REFRACTORY ACUTE MEGAKARYOBLASTIC LEUKEMIA WITH T(7;16)(P15;P13.1) - A CASE REPORT | APEKSHA BHAT | ANAB SAYYADA, RACHIT KHANDELWAL, SWASTIKA PADMAPATI, UDAYAKUMAR DS, RITU CHADHA, BHAWNA JHA, SHALINI GOEL, AKSHAY GORE, RISHAB PANDEY, DHWANEE THAKUR, NEHA RASTOGI, SATYA PRAKASH YADAV, RENU SAXENA | 1510-1515Hrs |
| 16 | 47 | DERMATOPATHIC LYMPHADENITIS - WATCH OUT FOR PIGMENT IN LYMPH NODES | NIKETA SHARMA | DR VANISHA DHAKA DR SEEMA PURI | 1515-1520Hrs |
| 17 | 48 | CUP-LIKE BLASTS IN A KMT2A REARRANGED B-ACUTE LYMPHOBLASTIC LEUKAEMIA | ANAB SAYYADA | RITU CHADHA, APEKSHA BHAT, SWASTIKA PADMAPATI, VRINDA SHARMA, AKSHAY GORE, NITIN MATHUR, UDAYAKUMAR DS, MANISHA JAIN, NITIN SOOD, RENU SAXENA | 1520-1525Hrs |

# ORAL
# *Presentations*

Abstract ID: 1

# BLOOD GROUP CHANGING FOLLOWING CHEMOTHERAPY IS NORMAL, ALTHOUGH RARE - A CASE SERIES

**MD RAHUL ALAM**
Co – Authors: DR LUBNA KHAN (PROFF, PATHOLOGY, GSVM MEDICAL COLLEGE, KANPUR )
Affiliation: GSVM MEDICAL COLLEGE, KANPUR

**Aim-Background:** Blood groups are determined by specific antigens attached to red blood cells that are either carbohydrate or protein in nature. Changes in gene expression encoding for various blood types are rare, with the ABO blood group antigen most commonly altered. Red blood cell (RBC) antigens are inherited traits and, as such, their expression is constant throughout the life of an individual. RBC antigen change has been occasionally described in association with hematological malignancies. These modifications of blood group antigens usually revert to normal after remission is attained.

**Material-Methods:** FORWARD AND REVERSE CROSS MATCHING ; TUBE METHOD.
The reason causing this mutation is unclear. However, in some cases changes in blood groups are related to patients' chemotherapy treatment and their remission status. Both the patients were diagnosed with AML M5 (based on the French-American-British classification) had discrepancy in their detected blood group by forward cross-matching . Reverse cross-matching was also done, which showed the absence of both anti-A and anti-B antibodies in first case and presence of anti-A antibodies in second case respectively . Both patients were started on 7 + 3 induction with cytarabine and daunorubicin, followed by consolidation with high-dose cytarabine. The strength of reaction of the patient's RBC with both anti-A and anti-B antibodies increased progressively with treatment in first case since there was no complete remission ,whereas, the second case underwent remission and regained his original blood group , that is, the strength of reaction of the patient's RBC with anti-A antibodies were found to be increasing.

**Results:** In this paper, we report different cases of different leukemias and their blood group changes during chemotherapy along with their remission.

FIRST CASE- Patient in whom blood group changed from AB, Rh positive to O, Rh positive, over the period of 5 years (2018-2023). During this time period, she was diagnosed with AML and was followed by chemotherapy (with cytarabine and daunorubicin). There has been no remission after recovery. It was noticed that the patient's blood group had changed.

SECOND CASE- Patient in whom blood group changed from B, Rh positive to O, Rh positive, over the period of 5 years (2016-2021). During this time period, she was diagnosed with AML and was followed by chemotherapy (with cytarabine and daunorubicin). There had been remission after recovery. Following the remission, patient regained his original blood group B, Rh positive.

THIRD CASE-
The third patient is 60-year-old. On investigation, he was found to have extreme thrombocytosis (3 000 000/mm3) and leucocytosis seen . In view of the leucocytosis, he was investigated for CML and found to be positive for BCR-ABL by reverse transcription PCR (RT-PCR). He received imatinib

400 mg/day and achieved complete remission at the end of 3 months. His blood group changed from AB, Rh positive to O, Rh positive and after remission he regained his original blood group AB, Rh positive.

FOURTH CASE-
The fourth patient is a 9-year-old boy who presented with fever, cough and cold of 2-week duration. On evaluation, he was found to be BCR-ABL positive and responded well to imatinib treatment and underwent remission. During the period of treatment , his blood group changed from B, Rh positive to O, Rh positive . Following the remission, patient regained his original blood group B, Rh positive.

**Conclusion:** Blood group changing following chemotherapy is normal

**Keywords:** AML indicates acute myeloid leukemia; FAB indicates French-American-British classification system; CML indicates Chronic Myeloid Leukemia

## Abstract ID: 2

# A DIAGNOSIS OF PLASMACYTOMA THAT TURNED OUT TO BE MULTIPLE MYELOMA

**MD RAHUL ALAM**
Co – Authors: DR LUBNA KHAN (PROFF, PATHOLOGY, GSVM MEDICAL COLLEGE, KANPUR )
Affiliation: GSVM MEDICAL COLLEGE, KANPUR

**Content**
**Aim-Background:** Abstract-Plasmacytoma is a tumor of plasma cells of bone or soft tissue that can occur anywhere in the body with or without evidence of systemic disease. It can progress to multiple myeloma if not evaluated and appropriately managed(1, 4). Introduction-Multiple myeloma is a tumor of plasma cells. Plasmacytoma may progress to multiple myeloma over 2-3 years. Plasmacytoma is a localized bone disease and is further differentiated from multiple myeloma by the presence of crabs (hypercalcemia, renal failure, anemia, bone disease), multiple lytic bone lesions, end-organ damage, and serum or urinary monoclonal proteins.(4)

**Material-Methods: On examination=**
• General blood picture=Red Blood Cells are predominantly normocytic normochromic, Total Leukocyte Count is slightly raised, Platelet count is adequate.
• Bone marrow aspiration examination=

FIG- Dutcher Bodies ( Intra- nuclear inclusions in Multiple Myeloma)
Site-posterior superior iliac spine , cellularity-hypercellular for age ;myeloid: erythroid ratio-cannot be assessed as bone marrow is infiltrated by myeloma cells (26%).Myeloma cells- these cells show high nucleo-cytoplasmic ratio, having central to eccentrically placed nuclei. Some of

them show prominent nucleoli.At places myeloma cells are seen with intranuclear inclusions. Myeloid series-shows normal count and maturation. Erythroid series- shows normal count and maturation. Megakaryocytes-mildly suppressed and normal in morphology.
FIG- Plasma cells in Multiple Myeloma
• Urine examination=Bence Jones Protein present.

FIG- BENCE JONES PROTEIN
• Serum electrophoresis=
FIG-Showing M- spike in Beta2 region.

**Results: CBC-**
Hb– 12.8 gm/dl | TLC–12,000 cells/cubic mm
DLC- Neutrophils: 74% | Lymphocytes: 22%
Eosinophils: 03 % | Monocytes: 01%
Basophils: 0% | Platelet count : 3,00,000 cells/ cubic mm

**GENERAL BLOOD PICTURE-**
• RBCs are predominantly normocytic normochromic, shows rouleaux formation
• TLC is slightly raised.
• DLC as mentioned above.
• Platelet count is adequate.
• No haemoparasites are seen.
• No immature cells are seen.

Bone Marrow Aspiration Examination
Site-Posterior superior iliac spine
Cellularity-Hypercellular for age

**MYELOID:**
ERYTHROID RATIO- cannot be assessed as bone marrow is infiltrated by myeloma cells (26%).
Myeloma cells- These cells show high nucleo-cytoplasmic ratio, having central to eccentrically placed nuclei. Some of them show prominent nucleoli. Few binucleated cells are also seen. At places myeloma cells are seen with intranuclear inclusions.
Myeloid Series-shows normal count and maturation.
Erythroid Series- shows normal count and maturation.
Megakaryocytes-Mildly suppressed and normal in morphology.
Lymphocytes-9%

**Conclusion:** Impression–Morphological features of bone marrow , detection of Bence Jones Protein in urine and M-spike in serum electrophoresis are suggestive of-Multiple Myeloma.
Conclusion-1. Awareness of this initial presentation of multiple myeloma is important.
2. Plasmacytoma may evolve to multiple myeloma.

**Keywords:** Plasmacytoma, multiple myeloma, m-protein, dutcher bodies,rouleaux

Abstract ID: 4

# SALIVARY GLAND TUMOURS: ROLE OF FINE NEEDLE ASPIRATION CYTOLOGY(FNAC) AS FIRST LINE INVESTIGATION

**MEGHA SHARMA**
Co – Authors: DR NITIN GUPTA ,DR MANISH SHARMA
Affiliation: J&K MEDICAL COUNCIL

**Content**
**Aim-Background:** It is concluded that FNAC can be widely used in the diagnosis of salivary gland lesions in view of high accuracy and rapid results and helps in subsequent disease management. Material-Methods: This prospective study was performed in Government Gandhinagar hospital, Jammu on patients with suspected salivary gland swelling ,who were reffered for FNAC from department of ENT for a period of 1 year.

**Results:** 52 patients with salivary gland sweling were included with age range from 9 to 73 years with male to female ratio 1.16 :1.

Sialadenitis was equally distributed among males and females, whereas pleomorphic adenoma was predominantly reported in females. Similarly Warthin tumor showed male prepondarence . 2 cases of oncytoma and 1 case of plasmacytoma( in hard palate) were reported in males,while 2 cases of basal cell adenoma were reported in females.In our study, malignancy tumours were equi distributed in both sexes.

**Conclusion:** It is concluded that FNAC can be widely used in the diagnosis of salivary gland lesions in view of high accuracy and rapid results and helps in subsequent disease management

**Keywords:** Salivary galand, FNAC, Pleomorphic adenoma

Abstract ID: 5

# RETROSPECTIVE ANALYSIS OF ELDERLY PATIENTS WITH IDIOPATHIC THROMBOCYTOPENIC PURPURA(ITP)

**MEGHA SHARMA**
Co – Authors: DR SUBHASH BHARDWAJ
Affiliation: J&K MEDICAL COUNCIL

**Content**

**Aim-Background:** ITP is often diagnosed in elderly individuals, typically presenting as a chronic disease (60-80%) with insidious onset or different hemorrhagic expression patterns. The objective of the present study was to evaluate ITP in elderly and to assess the risk of bleeding.

**Material-Methods:** A retrospective analysis of the 40 consecutive patients over a period of 5 years from May 2015 to March 2020 in Govt Medical College,Jammu was done. Diagnosis of ITP was mainly based on patient's history,physical examination,peripheral blood counts , peripheral smear examination and bone marrow examination.

**Results:** The study comprised a total of 40 patients, out of which 26 were females(65 %) and 14 male patients( 35 %) with female to male ratio of 1.8:1. Maximum number of cases were seen in age group 65-70 yrs followed by 70 – 75 yrs with the mean age of presentation being 70 year. Bone marrow examination in such cases revealed normal or increased number of megakarocytes.

**Conclusion:** This study involved elderly ITP patients (≥65 years old) Our results confirm that age influences the hemorrhagic pattern of ITP expression.

**Keywords:** ITP, Platelets, Elderly

Abstract ID: 6

# A RETROSPECTIVE STUDY ABOUT PERSISTENT PROTEINURIA IN CHILDREN.

**MEGHA SHARMA**
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Affiliation: J&K MEDICAL COUNCIL

**Content**

**Aim-Background:** The aim of the study was to review urinalysis results of children under 18 years of age and identify the etiology in those with significant persistent proteinuria.

**Material-Methods:** Data was collected on urine protein examination fromMay 2018 to June 2021 of all the patients less then 16 years in a tertiary medical centre. During this 3 year period, 15320 children received urinalysis and their medical records for age of presentation, clinical diagnosis,duration of symptoms and renal function were noted.

**Results:** During this 3 year period , 15320 children received urinalysis,which included 8618 boys (43.4%) and 11202 girls (56.6%), all aged less 16 years. Of these 15320 children, 3604 (18.1%) had proteinuria on at least one occasion. 742 children had persistant proteinuria .Among 742 cases, 322 cases presented with mild proteinuria,328 with moderate persistant proteinuria while 92 presented with serve persistant proteinuria. Among moderate proteinuria , sepsis was the most commom cause comprising 115 cases of the total 341, followed by steroid dependent nephritic syndrome cases (31 cases). For severe proteinuria cases, sepsis,SD nephrotic syndrome, RPGN,SLE were recorded as the most important cases.

**Conclusion:** This study concluded that assessing those children with persistent proteinuria is crucial as substantial of them develop chronic kidney disease and many clinical diseases other than primary renal disease also had renal involvement and manifest as proteinuria initially
Keywords: proteinuria,urinalysis

Abstract ID: 7

# CYTOMORPHOLOGICAL SPECTRUM OF CT-GUIDED FNAC OF LUNG MASS

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DR KAHKASHAN RIAZ
Affiliation: THE TAMIL NADU DR M.G.R MEDICAL UNIVERSITY

**Content**
**Aim-Background:** To study the cytomorphological spectrum of cases diagnosed by CT-guided FNAC of lung mass lesions.

**Material-Methods:** Retrospective study based on data collected over a period of one year( April 2022-April 2023)

**Data type :** CT Guided FNAC report records.

**Place of study :** Department of pathology, Velammal medical college hospital and research institute, Madurai.

**Method :** CT scan is done to know the exact position of lesion.
22G spinal needle percutaneous transthoracic approach
CT scan to ascertain position of the tip of the needle.
Aspirate is obtained and stained.

**Results:**
- Among 60 cases , 1 case was benign and 59 cases were malignant.
- Age group = 28 to 88 years
- Mean age =60years
- 27 cases of adenocarcinoma surpasses all other diagnosis.
- 1 case of metastatic round cell tumour was also encountered in a 28 year old male.
- 1 case of malignant mesothelioma also presented as a lung lesion with lymph nodal in volvement but is not included in the current study

**Conclusion:**
- Incidence of adenocarcinoma was higher than squamous cell carcinoma in our study.
- CT guided FNAC is a reliable, safe and minimally invasive procedure with high accuracy.
- Aids in early evaluation and improve treatment modality of patient.
- Morbidity of the procedure is low.

**Keywords:** Lung, Mass, Cytomorphology, Aspiration Cytology, Benign, Malignant, Tumour, Adenocarcinoma, Diagnosis, Treatment.

Abstract ID: 8

# MOLECULAR SUBTYPING OF BREAST CANCER: A NEW ERA OF PERSONALIZED MEDICINE

**AKANKSHA HEGDE**
Affiliation: POSTGRADUATE

**Content**
**Aim-Background:** 1.To molecularly classify breast cancers using ER, PR, Her2/neu, and Ki67.
2.To correlate between these molecular subtypes and tumor size, lymph node metastasis, lymphovascular and perineural invasion.

**Material-Methods:** The present study was conducted in a tertiary care hospital, Bengaluru from 2020 to 2023. 180 cases of invasive breast carcinomas were subjected to routine staining and immunohistochemistry (IHC) with estrogen receptors (ER), progesterone receptors (PR), Her2/neu and Ki67. The specimens were evaluated both histopathologically and immunohistochemically by Allred scoring for ER, PR, HER-2 markers. According to the St. Gallen Consensus 2011, the breast cancer cases were classified into molecular subtypes - Luminal A (ER+/PR+/HER2-/low Ki-67); Luminal B (ER+/PR+/HER2-/+/high Ki-67); HER2-overexpression (ER-/PR-/HER2+) and triple negative breast cancers/TNBCs (ER-/PR-/HER2-).These were correlated with other conventional prognostic parameters and analyzed statistically.

**Results:** Most of the cases belonged to 41-60 years of age group with Invasive ductal carcinoma, grade 2. Majority of the tumors measured 2-5cm in size. Luminal B (43%) was the most common subtype. 25% of triple negative, 16% each of luminal A and Her2 overexpression were noted. Luminal B and triple negative subtypes were commoner in patients older than 50 years. Triple negative and Luminal B cases were more commonly associated with higher SBR grade and pathological stage. Luminal B subtype showed frequent lymph node metastasis, DCIS, perinodal spread, lymphovascular and perineural invasion.

**Conclusion:** Luminal B was the most common subtype. The association of tumor grade, lymph node metastasis, lymphovascular and perineural invasion with the molecular subtypes showed a significant correlation($p<0.05$). In-depth investigation into the risks factors and prognosis associated with different molecular subtypes of breast carcinoma is beneficial to the patients.

Molecular classification offers the potential to reduce chemotherapy in breast carcinoma, leading to substantial benefits by decreasing toxicity and costs. Also, the study will act as a guide for appropriate targeted therapy of breast carcinomas.

**Keywords:** Molecular classification, Her2-positive breast cancer, luminal A breast cancer, luminal B breast cancer, subtypes of breast cancer, triple-negative breast cancer.

Abstract ID: 9

# LARGE CELL NEUROENDOCRINE CARCINOMA OF UTERINE CORPUS IN AN ELDERLY FEMALE POSING A DIAGNOSTIC DILEMMA- A RAREST HISTOLOGICAL VARIANT

**PRACHI**
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Affiliation: DHARAMSHILA NARAYANA SUPERSPECIALITY HOSPITAL, NEW DELHI

**Content**
**Aim-Background:** To illustrate the rarest histological entity at rarest site and to overcome the clinical hurdle and to create an awareness amongst pathologist, gynaeoncologist and medical oncologist

**Material-Methods:** 61 years old lady, presented with complaints of postmenopausal bleeding per vaginum. CECT ABDOMEN AND PELVIS and MRI PELVIS showed an ill defined heterogeneous mass lesion involving posterior and posterolateral uterine wall (upper, mid, lower) with full thickness invasion adjacent part of posterior myometrium and reaching upto the serosal margins of upper middle and lower uterine segment size approx. 5.5 x 7.2 x 6.9 cm APx TR X CC. The lesion is protruding the endometrial cavity anteriorly with mild collection within the cavity. Further she was taken up for total abdominal hysterctomy with bilateral pelvic lymph node dissection and omentcetomy. Microscopically, sheest and nests of large cell having open vesicular chromatin with conspicuous nucleoli with moderate amount of cytoplasm is seen showing immunopositivity for synaptophysin, chromogranin, CD56 and high Ki67 labelling index with para-aortic lymphn ode involvement and is staged as pTNM-pT1bN2aM0.

**Results:** Based on morphological and immunohistochemical findings, findings were suggestive of Large cell Neuroendocrine carcinoma of uterine corpus.

**Conclusion:** Large-cell neuroendocrine tumor of the endometrium is a rare tumor type which is difficult to diagnose. Our routine tissue sampling is often non-productive and these tumors can be mistaken for other poorly differentiated carcinomas. Sites of metastatic disease sometimes confuse the identification of the primary organ, and histological diagnosis requires a choice of neuroendocrine biomarkers.

**Keywords:** Large cell NEC, Uterine corpus, Rarest histological variant

Abstract ID: 12

# NEUTROPHIL LYMPHOCYTE RATIO (NLR), PLATELET LYMPHOCYTE RATIO (PLR), AND MONOCYTE LYMPHOCYTE RATIO (MLR) AS PREDICTORS OF SUICIDALITY IN PATIENTS WITH DEPRESSION

**SNEHA SHUKLA**
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**Content**

**Aim-Background:** Neutrophil Lymphocyte Ratio (NLR), Platelet Lymphocyte Ratio (PLR), and Monocyte Lymphocyte Ratio (MLR) are parameters of inflammation. Evidence suggests that inflammation has central role in pathogenesis of depression and suicidality. We aimed to compare NLR, PLR, MLR between patients of depression with suicidal behaviour and without suicidal behaviour.

**Material-Methods:** In this retrospective study, medical records of all patients with a diagnosis of depression during period of 1 January to 31 March 2023 (total 78 patients) were analysed. CBC results from routine blood investigation upon admission were analysed. NLR, PLR, and MLR were calculated and compared between depression without suicidal behaviour and depression with suicidal behaviour.

**Results:** NLR and PLR were found higher in suicidal patients than non-suicidal patients of depression.

**Conclusion:** Neutrophil Lymphocyte Ratio (NLR), Platelet Lymphocyte Ratio (PLR), and Monocyte Lymphocyte Ratio (MLR) can serve as early predictors of suicidality in patients with depression

**Keywords:** Depression, inflammation, suicide, white blood cell

Abstract ID: 13

# STUDY OF EFFICACY OF HAEMATOLOGICAL SCORING SYSTEM IN NEONATAL SEPSIS

Presenting Author: **NEETU YADAV**
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**Content**
**Aim-Background:** To study the Rodwell Haematological scoring system of neonates clinically suspicious of having sepsis and to corelate haematological score with C-Reactive protein and blood culture.

**Material-Methods:** 69 neonates suspected of neonatal sepsis in SHKBM hospital,Jhalawar medical college were included in the study over a period of 15 months from august 2022 to october 2023. For haematological scoring system,the sample was run in 6-part analyser(Sysmex) and peripheral blood smear was evaluated.Blood culture and qualitative assessment of C-Reactive protein by latex slide method was carried out.

**Results:** Out of 69 cases,47 cases were blood culture positive from which 40 were positive for C-Reactive protein also and among the blood culture negative samples,10 were C-reactive protein positive.Sensitivity and specificity for CRP are 85.10% and 54.54% respectively.

Haematological scoring system with a cut off score of ≥5 diagnosed 37 out of 47 culture positive cases which yielded a sensitivity of 78.7%, specificity of 100%, positive predictive value of 100% and negative predictive value of 64.70%.

**Conclusion:** Rodwell's haematological scoring system and C-Reactive protein prove to be effective tools for early diagnosis of neonatal sepsis and thus aid in reducing mortality and morbidity among neonates.

**Keywords:** Haematological scoring system, Neonatal sepsis, C-Reactive protein, Blood culture

Abstract ID: 14

# STUDY OF CYTO-HISTOPATHOLOGICAL CORRELATION OF THYROID LESIONS

Presenting Author: **SHYNA SACHDEVA**
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**Content**
**Aim-Background:** To corelate the pre-operative FNAC results as per the Bethesda system with subsequent histopathological findings as the gold standard.

**Material-Methods:** This retroprospective and prospective study of three years from october 2020 to october 2023 with total of 70 specimens was conducted in department of pathology of Jhalawar medical college.All the patients who came for fine needle aspiration of palpable thyroid swellings and then underwent surgical procedure were included in this study for microscopic evaluation.

**Results:** Out of 70 thyroid fine needle aspirations, benign interpretation was found in 56 cases(80%), follicular neoplasm in 6 cases(8.5%), suspicious for malignancy in 3 cases(4.28%) and malignancy in 5 cases(7.14%). The sensitivity,specificity,positive predictive value and negative predictive value are 77.7%, 98.3%, 87.5% and 96.7% respectively.

**Conclusion:** FNAC is a simple,reliable,cost effective and safe procedure that should be routinely done on patients with thyroid lesions as an outpatient procedure. As a screening modality, it has high sensitivity and specificity and is helpful in planning the future management of patients.

**Keywords:** FNAC-fine needle aspiration cytology, Thyroid, Bethesda system

Abstract ID: 15

# UTILITY OF FINE NEEDLE ASPIRATION CYTOLOGY IN EVALUATION OF LYMPHADENOPATHY

Presenting Author: **MANISH SHUKLA**
Co – Authors: **DR BRAJENDRA SHAKYAWAL (ASSOCIATE PROFESSOR)**
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**Content**
**Aim-Background:** To study incidence of various lymph node lesions on fine needle aspiration cytology and to analyze the utility and importance of FNAC in diagnosing lymph node lesions.

**Material-Methods:** A prospective study undertaken on 130 patients who had presented with lymph node enlargement at the department of pathology , Jhalawar medical college for a period of 6 months (august 2022 to january 2023).

**Results:** The most common site of FNAC was cervical lymph node and reactive lymphadenitis (36.92%) was the most common diagnosis on FNAC, followed by granulomatous lymphadenitis (18.5%). Tuberculous lymphadenitis has incidence of 13.88% , Acute suppurative lymphadenitis 13.1% , Metastatic malignancies 10% and lymphoma 7.6%.

**Conclusion:** FNAC is a quick and reliable tool to categorize the cause of lymphadenopathy and helps in avoiding the necessity of an incisional and trucut biopsy. In this study, reactive lymphadenitis was recorded as the most common presentation of lymphadenopathy.

**Keywords:** FNAC-fine needle aspiration cytology,Lymph node , reactive lymphadenitis .

Abstract ID: 20

# EVALUATION OF SERUM MALONDIALDEHYDE, SERUM TOTAL PROTEINS, AND SERUM URIC ACID LEVELS IN PATIENTS WITH PSORIASIS

Presenting Author: **VEERA ANUSHA V**
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Affiliation: THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

**Content**

**Aim-Background:** 1. To find the association of MDA levels, Total proteins, and albumin levels along with uric acid in development and severity of psoriasis.
2. To assess oxidative stress by estimating MDA levels

**Material-Methods:** The current observational study includes a total of 74 patients of age group 18-70 years which includes 37 cases and 37 controls. Serum Malondialdehyde level is measured using Thiobarbiturate assay method of Buege and Aust, Serum Total proteins by Biuret method, serum albumin by Bromocresol Green method, and serum uric acid by Uricase method.

**Results:** Serum Malondialdehyde and Uric acid levels were significantly higher in cases compared to controls. Serum Total proteins and albumin levels were significantly decreased in cases compared to the control group. There is also a strong positive correlation between serum MDA levels and serum uric acid levels between the study groups, where Pearson correlation coefficient p-value is <0.001 indicating high significance.

**Conclusion:** Elevated serum MDA and uric acid levels are due to oxidative stress. Decreased total protein levels and albumin levels may be due to diffuse scaling which is due to high cell turnover.

**Keywords:** Psoriasis, Malondialdehyde, Total proteins, Uric acid

## Abstract ID: 21

# Presentation Title: EVALUATION OF SERUM URIC ACID, ZINC, ALBUMIN AND HBA1C LEVELS IN PATIENTS WITH TYPE 2 DIABETES MELLITUS

Presenting Author: **J. MONISHA**
Co – Authors: **DR.K.V. LEELA**, PROFESSOR, DEPARTMENT OF BIOCHEMISTRY, ANDHRA MEDICAL COLLEGE, VISHAKAPATNAM
Affiliation: DR.YSR UNIVERSITY

**Content**
**Aim-Background**: To determine the role of biochemical markers in Type2 Diabetes Mellitus and predict its severity by estimating
1. Serum Uric acid
2. HbA1c
3. Serum Albumin
4. Zinc

**Material-Methods:** It is a hospital-based observational study.
A total of 100 patients between the age group of 40 and above years were selected.
Analysis of the following parameters on the Beckman automated clinical chemistry analyzer was done
a) Serum Uric acid levels by Uricase method
b) Serum Zinc by Nitro PAPS method
c) Serum Albumin by Bromocresol Green method
d) HbA1c by turbidimetric immunoinhibition method

**Results:** There is a significant change in the mean of serum uric acid, serum zinc, serum albumin, and HbA1c levels in patients with type 2 diabetes.
Conclusion: In this study significant change in parameters was observed, that there is an increase in oxidative stress which is depicted by an increase in serum uric acid levels and a decrease in serum zinc levels.
**Keywords:** Type 2 Diabetes Mellitus, Uric acid, Zinc, Albumin, HbA1c

## Abstract ID: 22

# Presentation Title: PROGNOSTIC SIGNIFICANCE OF SERUM MAGNESIUM IN ISCHEMIC STROKE

Co – Authors: **DR K. V. LEELA**, PROFESSOR, DEPARTMENT OF BIOCHEMISTRY, ANDHRA MEDICAL COLLEGE, VISAKHAPATNAM
Affiliation: DR Y.S.R UNIVERSITY OF HEALTH SCIENCES

**Content**
**Aim-Background:** 1.To measure Serum Magnesium
levels in acute ischemic stroke patients admitted in King George Hospital, Visakhapatnam.
2.To assess severity of stroke at admission by National Institute of Health Stroke scale (NIHSS) and functional outcome at discharge by Modified Rankin Scale (MRS).

**Material-Methods:** Type of study: Observational study
Source of the study: King George Hospital
Sample size: 84
Element studied: Magnesium
Methodology: Xylidyl blue method

**Results:** In this study, serum magnesium levels were associated with the MRS score with a p value of 0.04 which is statistically significant.

**Conclusion:** The study established a significant association between Serum magnesium and prognosis of acute ischemic stroke.

**Keywords:** Ischemic stroke, Magnesium, Modified Rankin Scale, National Institute of Health Stroke Scale.

## Abstract ID: 23

# Presentation Title: STUDY OF ENDOMETRIAL CHANGES IN UTERUS WITH LEIOMYOMA

Presenting Author: **DEEPAK KUMAR** DEWANDA
Co – Authors: **DR. SUMIT PRAKASH RATHORE**(HOD&PROFESSOR),
**DR. RISHI DIWAN** (SENIOR PROFESSOR),
**DR. AMIT SHARMA** (PG2ND YEAR)
Affiliation: JHALAWAR MEDICAL COLLEGE,JHALAWAR

**Content**

**Aim-Background:** To study the Endometrial changes in Leiomyoma of the uterus, and also to study the correlation of various parameters in hysterectomy specimens with Leiomyoma.

**Material-Methods:** The present study was combined retrospective and prospective study, conducted in the department of pathology, Jhalawar Medical College, Jhalawar, over a period of 22 months from 01/01/2022 to 31/10/2023.

**Results:** The most common Endometrial change in Leiomyoma of the uterus, was found to be the Proliferative Endometrium (43.96%). The most common age group was 41-50 years (54.95%). The most common clinical presentation was Abnormal Uterine Bleeding (64.41%). The most common site for the Leiomyoma was found to be Intramural location (86.49%), and mostly Single (62.61%), most lesions being less than 5 Centimetres (73.87%) in size.

**Conclusion:** Proliferative endometrium was the predominant endometrial change in leiomyoma of uterus and Leiomyomas are most commonly develope in perimenopausal women and causes profuse abnormal uterine bleeding in most of the patients. Hysterectomy is the most common procedure in the treatment and management of Leiomyoma of the uterus. Occasionally, few cases of endometrial hyperplasia may go unchecked. Hence histopathological study is a must for confirmed diagnosis and optimal treatment.

**Keywords:** Leiomyoma, Endometrium, Intramural, Subserosal, Submucosal, Hysterectomy

## Abstract ID: 25

# Presentation Title: A COMPARATIVE STUDY OF THE PARIS SYSTEM AND COMMON REPORTING FOR URINE CYTOLOGY WITH CYTO-HISTOLOGY CORRELATION: A STUDY OF 829 URINE CYTOLOGY SPECIMENS

Presenting Author: **ANJU KHAIRWA**
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**Content**
**Aim-Background:** The aim of the study is to assess the concordance between TPS and common reporting for urine cytology with the Cyto-histology Correlation

**Material-Methods:** It is a retrospective cross-sectional analytic study. Data were collected from July 2016 to December 2022 from the departmental archive.

**Results:** A total of 829 urine cytology samples were collected in six years. Histology correlation was available in 138 (16.6%) samples of 115 patients. TPS and Common reporting have a significant difference and 90% association for HGUC, 79.8% for AUC (atypia undetermined cells), 67.2% for SHGUC (Suspicious for HGUC), 57% for NHGUC (negative for HGUC) with moderate (C=both reporting 0.86) strength of association.
The diagnostic agreement was significant and 64% with (k-0.479) between TPS and common reporting with the kappa test. The agreement was 25.2% of TPS and 25.9% of Common reporting with corresponding histology. The agreement was significant (P= 0.0007 vs 0.00001) for both reporting systems and corresponding histology. The highest agreement of TPS was found for AUC (75%), followed by HGUC (31.8%), NHGUC (31.3%) and in Common reporting for AUC (50%) and HGUC (33.3%). The sensitivity (76% vs 85.3%, p= 0.0005), specificity (37.5%, 26.0%), PPV (28.6%, 27.4%) and NPV (83.0%, 84.4%) of TPS and Common reporting, respectively.

**Conclusion:** There is a very good and significant association/agreement between TPS and the Common reporting system for urine cytology. TPS was more specific and less sensitive than common reporting for urine cytology. We recommended TPS in routine reporting for standardization, uniformity, and increased specificity.

**Keywords:** TPS, Common reporting, Association, agreement, Sensitivity, specificity, Urine cytology

## Abstract ID: 27

# Presentation Title: ROLE OF PLATELET PARAMETERS AS BIOMARKERS IN PREECLAMPSIA & ECLAMPSIA

Presenting Author: **SHIPRA SINGH**
Co – Authors: **DR KALPANA SHARMA,** DR GEETA PACHORI
Affiliation: JAWAHARLAL NEHRU MEDICAL COLLEGE, AJMER, RAJASTHAN

**Content**
**Aim-Background:** To Evaluate the role of various platelet parameters as Biomarkers.
To study the relation of Platelet Parameters with the severity of preeclampsia and Eclampsia.

**Material-Methods:** The study was carried out in Department of pathology, JLN Medical College Ajmer and associated group of hospitals. Cases were pregnant females above 20weeks of gestation , suffering from preeclampsia and Eclampsia admitted to the OBGY wards.The samples were analysed by Sysmex XN 1000 automated bloodcell analyser. The data was compiled in Excel sheet and statistically analysed.

**Results:** A total of 100patients were analysed out of which 79 suffered from preeclampsia and 21 from Eclampsia. The severity of preeclampsia was highest in the age group 30-34 years. Decreased Platelet count and plateletcrit was observed in 20% and 31% of patients respectively. An increase in MPV was observed in 48% of patients.

**Conclusion:** The various platelet parameters can be served as a Biomarker in predicting the severity of preeclampsia and Eclampsia. They can be used as a screening test in the routine ANC clinics. It is a simple yet cost effective method to screen patients.

**Keywords:** Platelet parameters, Biomarkers, Platelet count, PCt, MPV, Preeclampsia, Eclampsia

## Abstract ID: 28

# Presentation Title: TO STUDY THE EFFECTIVENESS OF INTERNATIONAL CONSESUS GROUP FOR HEMATOLOGICAL REVIEW (ICGHR) CRITERIA FOR MANUAL PERIPHERAL SMEAR REVIEW

Presenting Author: **SHWETA KUMARI**
Co – Authors: **DR RISHI DIWAN** (SENIOR PROFESSOR)
Affiliation: JHALAWAR MEDICAL COLLEGE JHALAWAR

**Content**

**Aim-Background:** The objective of this study is to evaluate the efficacy of the ICGHR criteria and our laboratory criteria using the Sysmex XN-1000 for manual peripheral smear review (MSR).

**Material-Methods:** A total of 100 whole blood samples sent over a period of 6 months for complete blood count testing to our laboratory were collected using systematic random sampling. Truth tables were prepared for each set of criteria. Tests of proportion were used to compare performance specifications between both sets of criteria.

**Results:** Using ICGHR criteria, sensitivity was 76.41%, specificity was 79.78, 81% positive predictive value, and 75% negative predictive value. The microscopic smear review rate was 50% and efficiency was 78%.Using our laboratory criteria, sensitivity was 86.36%, specificity was 94.44%, positive predictive value of 95%,and negative predictive value of 85%. The microscopic smear review rate was 50% and efficiency 90%

**Conclusion:** There was a significant reduction in the microscopic smear review rates using the ICGHR criteria compared to our laboratory criteria. The ICGHR criteria can thus be adapted to daily laboratory practice provided they are first optimized and locally validated before use.

**Keywords:** Automated hematology analyzers, International Consensus Group for Hematology Review criteria (ICGHR), manual peripheral smear review

## Abstract ID: 31

# Presentation Title: MORPHOLOGICAL SPECTRUM OF ANAEMIAS IN GERIATRIC POPULATION AT JHALAWAR MEDICAL COLLEGE, JHALAWAR (RAJASTHAN)

Presenting Author: **AMIT SHARMA**
Co – Authors: **DR. SUMIT PRAKASH RATHORE** (HOD AND PROFESSOR),
**DR. DEEPAK KUMAR DEWANDA** (PG2ND YEAR).
Affiliation: JHALAWAR MEDICAL COLLEGE, JHALAWAR (RAJASTHAN)

**Content**
**Aim-Background:** To study the morphological spectrum of anemias in geriatric age group. To evaluate the incidence of different anaemias.

**Material-Methods:** This prospective study will be carried out in the Department of Pathology, Jhalawar Medical College, Jhalawar. The study will comprise of all geriatric patients of age group 60 years and above of either sex in OPD and IPD in our hospital from 1-May 2023 to 31-Oct 2023.

**Results:** Out of 880 cases, 568 (64.55%) patients were found to be anaemic. All types of anaemias are seen on peripheral blood smear and Normocytic normochromic 68.13% is the commonest among them.

**Conclusion:** Anaemia is a one of the commonest problems in geriatric age group and it directly affects the quality of life. Diagnosis of Morphological pattern of anaemia in geriatric age group helps in etiological diagnosis of anaemia which ultimately helps in the treatment.

**Keywords:** Morphology, prospective study, Anaemia, Geriatric age.

## Abstract ID: 32

# Presentation Title: RELATIONSHIP OF PRETERM LABOUR WITH MATERNAL SERUM MAGNESIUM AND ZINC LEVELS

Presenting Author: **SEERAM SAMEERA**
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Affiliation: DR. YSR UNIVERSITY OF HEALTH SCIENCES

**Content**

**Aim-Background:** To estimate and compare serum magnesium and serum zinc levels in Preterm and Term labour and evaluate their role as predictors of Preterm labour.

**Material-Methods:** It is a Comparative study . Study group includes 126 pregnant women , 63 who are in preterm labour and 63 who are in term labour. Analysis is done on Beckman coulter AU480 automated clinical biochemistry analyser. Zinc is estimated by Nitro PAPS method and Magnesium is estimated by Direct method with Xylidyl blue.

**Results:** The Serum Magnesium and Serum Zinc levels were significantly lower (p value < 0.05) in Preterm labour compared to Term labour.

**Conclusion:** Magnesium and Zinc levels can be used as predictors of preterm labour if regularly monitored from early pregnancy.

**Keywords:** Preterm labour , Zinc , Magnesium , predictor

## Abstract ID: 33

# Presentation Title: CYTOMORPHOLOGIC PANORAMA OF GIANT CELL TUMOUR OF TENDON SHEATH

Presenting Author: **PRIYA SUNEJA**
Co – Authors: **DR. PREETI DIWAKER**, **DR. KARISHMA RANJAN**
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**Content**

**Aim-Background:** To evaluate the cytomorphological spectrum of giant cell tumour of tendon sheath.

**Material-Methods:** This retrospective study includes a total of 56 cases of giant cell tumour of tendon sheath diagnosed over a period of 8 years. The clinical and radiological details of these cases were retrieved from the cytopathology records and detailed cytomorphological features were studied and analysed. Histopathological correlation was done in 16/56 cases, where follow-up was available.

**Results:** The mean age of patients at the time of presentation was 32 years and were predominantly females (68%). The most common site of giant cell tumour of tendon sheath was fingers (76%), followed by foot, wrist and toes. The most consistent finding on cytology was stromal cells (100%) of polygonal, spindle and plasmacytoid morphology with interspersed multinucleated osteoclastic giant cells (100%), followed by binucleated stromal cells (75%), xanthoma cells (61%) and hemosiderin laden macrophages (52%). Presence of proteinaceous fluid background was also observed in 50% of the cases.

**Conclusion:** Fine needle aspiration cytology plays a pivotal role in diagnosing giant cell tumour of tendon sheath with certainty, based on characteristic cytomorphological features in an appropriate clinical and radiological setting. It helps in differentiating giant cell tumour of tendon sheath from other giant cell rich lesions, thus obviating the need of tissue biopsy for diagnosis, which in turn helps the clinician in timely and adequate management of the patient.

**Keywords:** cytomorphology, fine needle aspiration cytology, giant cell tumour of tendon sheath

## Abstract ID: 34

# Presentation Title: CYTOMORPHOLOGICAL SPECTRUM OF BREAST LESIONS DIAGNOSED ON FINE-NEEDLE ASPIRATION CYTOLOGY IN A TERTIARY HEALTH CARE AND SUB-DISTRICT HOSPITAL IN GARHWAL REGION OF UTTARAKHAND.

Presenting Author: **RAJESH CHOUDHARY**
Co – Authors: **SHEELA CHAUDHARI**, GHAZALA RIZVI, SRIJAN SRIVASTAV.
Affiliation: VEER CHANDRA SINGH GARHWALI GMC.

**Content**

**Aim-Background:** To study cytomorphological pattern of breast lump diagnosed on FNAC in patients of tertiary health care centre and Sub-district hospital.
To segregate benign and malignant cases based on cytomorphological pattern of breast lump on FNAC using the "IAC Yokohama staging system."

**Material-Methods:** A total of 109 patients were included in this study from September2022 to August 2023. FNAC was performed. Smears were made and stained by Giemsa staining technique and reported following Yokohama System of breast cytology.

**Results:** The age range was 15-70 years. Cytological diagnosis included Unsatisfactory/Inadequate (C1-12.8%), benign breast disease (C2-67.88%), atypical/probably benign (C3-1.83%), suspicious for malignancy (C4-2.75%), malignant (C5-14.67%). Fibroadenoma and invasive ductal carcinoma were most common among benign and malignant lesions respectively.

**Conclusion:** FNAC is an easy and quick method to segregate malignant lesions from benign ones which helps in planning further management of a case. Hence, FNAC should be used as a routine diagnostic procedure due to its cost effectiveness and quick results, thus maximizing the availability of effective health care to patients.

**Keywords:** Breast lump, Yokohama, Breast Cytology, FNAC breast lesion

## Abstract ID: 35

# Presentation Title: THE HISTOPATHOLOGICAL SPECTRUM OF NON-INFECTIOUS BENIGN LESIONS OF SKIN AT TERTIARY HEALTH CARE HOSPITAL IN GARHWAL UTTARAKHAND.

Presenting Author: **SWATI SANGWAN**
Co – Authors: **DR SACHAN BHAT**
Affiliation: VCSGGIMS&R

**Content**

**Aim-Background:** The histopathological spectrum of Non-infectious benign lesions of skin at tertiary health care hospital in Garhwal Uttarakhand.

**Material-Methods:** A cross sectional study was conducted at Department of Pathology of VCSGGIMS&R Srinagar Garhwal of non-infectious benign skin lesions from August 2022 to September 2023.

**Results:** A total of 127 skin biopsies were reviewed. Out of 127 cases 83(65%) patients were female patients and 44(35%) male patients, showing female preponderance. The age ranges from 8 months to 84 years. Majority skin diseases were in the age group of 31 to 40 years old. Most common disorders of skin lesions observed were, disorder of pigmentation (35%) followed by papulosquamous lesions (28%) connective tissue disorders (16%), dermatitis and eczema (10%), urticaria and erythema (5%) and disorders of skin appendages. A few rare cases like Acrokeratoelastoidoses, Familial dyskeratotic comedons and Pseudoxanthoma elasticum were also seen.

**Conclusion:** A variety of benign skin lesions were seen in the present study with a wide age distribution range. Most common skin diseases observed in this study were the disorders of pigmentation, possibly due to Garhwal being a hilly area with increased exposure to UV radiations and most people are more involved in the outdoor activity.

**Keywords:** histopathological spectrum, skin biopsy, benign, non-infectious.

## Abstract ID: 36

# Presentation Title: HISTOMORPHOLOGICAL SPECTRUM OF GALLBLADDER LESIONS IN A TERTIARY HEALTH CARE HOSPITAL IN GARHWAL REGION OF UTTARAKHAND.

Presenting Author: **BARBIE MECH**
Co – Authors: **DEEPA HATWAL**, **PAWAN BHAT**, **SRIJAN SRIVASTAV**
Affiliation: VEER CHANDRA SINGH GARHWALI GMC.

**Content**
**Aim-Background:**
a) To identify the histomorphological spectrum of gallbladder lesions and their distribution.
b) To identify the most common histopathological lesion.
c) To find out the percentages of malignant cases in cholecystectomy specimens received in the department of Pathology, VCSGGMC, during the period of 1 year.

**Material-Methods:** A total of 250 cholecystectomy specimens were included in this study from September 2022 to August 2023. Tissues were received in 10% formalin, processed and slides were prepared and stained with haematoxylin & eosin (H&E). Reporting was done after examining the slides under microscope using various magnifications.

**Results:** The age range was 35 – 70 years. Gallbladder lesions were found to be more common in females as compared to males with M:F ratio of 1:4 and were more common in the 4th to 5th decade of life. Most common lesion was chronic cholecystitis with cholelithiasis (60%). Varied histopathological spectrum was seen comprising of chronic cholecystitis with cholesterolosis (20%), chronic cholecystitis with focal pyloric metaplasia (7%), xanthogranulomatous cholecystitis (5%) and adenomatous hyperplasia (4%). 4 out of 250 cases were diagnosed as adenocarcinoma.

**Conclusion:** The gallbladder is one of the most frequently resected organs. It presents with a wide spectrum of lesions. Most common cause for cholecystectomy is gallstones and they are capable of producing various histological changes in the gallbladder including inflammation, metaplasia, hyperplasia, dysplasia and even precursor lesions of malignancy. The carcinoma of the gallbladder is a rare but clinically silent disease, so meticulous examination of gallbladder lesions is important, for timely diagnosis and treatment.

**Keywords:** Gallbladder, Pathologies, Malignant, Cholecystectomy, Gallstone disease, Histopathology

## Abstract ID: 37

# Presentation Title: EVALUATION OF HEMATOGICAL PARAMETERS IN CHRONIC KIDNEY DISEASE PATIENTS UNDERGOING HAEMODIALYSIS

Presenting Author: **DEBANJAN DUTTA**
Co – Authors: **DR CHETNA JAIN** (SENIOR PROFESSOR),DEPT.OF PATHOLOGY JMC,JHALAWAR
Affiliation: JHALAWAR MEDICAL COLLEGE,JHALAWAR

**Content**
**Aim-Background:** To obtain the haematological abnormalities in Chronic Kidney Disease patients undergoing haemodialysis at Jhalawar Medical College

**Material-Methods:** This was a cross-sectional descriptive study conducted over a period of 1 year that describes complete blood count parameters, specifically red blood cell, white blood cell, and platelet indices interpreted based on local laboratory-established reference ranges. These are presented as mean and standard deviation (SD). Qualitative and quantitative interpretations of hematologic abnormalities are presented as proportions of affected Chronic Kidney Disease patients.

**Results:** The patients under this study ranged from ages 36-89.Total number of cases were 376,out of which 268 were male(71.28%) and 108 were female(28.72%).The mean total white blood cell count was 8.6±4.7 X10^9/l (Ref. 4.0 -10.0). The mean absolute neutrophil count was 6.5±4.6 X 10^9/l (Ref. 2.0-6.9), the mean lymphocytes count was 1.0 ±0.5 X 10^9/l (Ref. 0.6-3.4) and the mean platelets count was 290±140 X10^9/l (Ref. 150-450X10^9/l). The mean red blood cell count was 3.2±0.9 X 10^12/l (Ref. 4.5-5.5), the mean hemoglobin (HB) concentration was 8.4±2.2 g/dl (Ref. 12.2-18.2) and mean corpuscular volume (MCV) was 85.4 ±7.6 fl (Ref. 83 -101). Leukopenia <4.0X10^9/l was noted in 69(18.35%) while leukocytosis > 10.0X10^9/l was noted in 98(26.1%) of patients. Neutropenia of <2.0 X 10^9/l was noted in 12(3.1%), neutrophilia of >6.9 X 10^9/l was noted in 132(35.1%). Lymphopenia of <0.6 X10^9/l was in 70(18.6%), none of the patients had lymphocytosis. About 288(76.59%) patients had HB below 10g/dl. Ninety-one (24.2%) patients had MCV of <83fl while 18(4.78%) had MCV >101 fl.

**Conclusion:** Microcytic anemia is the most common hematological abnormality found and is most likely due to iron deficiency. Neutrophilia is identified in about one-third of patients, this is likely due to inflammatory/infectious etiology. Management of anemia and inflammatory disease related to neutrophilia may improve clinical outcomes among hemodialysis patients.

**Keywords:** Complete Blood Count,Hemodialysis,Chronic Kidney Disease,Anaemia

## Abstract ID: 38

# Presentation Title: STUDY OF CYTOMORPHOLOGICAL SPECTRUM OF THYROID LESION IN MIDDLE AGED WOMEN

Presenting Author: **RISHITA SAINI**
Co – Authors: **DR CHETNA JAIN** (SENIOR PROFESSOR)
Affiliation: DEPARTMENT OF PATHOLOGY, JHALAWAR MEDICAL COLLEGE, JHALAWAR

**Content**

**Aim-Background:** To evaluate the cytomorphological spectrum of palpable thyroid swellings by Fine Needle Aspiration Cytology technique in middle aged women.

**Material-Methods:** A one year prospective study from November 2022 to October 2023 with total number of 160 cases was conducted in Department of Pathology, Jhalawar Medical College, Rajasthan. The middle aged female patients who presented with palpable thyroid swellings were included in the study for Cytomorphological evaluation.

**Results:** Out of 160 thyroid Fine Needle Aspirations, benign interpretation was found in 138(86.25%) cases which included goitre and thyroiditis, 8(13.35%) cases of follicular neoplasm,7(4.37%) cases were suspicious of malignancy, 7( 4.37%) cases were malignant.

**Conclusion:** Fine Needle Aspiration Cytology (FNAC) is a simple, reliable, cost effective, less time consuming and safer procedure that can be routinely used for screening of the thyroid lesions in patients as an outpatient procedure. The interpretation is highly helpful for guiding the further followup and treatment of patient.

**Keywords:** Fine Needle Aspiration Cytology (FNAC), Thyroid, Benign, Malignant

## Abstract ID: 39

# Presentation Title: EVALUATION OF ACCURACY OF STATIC TELEPATHOLOGY IN DIAGNOSIS OF ENDOMETRIAL BIOPSIES

Presenting Author: **RADHIKA C SASTURKAR**
Co – Authors: **DR. PUSHPALATHA K**
Affiliation: ASSISTANT PROFESSOR

**Content**

**Aim-Background:** To investigate the feasibility of using static telepathology (mobile phone images) for primary diagnosis of Endometrial Biopsies.

**Material-Methods:** 100 endometrial biopsy samples were conventionally diagnosed by junior consultant pathologist. Then the microscopic images of the same samples were sent through mobile phone to an experienced pathologist for evaluation and diagnosed tele pathologically. The agreement between the two were compared and measured using Cohen's kappa coefficient.

**Results:** The overall concordance of diagnosis of the endometrial biopsy established on conventional microscopy by the junior pathologist compared to diagnosis by the experienced pathologists based on the mobile images was found to be 87%.

**Conclusion:** The good interobserver agreement suggested that static telepathology is sufficiently accurate for primary diagnosis. However, there can be discrepancies in diagnosis due to various factors such as images from onlu selected areas, Display and zooming qualities of the image etc.

**Keywords:** Static Telepathology, Endometrial Biopsy

Abstract ID: 40

# Presentation Title: ROLE OF USG/CT GUIDED FNAC IN DIAGNOSIS OF LUNG LESIONS

Presenting Author: **RAKSHA MEHRA**
Co – Authors: **DR SUDHA PANKAJ MEENA, DR VINNY GUPTA**
Affiliation: P. G. RESIDENT, DEPARTMENT OF PATHOLOGY, GMC KOTA

**Content**
**Aim-Background:**
1. To diagnose cytopathological spectrum of lung lesions by USG/CT guided Fine Needle Aspiration Cytology(FNAC).
2. To compare the results of USG/CT guided FNAC with radiological diagnosis.

**Material-Methods:** Patients of all age groups attending Government Medical College Kota in whom FNAC of lung lesions has been advised were the study subjects. Each case was subjected to a detailed history, thorough clinical examination, routine haemogram, prothrombin time, imaging(USG/CT) and guided FNAC.

**Results:** The study consisted of 58 patients in the age group of 41-80 years. There were 47 (81.03%) males and 11 (18.96%) females. Adequate samples were obtained in 54 cases. The most common cytological presentation was adenocarcinoma in 17 patients (31.48%) followed by squamous cell carcinoma in 15 cases (27.77%), small cell carcinoma in 05 cases (9.25%), poorly differentiated carcinoma in 03 cases(5.55%). There were 06 cases (11.11%) of lung abscess, 06 cases (11.11%) of granulomatous pathology and 01 case (1.85%) of fungal infection. 01 case (1.85%) was categorised as suspicious for malignancy due to low cell yield with presence of atypical cells. In our study the guided FNAC was found successful in making the diagnosis in 54 (93.10%) of 58 cases. Computed tomography diagnosed neoplastic etiology in 46 cases (79.31%) while 05 (8.62%) cases were diagnosed as infective etiology, 02 cases (3.44%) were of granulomatous etiology and 01 case (1.72%) was of metastatic lesion. There were 04 (6.89%) cases with ?inflammatory ?neoplastic etiology. There were radiological correlation in 45 (83.33%) out of 54 cytological reported cases. There were 02 cases, reported inflammatory and 03 cases reported as granulomatous on FNAC while these cases were reported neoplastic on radiological evaluation. There were 03 cases reported malignant on FNAC while diagnosed as ?inflammatory ?neoplastic etiology on computed tomography. There was one case of infective fungal infection on FNAC while diagnosed as ?fungal ball ?neoplastic etiology.

**Conclusion:** USG/ CT guided FNAC is of definite help in diagnosing intrathoracic lesions, whether malignant or inflammatory and enables subtyping of bronchogenic carcinoma in vast majority of cases so as to start particular treatment like chemotherapy or surgery immediately and avoid unnecessary treatment procedure.

**Keywords:** Fine Needle Aspiration Cytology, Lung lesions.

## Abstract ID: 43

# Presentation Title: METASTATIC TUMOR TO PANCREAS: A SERIES OF 18 CASES DIAGNOSED ON EUS FNA

Presenting Author: **KINJAL KOTAK**
Co – Authors:
Affiliation: STERLING ACCURIS DIAGNOSTICS, RAJKOT

**Content**

**Aim-Background:** To study the clinical features, imaging and EUS findings in metastatic tumors to pancreas. To analyse the spectrum, cytomorphology & type of tumor metastasizing to pancreas. To analyse the role of immunohistochemistry (IHC) in their diagnosis.

**Material-Methods:** Database from cytopathology lab of our institute over a period of 5 years (September 2018 to August 2023) was searched and a total of 18 cases of metastatic tumors to pancreas were identified. Adequate material was obtained by EUS-FNA using 22G needle. Relevant clinical history, past history, EUS findings, clinical impression and follow-up (if any) were recorded. May Grunwald Geimsa and Papanicolaou stained smears with cell blocks and immunohistochemical (IHC) stains wherever done were also analysed.

**Results:** A total of 18 cases with metastatic tumor to pancreas which constituted approximately 3% of all pancreatic FNA done in our institute. Average age was 53 years (range 13 to 76 years). 8/18 cases had a past history of primary tumor other than pancreas at the time of EUS-FNA Clinical impression of metastases after imaging was made in 6/18 cases (33%) EUS Findings: Most of the lesions were hypoechoic, well defined and single involving the head of pancreas Cytomorphology with cell block and IHC helped in the diagnosis of following entities:
Metastatic Renal Cell Carcinoma-5 cases
Metastatic Gastric Adenocarcinoma-2 cases
Metastatic mucinous adenocarcinoma ovarian origin-1 case
Metastatic Colonic adenocarcinoma-2 cases
Metastatic gall bladder adenocarcinoma-1 case
Non Hodgkin's Lymphoma-2 cases
Metastatic squamous cell carcinoma-2 cases
Metastatic pulmonary small cell carcinoma-1 case
Metastatic GIST-1 case
Metastatic plasmacytoma-1 case

**Conclusion:** Clinical and radiological findings alone cannot differentiate metastatic from primary pancreatic neoplasms. EUS-FNA plays an important role and provides adequate sample for cytodiagnosis. Any unusual cytomorphology of pancreatic tumors should alert us to the possibility of metastatic tumors. Cytomorphology in conjuction with cell block and appropriate IHC can help us identify the origin and type of tumor.

**Keywords:** Metastatic tumor to pancreas, EUS FNA

## Abstract ID: 49

# Presentation Title: MYSTERIES OF GASTRIC BIOPSY DECODED BY HISTOPATHOLOGY AND ENDOSCOPY.

Presenting Author: **PRAGNYA .P. PATIL**
Co – Authors: **DR. SUCHITA.V. DESHMUKH** - ASSOCIATE PROFESSOR
**DR.PRADNYA .CHIMANKAR** - SENIORRESIDENT
Affiliation: POST GRADUATE STUDENT -2ND YEAR

**Content**
**Aim-Background:** To study various histopathological lesions of GIT and to compare it with its Clinico-endoscopic findings

**Material-Methods:** In this study, 20 cases of gastric endoscopic biopsy were analysed, to study the various histopathological patterns of gastric lesions. The gastric biopsies were received and fixed in 10% formalin. After fixation for 4-10 hours, conventional tissue processing and embedding was done. 3–5-micron thick sections were taken and slides were prepared. Routine staining with Haematoxylin and eosin were done. Microscopic findings were studied in detail.
Results: Out of 20 gastric lesions, 18 cases were non-neoplastic ,2 cases were neoplastic. Chronic gastritis was the commonest non-neoplastic lesion and among the neoplastic lesions Adenocarcinoma was noted. Non neoplastic lesions were commonly seen in 30–50-year age group, whereas Neoplastic lesions were commonly seen in 60–80-year age group. On endoscopic visualization majority of lesion were diagnosed as gastritis , whereas detailed histomorphological findings revealed that they were chronic gastritis. Aiding in further management of patient.

**Conclusion:** Endoscopic biopsy examination followed by histologic assessment is a convenient procedure and current gold standard for accurate objective assessment of patients with symptoms of upper GIT.The incidence of non-neoplastic lesions is higher than neoplastic lesion. The most common non-neoplastic lesion is chronic non-specific gastritis and the most common neoplastic lesion is Adenocarcinoma of stomach.

**Keywords:** Gastrointestinal tract (GIT), Endoscopy, Histopathology, Chronic non-specific gastritis, Adenocarcinoma

## Abstract ID: 50

# Presentation Title: A CASE OF DIFFUSE MIDLINE GLIOMA H3 K27 ALTERED PRESENTING IN THE DORSAL SPINE OF A YOUNG ADULT

Presenting Author: **PRACHI**
Co – Authors: **DR.HEMA MALINI AIYER**, **DR. GAURAV SHARMA**, **DR. ASHISH KUMAR SHRIVASTAV**.
Affiliation: DHARAMSHILA NARAYANA SUPERSPECIALITY HOSPITAL, NEW DELHI

**Content**

**Aim-Background:** Diffuse midline glioma (DMG) H3K27-mutation is high grade gliomas, first recognized as a new entity in 2016 and renamed as Diffuse midline glioma, H3K27-altered in recent WHO 5th edition. DMGs in adolescents and adults arise unilaterally in the thalamus or the spinal cord as in the present case. Herein, we report this novel entity in a young 25 year old male at the D10-D12 intramedullary spinal location with eccentric radiological and pathological findings. DMG-H3K27 altered are considered CNS WHO Grade 4 tumours even in the absence of necrosis and microvascular proliferation and have a poor prognosis with 2 year survival rate of <10%.

**Material-Methods:** 25y old male, presented with insidious onset of paraparesis and weakness since 8 months, which progressed from the left leg to the right leg.MRI-DS revealed well-defined,intradural extramedullary spinal lesion at D10- D12 level measuring 0.7x1.2x6.0cm, which was isointense on T1, mildly hyperintense on T2 weighted images suggestive of myxopapillary ependymoma or paraganglioma, further planned for laminectomy. Microscopically, a tumor composed of scattered atypical glial cells in a fibrillary background permeating the neuroparenchyma with no evidence of necrosis, significant mitoses or definite microvascular proliferation. findings were suggestive of Glioma. Further on Immunohistochemistry, this tumor showed complete loss of H3K27me-3 with intact A

**Results:** Based on morphological and immunohistochemical findings, a diagnosis of Diffuse Midline Glioma, H3K27-altered - CNS WHO Grade 4 was rendered.TRX, Olig-2 with ki-67 labelling index of 20%.

**Conclusion:** H3K27altered DMG are uniformly fatal primary CNS tumors for which the biology is only beginning to be determined. Differences in location and prognosis between adults and children is not fully understood yet. The clinical features and imaging characteristics lacked specificity as in our case, hence it was challenging to reach a specific and definitive diagnosis

**Keywords:** H3K27-altered dorsal spinal glioma, young male, poor survival

## Abstract ID: 51

# Presentation Title: IMMUNOHISTOCHEMICAL CHARACTERISATION OF CELL OF ORIGIN IN DIFFUSE LARGE B- CELL LYMPHOMA AND ITS ASSOCIATION WITH THE DOUBLE EXPRESSOR PHENOTYPE: A RETROSPECTIVE STUDY

Presenting Author: **PRACHI**
Co – Authors: **DR.HEMA MALINI AIYER**, **DR. GAURAV SHARMA**, **DR. SARITA RANI JAISWAL**, **DR. SUPARNO CHAKRABORTY**
Affiliation: DHARAMSHILA NARAYANA SUPERSPECIALITY HOSPITAL, NEW DELHI

**Content**

**Aim-Background:** Diffuse Large B-cell Lymphoma (DLBCL) is the most common type of Non-Hodgkin Lymphoma (NHL) and is categorised into Germinal Centre B-cell(GCB) and Activated B-cell (ABC/ Non GCB) subtypes as per the Cell Of Origin (COO) model with the help of gene expression profiling/immunohistochemistry. The non GCB subtype are associated with the Double Expressor (DE)phenotype by IHC and this association was statistically significant.

**Material-Methods:** A retrospective study of 50 patients was carried out with the help of archival material filed in the Department of Anatomic Pathology at Dharamshila Narayana Superspeciality Hospital, New Delhi, India from 1st January 2019 to 30th June 2020.The study cohort was divided into two groups- group A with nodal presentation and group B with extranodal presentation. By using the Hans and Choi IHC algorithms, the cases were categorised into the GCB and non GCB subtypes in both the groups. Chi-square test and Yates correction were used for statistical analysis.

**Results:** The median age at presentation was 49 years (20-81 years) with a male to female ratio of 2.3:1 (35 males and 15 females). Group A with nodal disease included 28 patients and group B with extranodal disease included 22 patients. The DE phenotype was determined in each case by the co-expression of c-myc (>40%) and BCL-2 (>50%) by IHC. By using the statistical chi-square test analysis and Yates correction, the association of DE was found to be statistically significant with non GCB type lymphomas and non DE with GCB lymphomas with p-value- 0.0005 and 0.00168, respectively.

**Conclusion:** Due to the heterogeneity inherent in DLBCL, prediction of the DE phenotype and COO by IHC is a sensitive tool and helps in the prognostication and therapeutic triage of patients. Hence, in all cases diagnosed as DLBCL, a detailed morphological and IHC work up is mandatory to determine prognosis and tailor therapy.

**Keywords:** DLBCL, COO, Double expressor and Non- Double expressor

Abstract ID: 52

# CYTOLOGY REPORTING SYSTEM FOR LUNG CANCER: JAPAN LUNG CANCER SOCIETY AND THE JAPANESE SOCIETY OF CLINICAL CYTOLOGY(JLCS-JSCC)

Presenting Author: **AKANKSHA**
Co – Authors: **DR. SANJAY KUMAR( PROFESSOR)**, **DR SANT PRAKASH KATARIA** (PROFESSOR), **DR SUNITA SINGH** ( SR. PROFESSOR AND HEAD) DEPARTMENT OF PATHOLOGY, PT.B.D.SHARMA PGIMS, ROHTAK
Affiliation: JUNIOR RESIDENT , DEPARTMENT OF PATHOLOGY, PT. B.D. SHARMA PGIMS ROHTAK

**Content**
**Aim-Background:** To classify respiratory cytology specimens as per JLCS-JSCC reporting system
**Material-Methods:** A total of 110 cytology specimens(EBUS/TBNA/BAL) collected between January 2023 to November 2023 were included in the study. These cases were reviewed in conjunction with LBC, conventional and cell block preparation from each case

**Results:** Out of 110 samples, 75 were males and 35 were females. Seven samples were being excluded being inadequate. There were 103 adequate samples, 67 cases(65.0%) were negative for malignancy, 01 - atypical cells (1.0%), 35 cases (34%)- positive for malignancy. Among neoplastic lesions, majority were adenocarcinoma (42.9%) followed by squamous cell carcinoma (40.0%) and small cell carcinoma (17.1%).

**Conclusion:** This is relatively simple, reproducible and valuable reporting system for respiratory Cytology specimens. The JLCS-JSCC system is considered appropriate for clinica use, as it provides appropriate information concerning patient management.

**Keywords:** JLCS-JSCC reporting system , Cytology, LBC

# POSTER
# *Presentations*

## Abstract ID: 3

# Presentation Title: CYTOMORPHOLOGY OF ROUND CELL LESION

Presenting Author: **ARTI PATEL**
Co – Authors: **DR.MALA KANTHALI**
Affiliation:

**Content**
**Aim-Background:** To find out the morphology of soft tissue lesion on FNA smears

**Material-Methods:** The study was conducted in the department of pathology, R.D.Gardi medical college. FNA smear are prepared from aspirated material

**Results:** In this study, 20 patients were enrolled. out of 10 were show Round cell lesion in females than males followed by childrens.

**Conclusion:** The result of this study show any soft tissue lesion are difficult to diagnosed based on cytomorphology of FNA smears.

**Keywords:** Soft tissue lesions, FNAC, Cytomorphology, Round cell lesion

## Abstract ID: 10

# Presentation Title: SOLITARY PLASMACYTOMA OF STERNUM: - A RARE CASE

Presenting Author: **SNEHA SHUKLA**
Co – Authors: **DR. RASHMI NAYAK, DR. PUSHPA BATHAM**
Affiliation: DEPARTMENT OF PATHOLOGY NETAJI SUBHASH CHANDRA MEDICAL COLLEGE, JABALPUR

**Content**

**Aim-Background:**

- Solitary plasmacytomas (SPC) are rare neoplasms that globally accounts for only 4-5% of malignant plasma cell tumours.
- The median age of diagnosis is 55-60 years, the male to female ratio varies from 1.2:1 to 2:1 with a clear male preponderance.
- The true incidence of SPC in India still remains unravelled, as only a very limited number of cases have been reported.
- A systematic approach is required for the optimal diagnosis and management of such tumours. Because the increased risk of transformation of SPCs into disseminated diseases necessitates periodic surveillance.
- We report a rare case of Plasmacytoma of sternum in 53 years old female.

**Material-Methods:**

- A 53-year-old diabetic female came in the surgery OPD at N.S.C.B Medical College, Jabalpur, M.P. with the complaint of gradually increasing swelling over anterior upper chest wall since 2 years.
- On physical examination size of swelling measuring app. 12×12×8c.m., firm, hard and fixed, non-tender. Clinician suspected malignancy and advice following investigation CBC, RFT, PT/INR, Chest radiography, USG Chest and CT chest and FNAC of swelling.

**Results:**

- On FNAC, cytomorphological features are suggestive of plasmacytoma, we advise core needle biopsy for confirmation.
- On core needle biopsy "Atypical Plasma Cell seen in haemorrhagic which confirm our diagnosis."

**Conclusion:**

- FNAC is a simple, minimally invasive, out-patient, cost effective and highly sensitive in making in making almost accurate diagnosis.

**Keywords:** Solitary Plasmacytoma, FNAC, core needle biopsy.

## Abstract ID: 11

# Presentation Title: ANAPLASTIC CARCINOMA OF THYROID - A RARE CASE REPORT

Presenting Author: **SHRADDHA SAXENA**
Co – Authors: **DR.RASHMI NAYAK , DR. PUSHPA BATHAM**
Affiliation: DEPARTMENT OF PATHOLOGY NETAJI SUBHASH CHANDRA MEDICAL COLLEGE, JABALPUR

**Content**

**Aim-Background:**

- Anaplastic Thyroid Carcinoma is the rarest tumor of thyroid gland representing only 2% of clinically recognized thyroid cancer.
- It has a global annual incidence of 1-2 per million people. In India incidence is 5.4/lakhs.
- Anaplastic carcinoma affect 6-7th decade of life with a greater predisposition for female sex and average survival duration of patient with anaplastic thyroid carcinoma is 3-6 months.
- Mostly anaplastic carcinoma at the time of diagnosis are associated with progressive disease spread and distant metastases in 20-50% of cases and the most common metastatic sites are lungs followed by intrathorasic & neck lymph nodes.
- We reported a rare case of anaplastic carcinoma of thyroid in 70 years old female.

**Material-Methods:**

- A 70 years old female presented in the surgery OPD at Netaji Subhash Chandra Bose Medical College with complaint of anterior neck swelling since 30 years and suddenly develop difficult in swallowing since 1 month on physical examination swelling size measuring 3.5 x 3.5 cm. Firm to hard in consistency associated with pain & fever, moves with deglutination.
- Clinician made clinical diagnosis of multi nodular goiter and advised following investigation - CBC, Thyroid profile, Alkaline phosphates, PT INR, X-Ray Chest & Neck, USG Neck, CECT Neck & Thorax, FNAC.

**Results:**

- On FNAC cytological features was suggestive of anaplastic carcinoma of thyroid. We advice Biopsy for confirmation.
- On Core needle biopsy “Sheets of undifferentiated malignant cells” / Anaplastic feature seen.

**Conclusion:**

- FNAC is a simple, minimally invasive, out patient procedure with highly sensitivity in making early diagnosis for early treatment of patient.

**Keywords:** Anaplastic thyroid carcinoma, FNAC, Core Needle Biopsy

## Abstract ID: 16

# Presentation Title: FINE NEEDLE ASPIRATION CYTOLOGY IN DIAGNOSIS OF LYMPHOPROLIFERATIVE NEOPLASM IN FEMALE BREAST

Presenting Author: **SHARIB ANWAR**
Co – Authors: **DR RISHI DIWAN** (SENIOR PROFESSOR) , **DR CHETNA JAIN** (SENIOR PROFESSOR)
Affiliation: DEPARTMENT OF PATHOLOGY , JHALAWAR MEDICAL COLLEGE

**Content**
**Aim-Background:** To study the role of FNAC in diagnosis of lymphoproliferative neoplasm in female breast

**Material-Methods:** A prospective case study was done on 69 years old female patient presenting with swelling in left breast for a month. FNAC was done and cytological features studied.
Results: On FNAC the aspirate was blood mixed showing high cellularity. Smear shows lymphoid series cells(small lymphocytes, plasma cells, epitheloid cells , macrophages, centrocytes , centroblasts , immunoblasts) against necrotic background. Cytological smear is suggestive of lymphoproliferative neoplasm.

**Conclusion:** This is a case of lymphoproliferative neoplasm of breast diagnosed by FNAC emphasizing the importance of FNAC as a cost effective method and useful tool in diagnosing one of the rare condition in the breast.

**Keywords:** FNAC - Fine needle aspiration cytology , Breast , Lymphoproliferative neoplasm.

## Abstract ID: 17

# Presentation Title: GIANT ECCRINE SPIRADENOMA-A MIMICKER OF MALIGNANCY

Presenting Author: **CHANDRAKANTA MEENA**
Co – Authors: **DR RICHA SHARMA** (SENIOR PROFESSOR)
**DR CHETNA JAIN** (SENIOR PROFESSOR)
Affiliation: DEPARTMENT OF PATHOLOGY,JHALAWAR MEDICAL COLLEGE

**Content**
**Aim-Background:** To study histopathological features of giant eccrine spiradenoma and role of biopsy in its accurate diagnosis.

**Material-Methods:** A prospective study of a case of a 80 year old female who had a buttock swelling of 7.5x7x6 cm was studied. The swelling was resected out and its histopathology evaluation was done.

**Results:** With correlation of detailed clinical evaluation and investigations with biopsy findings,correct diagnosis can be achieved.It is necessary to differentiate eccrine spiradenoma from glomus tumor and cylindroma due to considerable overlap in histopathological features.

**Conclusion:** Although spiradenoma is a well differentiated benign dermal neoplasm of 0.5 to 2 cm with low recurrence rate but in this case patient presented with a large mass of 7.5 cm in which malignant transformation can occur.Thus, early and accurate diagnosis is important. Spiradenoma tends to be a part of Brooke-Spiegler Syndrome along with cylindroma. Histopathology confirm the diagnosis which will be strengthened by S-100. Degradation of beta catenin is down regulated in spiradenoma. Treatment of choice is complete surgical excision.

**Keywords:** Eccrine spiradenoma,Cords,Trabecular pattern,Brooke-spiegler syndrome

## Abstract ID: 18

# Presentation Title: FINE NEEDLE ASPIRATION CYTOLOGY OF PHYLLODES TUMOUR IN BREAST OF MALE PATIENT

Presenting Author: **PRAKASH CHAND DARIYA**
Co – Authors: **DR. CHETNA JAIN** (SENIOR PROFESSOR), DR.RICHA SHARMA ( SENIOR PROFESSOR).
Affiliation: DEPARTMENT OF PATHOLOGY, JHALAWAR MEDICAL COLLEGE

**Content**
**Aim-Background:** To study role of Fnac in diagnosis of Phyllodes tumour and discuss an unusual presentation of Phyllodes tumour in breast of male patients.

**Material-Methods:** Fine needle aspiration cytology is used in which air drying of smear followed by field staining is done for proper smear.

**Results:** Smear show high cellularity. Cells are plump spindle shaped with moderate nuclear enlargement at places. Background shows chondromyxoid stroma.

**Conclusion:** As smear shows high cellularity. Cells are plump spindle shaped with moderate nuclear enlargement at places differentiating it from fibroadenoma. Background is having chondromyxoid stroma. Cytologically smear is suggestive of Phyllodes tumour (low grade).

**Keywords:** Phyllodes, Stromal, Hypercellular.

## Abstract ID: 19

# Presentation Title: FINE NEEDLE ASPIRATION CYTOLOGY OF DUCTAL CELL CARCINOMA IN MALE BREAST - AN UNUSUAL PRESENTATION.

Presenting Author: **MALKA GULNAR NAHID**
Co – Authors: **DR. RISHI DIWAN** (SENIOR PROFESSOR), **DR. CHETNA JAIN** (SENIOR PROFESSOR).
Affiliation: DEPARTMENT OF PATHOLOGY, JHALAWAR MEDICAL COLLEGE.

**Content**
**Aim-Background:** To study an unusual presentation of Ductal Cell Carcinoma in male breast and role of FNAC in its diagnosis.

**Material-Methods:** A Prospective case study was done on 35 years old male breast patient presenting with swelling in right breast. FNAC was done and cytological features were studied.

**Results:** On FNAC the aspirate was blood mixed showing moderate cellular smear. Smear shows multiple tight clusters and dissociated cells with nuclear overlapping. Acinar pattern seen. Mild nuclear enlargement with thickened nuclear membrane and coarse clumped chromatin with single to multiple nucleoli are discernible and vacuolated cytoplasm is seen. Cytological smear suggestive of Ductal Cell Carcinoma.

**Conclusion:** This is a case of Ductal Cell Carcinoma in male breast patient diagnosed by FNAC. FNAC is a very sensitive and specific diagnostic modility to assess malignancy in breast masses and it is cost effective method too. It would greatly reduce the number of unnecessary biopsies and frozen section specially to rule out cases of gynecomastia. So it is recommended a first investigation to evaluate male breast lump.

**Keywords:** FNAC - Fine needle aspiration cytology, Ductal Cell Carcinoma, Male, Breast.

## Abstract ID: 24

# Presentation Title: FINE NEEDLE ASPIRATION CYTOLOGY OF ADENOCARCINOMA OF UNKNOWN PRIMARY PRESENTING AS METASTATIC MASS AT ELBOW - AN UNUSUAL PRESENTATION

Presenting Author: **RISHABH PATNI**
Co – Authors: **DR. RISHI DIWAN** (SR. PROFESSOR)
**DR. CHETNA JAIN** (SR. PROFESSOR)
Affiliation: DEPARTMENT OF PATHOLOGY, JHALAWAR MEDICAL COLLEGE

**Content**

**Aim-Background:** To study the role of FNAC in diagnosis of adenocarcinoma lesions in cytopathology

**Material-Methods:** A prospective case study was done on a 80 year old male patient presenting with left elbow diffuse swelling since one month . FNAC was done and cytological features were studied .

**Results:** On FNAC aspirate was blood mixed showing moderately cellular smear containing many clusters as well as singly scattered atypical cells showing moderate to severe polymorphism , increase N:C ratio , coarse chromatin , irregular nuclear membrane , at places cells showing vacuolation , eccentrically placed nucleus - Signet ring appearance which is suggestive of poorly differentiated malignant lesion - Metastatic adenocarcinoma .

**Conclusion:** This is a case of poorly differentiated malignant lesion probably metastatic adenocarcinoma. It is observed that FNAC is a simple, cost effective, safe and reliable tool in diagnosing adenocarcinoma lesions in cytopathology.

**Keywords:** Fine Needle Aspiration Cytology , Adenocarcinoma , Signet Ring , Metastasis

## Abstract ID: 26

# Presentation Title: MALIGNANT GRANULAR CELL TUMOUR OF FLOOR OF MOUTH (NON-NEURAL IN ORIGIN)- A RARE CASE REPORT AND REVIEW OF LITERATURE

Presenting Author: **ANJU KHAIRWA**
Co – Authors: **ANJU KHAIRWA**1, MD, PDCC; NADEEM TANVEER1, MD
1 DEPARTMENT OF PATHOLOGY, UNIVERSITY COLLEGE OF MEDICAL SCIENCES, NEW DELHI, INDIA.
Affiliation: DEPARTMENT OF PATHOLOGY,UNIVERSITY COLLEGE OF MEDICAL SCIENCE, DELHI

**Content**
**Aim-Background:** We are presenting a rare case of malignant GCT of non-neuronal origin on the floor of the mouth

**Material-Methods:** . Case Report: A 57-year-old male presented with ulcero-proliferative growth on the floor of the mouth for three years. A biopsy was taken and sent to the histopathology department.

**Results:** On microscopic examination revealed a few viable fragments showed a tumour arranged in solid sheets and focal short fascicles. The tumour cells are large polygonal with round to oval nuclei, vesicular nuclear chromatin, mild nuclear pleomorphism and prominent nucleoli with moderate to abundant amounts of fine granular cytoplasm. In addition, large areas of necrosis, a few atypical (0-4) /10 HPF mitosis and apoptotic bodies were also noted. On histomorphology, the diagnosis suggested a malignant granular cell tumour. On IHC examination, the tumour cells were positive for vimentin, NSE and CD10. The tumour cells were negative for S100 (figure 2d), P40, CK5/6, and Pan-CK. The diagnosis confirmed a malignant granular cell tumour of non-neuronal origin

**Conclusion:** To our knowledge, it is the first case of a malignant non-neuronal granular cell tumour.

**Keywords:** Non-neuronal granular cell tumour, Malignant, Oral cavity, S-100, IHC

## Abstract ID: 29

# Presentation Title: ALVEOLAR SOFT PART SARCOMA- A RARE CASE REPORT

Presenting Author: **ARCHITA TYAGI**
Co – Authors: **DR (PROF.) SEEMA GUPTA**
Affiliation: DEPARTMENT OF PATHOLOGY, JLN MEDICAL COLLEGE, AJMER

**Content**

**Aim-Background:** Alveolar soft part sarcoma (ASPS) is a rare sarcoma of uncertain histogenesis. It is Rare malignant mesenchymal neoplasm which Predominantly affects the deep soft tissues of the extremities (thigh and buttock) in young adults and head and neck region (tongue and orbit) in children. The peak age incidence is between 15 and 35 years. ASPS is a slow-growing, indolent tumor with metastases that may appear late in the lung, bone and brain.

**Material-Methods:** A 22year old boy was admitted with one-and-a-half-year history of gradually increasing right arm pain with a palpable mass on the right arm. Radical resection of the mass was performed and was sent for histopathological examination in pathology department. H & E-stained slide were studied.

**Results:** Histopathological examination shows large, round to polygonal cells with well-defined cell borders with little variation in individual tumor cell size. These cells have abundant eosinophilic granular cytoplasm with round, vesicular nucleus with a prominent nucleolus. Cells are arranged in organoid and nest-like growth pattern with central dyscohesive cells forming pseudoalveolar structure. Tumor lobules are separated by fibrous septa with abundant dilated blood vessels. At places cells show rhabdoid change. There is mild nuclear pleomorphism and occasional mitosis. Tumor invades the resected margins.

**Conclusion:** ASPS is one of the rarest soft tissue sarcomas. The mean age at diagnosis is about 22 years in females and 27 years in males, but the tumor can occur in children as young as 2-year-old. It tends to grow slowly and insidiously often with a long clinical history and a large mass at presentation. Surgical resection of ASPS primary and metastatic tumor remains the treatment of choice.

**Keywords:** Sarcoma, Mesenchymal neoplasm, Slow growing, Indolent

## Abstract ID: 30

# Presentation Title: NODULAR HIDRADENOMA OF BREAST - A BENIGN ADNEXAL TUMOR THAT MIMICKING BREAST CARCINOMA CLINICALLY.

Presenting Author: **RAMPRASAD DHAKAD**
Co – Authors: **DR RICHA SHARMA , DR RISHI DIWAN**
Affiliation: DEPARTMENT OF PATHOLOGY,JHALAWAR MEDICAL COLLEGE,JHALAWAR.

**Content**

**Aim-Background:** To Evaluate and illuminate the Histopathological Features of Nodular Hidradenoma occuring in breast tissue and to differentiate it from its clinical mimicker which include Breast Neoplasm.

**Material-Methods:** A Left Breast lump was excised under spinal anesthesia in 25 year old female and tissue mass sent for histopathological examination. The subsequent steps followed -

1. Tissue fixation by 10% neutral buffered formalin. 2.Gross examination.
2. Tissue processing comprising of dehydration by using
3. graded ethyl alcohol, clearing by xylene and embedding where tissue is surrounded by paraffin wax as embedding agent.
4. Tissue sectioning by Microtome.
5. Staining with Hematoxylin and Eosin for direct examination under microscope.

**Results:** Histopathologically multiple section examined reveal well circumscribed dermal growth with solid and cystic areas.The solid areas composed of multiple lobules of biphasic cells.one type polyhedral cells with vesicular nuclei, conspicuous nucleoli and eosinophilic cytoplasm. Other cells with clear cytoplasm and round eccentric nuclei.There are formation of ductal lumina filled with hyaline material lined by cuboidal cells.The tumor lobules are surrounded by fibrovascular hyalinized stroma.The large cystic area filled with amorphous eosinophilic material with cholesterol cleft. Overlying skin is unremarkable. Breast parenchymal tissue is not seen.

**Conclusion:** Nodular Hidradenoma is an uncommon skin adnexal tumor, arising from accrine or appocrine glands. In the present case carcinoma of the breast was suspected Clinically and FNAC couldn't give any clue regarding diagnosis of nodular hidradenoma and USG of left breast was suggestive of -Complex cystic left breast mass.
Nodular Hidradenoma is a rare entity in breast tissue.Nodular Hidradenoma should always be considered differential diagnosis of breast neoplasm in men and women, specially if the tumor show clear cell changes.
Hence a multidisciplinary approach is necessary to correctly diagnose this lesions for appropriate management.

**Keywords:** Nodular Hidradenoma, Adnexal Tumor, Carcinoma breast ,Cystic, Clear cell.

## Abstract ID: 41

# Presentation Title: TITLE: CONVENTION SMEARS OF PLEURAL EFFUSION CYTOLOGY REVEALING METASTATIC CANCER OF ENDOMETRIUM: A RARE CASE REPORT

Presenting Author: **PRIYA SUNEJA**
Co – Authors: **DR. ANJU KHAIRWA**, **DR. NADEEM TANVEER**
Affiliation: DEPARTMENT OF PATHOLOGY, UNIVERSITY COLLEGE OF MEDICAL SCIENCES AND GURU TEG BAHADUR HOSPITAL, DELHI UNIVERSITY, NEW DELHI, DELHI, INDIA

**Content**
**Aim-Background:** To highlight the importance of convention fluid cytology in diagnosing metastatic endometrial carcinoma.

**Material-Methods:** 60-year-old female presented with postmenopausal bleeding for past one year, along with loss of weight and appetite, and productive cough. Transvaginal ultrasonography revealed a solid-cystic growth in the uterine cavity measuring 5.6 x 5.3 cm, which was sampled and sent for histopathological examination. Chest x-ray and CT scan showed right sided moderate pleural effusion with subsegmental atelectasis without involvement of lung parenchyma. Pleural tap was done and sent for cytological examination.

**Results:** May-Grünwald-Giemsa and Papanicolaou stained smears showed three-dimensional and papillaroid clusters of malignant cells with high N:C ratio, hyperchromatic nucleus, prominent nucleoli and moderate to abundant clear to eosinophilic cytoplasm, few cells showed eccentrically placed nuclei and cytoplasmic vacuolations. Cytopathological features were positive for malignancy. Histopathological sections from endometrial sampling showed tumour cells arranged in solid, glandular and papillary pattern and displayed moderate pleomorphism, occasional cells showed hob nailing. Cells had moderate to abundant eosinophilic cytoplasm with few cells having clear cytoplasm. Histomorphology was suggestive of high grade endometrioid carcinoma with clear cell change. Final diagnosis of Metastatic endometrial carcinoma in pleural fluid was rendered on conventional fluid cytology - category V (Malignant cells seen) as per Indian Academy of Cytologists guidelines for reporting of serous effusion fluid samples. Due to distant metastasis, surgery was ruled out and instead, she was started on chemotherapy.

**Conclusion:** Conventional fluid cytology is a simple and efficient diagnostic modality that plays an imperative role in the work up of the serous cavity effusion fluids. Endometrial carcinoma with pleural metastases is quite uncommon and isolated cases without lung parenchymal involvement are even more uncommon, making our case a rare presentation of endometrial carcinoma.

**Keywords:** endometrial, carcinoma, pleural effusion, cytology

## Abstract ID: 42

# Presentation Title: PAPILLARY CARCINOMA THYROID (PTCA) MISSED ON FNAC

Presenting Author: **AJAY KUMAR KALWA**
Co – Authors: **DR BRAJENDRA SHAKYWAL**
Affiliation: 2ND YEAR PG RESIDENT

**Content**
**Aim-Background:** PTC is most common type of thyroid malignancy with a better prognosis. And FNAC is well accepted method for diagnosis PTC with an estimated accuracy of approximately 94%. However the sensitivity of FNAC diagnosis in cystic neoplasm may be as low as 40%.

**Material-Methods:** A case of 56 year old male left thyroid swelling. Abruptly increasing in size in 10-15 days following h/o trauma .

**Results:** FNAC smears form the thyroid swelling showing acute inflammatory cells consist of neutrophils, lymphocytes, macrophages in haemorrhagic background. We received a gross specimen on cut section make an imprint which is showing a sheet of tumour cells with focal nuclear crowding with several cells displaying nuclear grooves. On histological examination the sections shows papillae with fibrovascular cores and enlarged nuclei with nuclear clearing, several cells shows nuclear grooving and psammoma bodies also seen.

**Conclusion:** FNAC of thyroid swilling was miss-diagnosed as Acute Inflammatory Lesion with haemorrhage because the needle durning aspiration can not reach up to papillary projection and blood aspirate from cystic area. We received a gross specimen.By Imprint and Histological Examination diagnosis of Papillary Thyroid Carcinoma was confirmed

**Keywords:** FNAC, Imprint Cytology, Histopathology

## Abstract ID: 44

# Presentation Title: AN INCIDENTAL FINDING OF PAPILLARY THYROID CARCINOMA IN A THYROGLOSSAL CYST

Presenting Author: **SONAXI JAIN**
Co – Authors: **DR. KAVITA JAIN** (ASSOCIATE PROFESSOR)
**DR. MANJU PUROHIT** (HOD)
Affiliation: HISTOPATHOLOGY

**Content**
**Aim-Background:** Thyroglossal duct cyst the most frequent benign congenital lesion of the neck. Papillary carcinoma originating from a thyroglossal cyst represent an infrequent finding, which occur in ~1% of cases of thyroglossal cyst and its presentation is same as that of benign cyst.

**Material-Methods:** 18 year old female came with complaint of suprasternal swelling. She felts swelling since 2 month which gradually increase in size. the diagnosis of thyroglossal cyst was made by the physical examination and findings of cervical ultrasound and computed axial tomography. FNAC advised which was suggestive of ?thyroglossal cyst. Excision of cyst was done.

**Results:** Histopathological finding were suggestive of papillary carcinoma.
Conclusion: Thyroglossal duct cyst-associated with carcinoma is usually not suspected preoperatively. The management of these cases continues to be controversial due to the limited number of reported cases, so multidisciplinary management and individualization of each case play a fundamental role in the management of these rare cases. The prognosis for patients with papillary cancer associated with thyroglossal duct cyst is excellent.

**Keywords:** Thyroglossal duct cyst, papillary thyroid carcinoma

## Abstract ID: 46

# Presentation Title: CONCURRENT CANNIBALISM AND HEMOPHAGOCYTOSIS IN A REFRACTORY ACUTE MEGAKARYOBLASTIC LEUKEMIA WITH T(7;16) (P15;P13.1) - A CASE REPORT

Presenting Author: **APEKSHA BHAT**
Co – Authors: ANAB SAYYADA1, RACHIT KHANDELWAL2, SWASTIKA PADMAPATI1, UDAYAKUMAR DS1, RITU CHADHA1, BHAWNA JHA1, SHALINI GOEL1, AKSHAY GORE1, RISHAB PANDEY1, DHWANEE THAKUR2, NEHA RASTOGI2, SATYA PRAKASH YADAV2, RENU SAXENA1. 1DEPARTMENT OF PATHOLOGY AND LAB MEDICI
Affiliation: DEPARTMENT OF PATHOLOGY AND LAB MEDICINE, MEDANTA-THE MEDICITY, GURUGRAM, HARYANA.

**Content**
**Aim-Background:** Acute Megakaryoblastic leukemia (AML-M7) constitutes less than 5% of all cases of acute myeloid leukemia (AML).

**Material-Methods:** We describe a 12-month-old child presenting with fever. Peripheral blood smear (PS) and bone marrow examination (BM) was done for morphology. Flow cytometric immunophenotyping (FCI) was performed with a panel of antibodies in a 10-colour BD FACS lyric flow cytometer and analysed using BD FACSsuite software. Karyotyping studies using GTG banding was done. Molecular studies were performed using RT PCR for AML related recurrent genetic abnormalities.

**Results:** A 12 month old male child presented with fever and bicytopenia. PS showed moderate anaemia, severe thrombocytopenia and 4% blasts. BM aspirate smears were replaced by blasts with cytoplasmic blebs, forming clusters mimicking a non-hematopoietic malignancy and in addition showed cannibalism of other blasts. Many histiocytes showing hemophagocytosis of erythroblasts and occasional neutrophil were seen.
Bone marrow FCI was consistent with AML-M7 with CD117, CD34, CD56, cytoplasmic CD41a expression and negative for HLADR, cytoplasmic MPO and monocytic markers. Karyotyping showed a clone of 46, XY, t(7;16)(p15;p13.1), del(18)(q11.2q12/2). Molecular testing was negative common AML related abnormalities.
After 3+7 induction chemotherapy, bone marrow was not in remission with 46% blasts. The patient was treated with FLAG chemotherapy. Post FLAG cycle the disease persisted and unfortunately with additional challenges due to febrile neutropenia and candida sepsis the child succumbed to the disease.
Although hemophagocytosis is well recognized in AML-M4/M5 with t(8;16)(p11;p13) and anecdotal reports of cannibalism in AML-M7 with t(10;17)(p15;q22) exists, this is a unique case of cannibalism and overt hemophagocytosis occurring together in a case of AML-M7 with t(7;16).

**Conclusion:** The presented case offers valuable insights into the complexities of AML-M7 with concurrent hemophagocytosis and cannibalism in pediatric patients and a new cytogenetic abnormality associated with such presentation.

**Keywords:** Cannibalism, hemophagocytosis, Megakaryoblastic, AML-M7

## Abstract ID: 47

# Presentation Title: DERMATOPATHIC LYMPHADENITIS - WATCH OUT FOR PIGMENT IN LYMPH NODES

Presenting Author: **NIKETA SHARMA**
Co – Authors: **DR VANISHA DHAKA**, **DR SEEMA PURI**
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**Content**

**Aim-Background:** Pigments are commonly encountered in lymph nodes. However, a pathologist must know if the pigment is of diagnostic significance and validate separate diagnosis. Dermatopathic Lymphadenitis (DL) is a rare benign lymphadenitis commonly encountered in chronic dermatologic disorders and is characterised by presence of melanin pigment in sinusoidal histiocytes and macrophages.

**Material-Methods:** A 63 year old immunocompetent female presented with chief complaint of lower back pain radiating to bilateral lower limbs, difficulty in walking and weight loss (10 Kgs) since 1.5 months. Whole body CT showed bilateral cervical, axillary, external iliac and inguinal lymphadenopathy likely of tubercular/infective etiology. Left inguinal lymph node measuring 2.3x2.0x1.0 cm with grey brown cut surface was received. On microscopic examination, the lymph node showed show follicular hyperplasia with expansion of paracortical areas containing phagocytic histiocytes and langhans cell. Most of these paracortical histiocytes containing cytoplasmic brownish-black pigment. No granulomas were seen. No areas of hemorrhage were noted in the sections examined. Perl's stain was negative. Based on the histological picture, the patient was re-examined to rule out chronic dermatological condition. The examination revealed presence of rashes with itchy, raised, silvery-white scaly patches on the trunk, elbow and lower limbs.

**Results:** Thus, considering the clinical correlation, it was concluded to diagnose it as Dermatopathic Lymphadenitis.

**Conclusion:** Dermatopathic Lymphadenitis is a rare entity seen in patients in chronic dermatological condition. Thus, a pathologist needs to be aware of the diagnostic significance of the pigments seen in the lymph nodes while gross and microscopic examination.

**Keywords:** Dermatopathic Lymphadenitis, Pigment, Lymph nodes

## Abstract ID: 48

# Presentation Title: CUP-LIKE BLASTS IN A KMT2A REARRANGED B- ACUTE LYMPHOBLASTIC LEUKAEMIA

Presenting Author: **ANAB SAYYADA**
Co – Authors: RITU CHADHA, APEKSHA BHAT, SWASTIKA PADMAPATI, VRINDA SHARMA, AKSHAY GORE, NITIN MATHUR, UDAYAKUMAR DS, MANISHA JAIN, NITIN SOOD, RENU SAXENA
Affiliation: DEPARTMENT OF PATHOLOGY AND LAB MEDICINE, MEDANTA-THE MEDICITY, GURUGRAM, HARYANA.

**Content**
**Aim-Background:** Blasts with cup-like morphology are well described in acute myeloid leukaemia (AML) with a normal karyotype and mutated NPM1 and/or FLT3-ITD showing monocytic differentiation. We aim to describe a unique case of cup-shaped blasts in a case of B lineage acute lymphoblastic leukaemia (B-ALL).

**Material-Methods:** We describe a 33-year-old female presenting with fever and menorrhagia. Peripheral blood smear (PS) and bone marrow examination (BM) was done for morphology. Flow cytometric immunophenotyping (FCI) was performed with a panel of antibodies in a 10-colour BD FACS lyric flow cytometer and analysed using BD FACSsuite software. Karyotyping and FISH studies were performed using IKZK1 deletion and KMT2A break-apart probe. Molecular studies were performed using RT PCR to detect NPM1 and FLT3-ITD.

**Results:** Our patient presented with fever and menorrhagia. CBC showed moderate anaemia (Hb-9.8 g/dl), leucocytosis (TLC-55,870/ l) and severe thrombocytopenia. PS showed 80% blasts, with several showing cup-shaped nuclei. BM aspirate and biopsy showed near-total replacement with such blasts. Bone marrow FCI was consistent with CALLA Negative B-ALL with aberrant CD15 expression and negative for CD20 and monocytic markers. FISH studies revealed KMT2a rearrangement. Karyogram confirmed a t(4;11)(q21;q23) with additional abnormalities.

**Conclusion:** Blasts with a cup-shaped nucleus prompt a pathologist to look for NPM1 with or without FLT3-ITD mutation. However, only some reports in the literature and our unique case show their rare association with KMT2a rearranged B-ALL. Since this morphology is strongly associated with monocytic leukaemias, FCI is pivotal in ruling out AML and mixed phenotype acute leukaemia – B/myeloid

**Keywords:** cup-shaped nucleus, KMT2a rearranged, CALLA negative B-ALL

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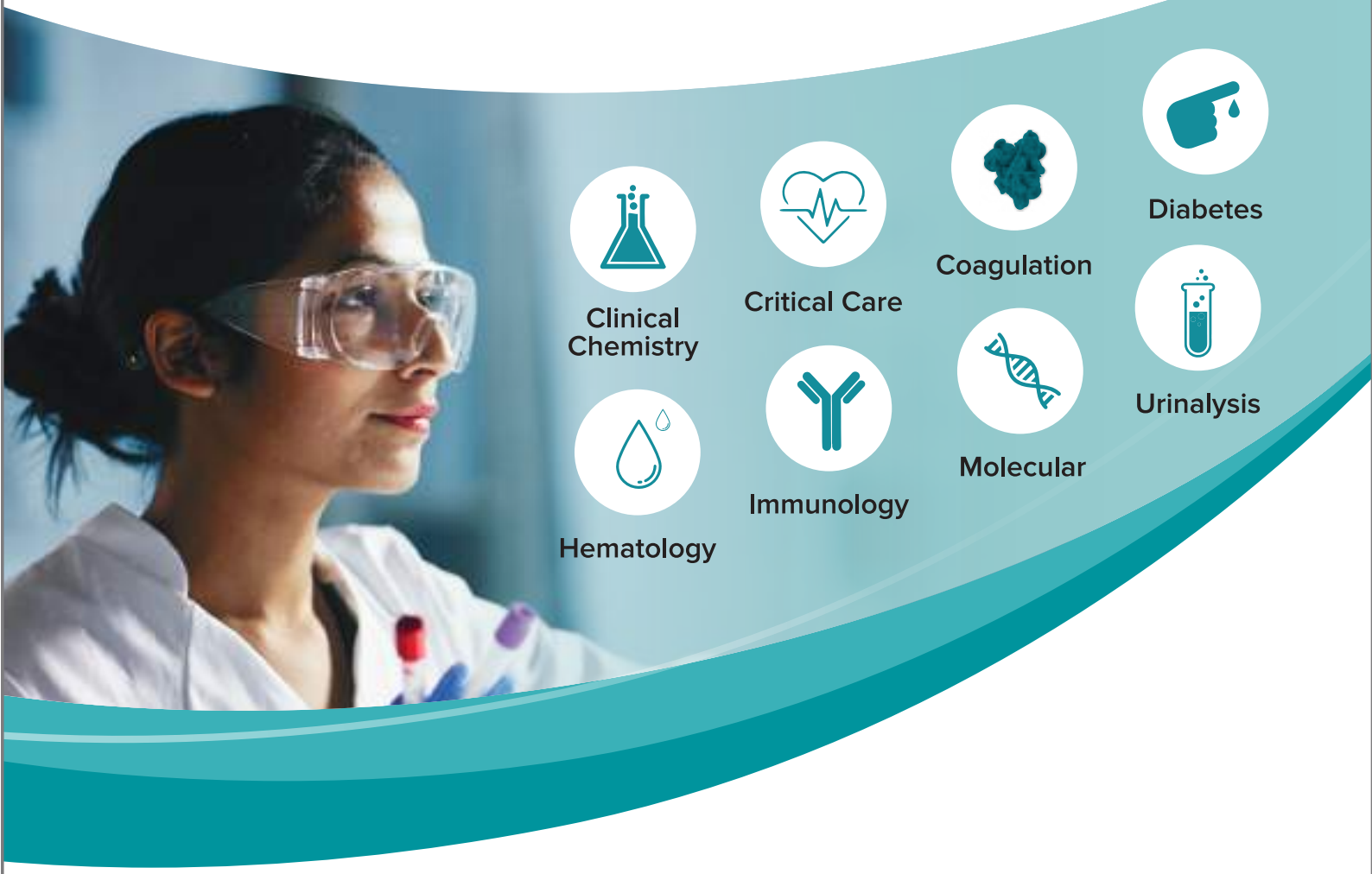


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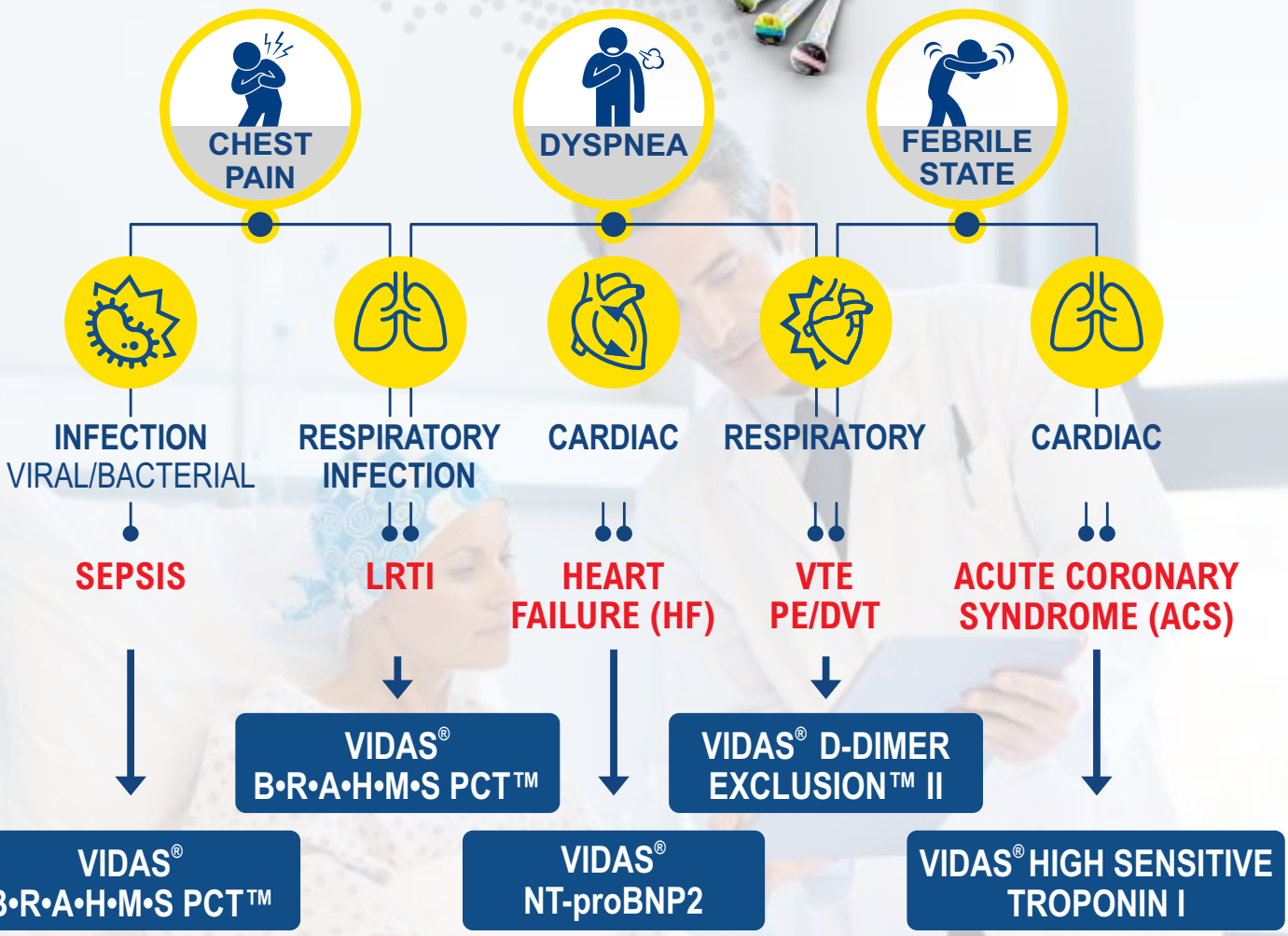


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1 HOUR

**5 MINUTES**
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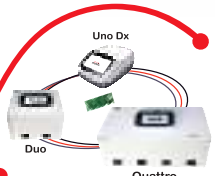


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Truelab® Real Time micro PCR analyzer

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*- WHO consolidated guidelines on tuberculosis, 2021*

## ONE PLATFORM - MULTIPLE DISEASES

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- HBV with VL
- HCV with VL
- HEV
- HIV-1 with EID+VL
- HIV-1/HIV-2
- H1N1
- H3N2/H1N1
- Chlamydia
- Gonorrhea
- Chlamydia/Gonorrhea
- Trichomonas
- Dengue
- Chikungunya
- Dengue/Chikungunya
- Malaria Pf
- Malaria Pv/Pf
- Salmonella
- Leptospira
- Rabies
- HLA-B27
- HPV-HR
- Nipah
- GBS
- Influenza A/B
- Beta CoV
- COVID-19
- SARS CoV-2
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- Shigella
- Clostridium difficile
- HSV (1/2)
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**7000+** INSTALLATIONS

**40M+** TESTS SUPPLIED

**20M+** TB TESTS SUPPLIED

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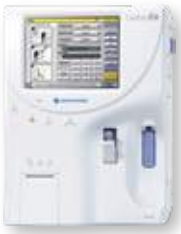

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