



A-JMRHS

PROCEEDINGS OF THE HEMATOLOGY WORKSHOP AND CME HELD AT HIMALAYAN INSTITUTE OF MEDICAL SCIENCES, DEHRADUN, UTTARAKHAND, INDIA, AUGUST 2024

Dr. Mansi Kala^{1*}, Dr. Smita Chandra²

^{1*}Professor, & Organizing Secretary, Department Of Pathology, Himalayan Institute Of Medical Sciences, Swami Rama Himalayan University, Dehradun.

²Professor And Head & Organizing Chairperson, Department Of Pathology, Himalayan Institute Of Medical Sciences, Swami Rama Himalayan University, Dehradun.

Corresponding Author: Dr. Mansi Kala

Professor, & Organizing Secretary, Department Of Pathology, Himalayan Institute Of Medical Sciences, Swami Rama Himalayan University, Dehradun.

ABSTRACT

Recent advances in hematology have significantly improved the diagnosis and management of coagulation disorders, hematologic malignancies, and abnormal bleeding conditions. A comprehensive coagulation workshop and Continuing Medical Education (CME) program held at the Himalayan Institute of Medical Sciences, Swami Rama Himalayan University, Dehradun, on 10–11 August 2024, brought together experts and participants from across Uttarakhand to discuss contemporary developments in coagulation diagnostics, flow cytometry, hematology analyzers, and personalized therapeutic approaches. The workshop emphasized practical training in coagulation assays, mixing studies, inhibitor screening, and global hemostasis testing. The CME sessions focused on hypercoagulability, lymphoma diagnosis using flow cytometry, management of abnormal bleeding, and modern hematology diagnostics. Important advances in flow cytometric evaluation of B-cell and T-cell lymphomas, anticoagulation strategies, and automated laboratory technologies were highlighted. The event provided a platform for knowledge exchange, skill development, and discussion of innovative diagnostic and therapeutic strategies aimed at improving patient outcomes in hematologic disorders.

Keywords: Hematology, Coagulation Diagnostics, Flow Cytometry, Non-Hodgkin Lymphoma, Hemostasis, Hematology Analyzers.

INTRODUCTION

Hematology has undergone rapid transformation with the introduction of advanced diagnostic technologies, molecular techniques, and personalized therapeutic approaches. Accurate diagnosis and timely management of coagulation disorders and hematologic malignancies require a combination of laboratory expertise, clinical correlation, and technological advancements.^{1,2} Workshops and CME programs serve as important academic platforms for disseminating updated knowledge and practical skills among clinicians, pathologists, and laboratory professionals.

A comprehensive coagulation workshop followed by a hematology-focused CME was organized at the Himalayan Institute of Medical Sciences, Swami Rama Himalayan University, Dehradun, Uttarakhand, on 10–11 August 2024.

The academic event was led by experts from premier medical institutions including Christian Medical College (CMC) Vellore, AIIMS Gorakhpur, AIIMS Rishikesh, Tata Memorial Hospital Mumbai, Sir Ganga Ram Hospital New Delhi, and Max Super Speciality Hospital New Delhi. The program aimed to provide updated insights into coagulation diagnostics, bleeding disorders, flow cytometry, lymphoma diagnosis, and advances in hematology laboratory practices.

DISCUSSION

Coagulation Diagnostics and Hemostasis Testing

The workshop commenced with discussions on the coagulation cascade and recent advancements in coagulation science. A systematic approach toward evaluating patients presenting with bleeding manifestations was emphasized, including assessment of clinical history, laboratory parameters, and underlying etiologies.³ Practical sessions focused on essential coagulation screening tests such as Prothrombin Time (PT), Activated Partial Thromboplastin Time (APTT), and Specific Bleeding Time (SBT). Participants received hands-on training in performing and interpreting these assays, with special emphasis on reagent



www.ajmrhs.com
eISSN: 2583-7761

Date of Received: 20-04-2026
Date Acceptance: 28-04-2026
Date of Publication: 30-05-2026

selection, quality control, and patient-related variables influencing results.⁴

Advanced sessions highlighted the significance of mixing studies in differentiating coagulation factor deficiencies from circulating inhibitors. Inhibitor screening methods, including Bethesda assays for Hemophilia A patients, were also discussed.⁴ Participants practiced factor assays and inhibitor screening under expert supervision, strengthening their practical understanding of coagulation laboratory techniques.

Global hemostasis testing methods including thromboelastography (TEG), rotational thromboelastometry (ROTEM), thrombin generation assays, and clot waveform analysis were presented as emerging tools providing comprehensive evaluation of coagulation dynamics.⁵ These modalities offer valuable insights into bleeding and thrombotic disorders and are increasingly important in critical care and perioperative settings.

Hypercoagulability and Personalized Anticoagulation

The CME sessions addressed the growing challenge of hypercoagulability, particularly at high altitudes. Increased hemoglobin concentration, platelet activation, and elevated plasminogen activator inhibitor-1 (PAI-1) levels were identified as contributors to thrombosis risk among individuals exposed to high-altitude environments.⁶

The importance of individualized anticoagulation therapy was emphasized, as standardized treatment protocols may not adequately prevent thrombosis or bleeding in all patients. D-dimer testing was discussed as an important biomarker in determining the duration of anticoagulation therapy, especially in cases of unprovoked venous thromboembolism. The role of thrombophilia testing and the necessity for comprehensive diagnostic panels in disorders such as antiphospholipid syndrome were also highlighted.⁶

Flow Cytometry in Lymphoma Diagnosis

One of the major highlights of the CME was the detailed discussion on flow cytometry in the diagnosis of lymphoid malignancies. Flow cytometry has become an indispensable diagnostic modality due to its rapidity, sensitivity, and ability to characterize abnormal cell populations.⁷

The preparation of single-cell suspensions from blood, bone marrow, cerebrospinal fluid, pleural fluid, bronchoalveolar lavage, and solid tissue specimens was explained in detail. Proper sample stabilization using anticoagulants such as EDTA and

heparin was emphasized to maintain cellular integrity and ensure accurate immunophenotypic analysis.⁷

A systematic diagnostic algorithm for B-cell Non-Hodgkin Lymphoma (NHL) was discussed using markers such as CD19, CD45, CD200, CD20, CD10, CD38, and CD81. Distinct immunophenotypic patterns helped differentiate conditions including chronic lymphocytic leukemia, mantle cell lymphoma, follicular lymphoma, and Burkitt lymphoma.⁸

Similarly, the evaluation of T-cell and NK-cell lymphomas using markers such as CD3, TCR gamma delta, CD2, CD5, CD7, CD16, CD56, HLADR, and CD94 was elaborated. The use of TRBC1 as a marker of T-cell clonality represented an important advancement in identifying neoplastic T-cell populations.⁸ These discussions demonstrated the critical role of flow cytometry in the accurate classification of hematologic malignancies.

Abnormal Bleeding and Hematology Analyzers

The management of abnormal bleeding was discussed from a pathophysiological perspective, focusing on understanding why, where, how, and when bleeding occurs. The role of endothelial activation, platelet interaction, and hematocrit levels in influencing hemostasis and thrombosis was emphasized.⁴

Modern hematology analyzers were presented as transformative tools in laboratory hematology. Advanced analyzer-generated parameters, histograms, scatter plots, fluorescence measurements, and conductivity data can provide valuable diagnostic insights while reducing dependence on conventional peripheral smear examination.⁹ These technologies improve diagnostic accuracy and facilitate better understanding of disease processes.

Automated Urine Analysis and Research Presentations

The comparison between automated urine analyzers and conventional manual microscopy for detecting dysmorphic red blood cells was also discussed. Automated systems were recognized for their efficiency and standardization, while manual examination remained valuable in specific clinical contexts.²

Concurrent oral and poster presentations enabled researchers and participants to present their scientific work, encouraging academic interaction, collaborative discussion, and exchange of innovative ideas in hematology research.

CONCLUSION

The coagulation workshop and hematology CME conducted at the Himalayan Institute of Medical Sciences provided a comprehensive overview of recent advances in coagulation diagnostics, flow cytometry, hematology analyzers, and personalized management strategies for hematologic disorders. The program successfully integrated theoretical knowledge with practical training, enabling participants to enhance their diagnostic and clinical skills. The discussions highlighted the growing importance of advanced diagnostic modalities such as global hemostasis testing and flow cytometry in improving the accuracy of diagnosis and patient management. Emphasis on personalized anticoagulation therapy, modern hematology analyzers, and innovative laboratory technologies reflected the evolving landscape of hematology practice. Overall, the academic event contributed significantly to professional development and promoted the adoption of advanced diagnostic and therapeutic approaches aimed at improving outcomes in patients with coagulation disorders, hematologic malignancies, and other blood-related conditions.

REFERENCES

1. Hoffbrand AV, Higgs DR, Keeling DM, Mehta AB. *Postgraduate Hematology*. 8th ed. Wiley-Blackwell; 2019.
2. McPherson RA, Pincus MR. *Henry's Clinical Diagnosis and Management by Laboratory Methods*. 24th ed. Elsevier; 2021.
3. Bain BJ. *Blood Cells: A Practical Guide*. 6th ed. Wiley-Blackwell; 2021.
4. Kitchens CS, Kessler CM, Konkle BA. *Consultative Hemostasis and Thrombosis*. 4th ed. Elsevier; 2019.
5. Favaloro EJ, Lippi G. Recent advances in coagulation testing and hemostasis diagnostics. *Semin Thromb Hemost*. 2019;45(3):228–246.
6. Kitchens CS. Thrombophilia and hypercoagulable states: clinical and laboratory assessment. *Hematol Oncol Clin North Am*. 2018;32(3):457–474.
7. Tembhare PR, Subramanian PG, Ghogale S, et al. Flow cytometric approach in the diagnosis and classification of lymphomas. *Indian J Hematol Blood Transfus*. 2020;36(2):193–205.
8. Arber DA, Orazi A, Hasserjian R, et al. The 2022 WHO classification of hematolymphoid tumors: myeloid and lymphoid neoplasms. *Blood*. 2022;140(11):1200–1228.
9. Kottke-Marchant K, Davis B. *Laboratory Hematology Practice*. Wiley-Blackwell; 2012.

How to cite this article: Dr. Mansi Kala, Dr. Smita Chandra, PROCEEDINGS OF THE HEMATOLOGY WORKSHOP AND CME HELD AT HIMALAYAN INSTITUTE OF MEDICAL SCIENCES, DEHRADUN, UTTARAKHAND, INDIA, AUGUST 2024, Asian J. Med. Res. Health Sci., 2026; 4 (2):593-595.

Source of Support: Nil, Conflicts of Interest: None declared.