



Centre for Biosystems Science and Engineering

Seminar

Beyond The Routine – Exploring The Potential of Haematology Analysers in Evaluating Blood Cellular Morphology

on

16th January 2017,
4:00 PM, MCB Seminar Hall, 2nd Floor, Biological Sciences Building.

by

Dr. Sukesh C Nair and Dr. Joy Mammen

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The Department of Transfusion Medicine at CMC Vellore provides basic and advanced diagnostic support in the domain of laboratory haematology, haemostasis, immunogenetics and immunohaematology. Automation has been an essential part of their growth in order to address analytic quality, workload, and workflow related issues in terms of ensuring timely, quality assured results to clinicians that assist in the management of patients.

Haematology analysers are modified particle analysers that help to categorise and characterise the various cellular components such as erythrocytes, leukocytes and platelet besides providing an estimation of the concentration of haemoglobin. The impedance principle (Coulter principle) forms the basis of most cell counters for enumeration of cellular elements. Beyond this, other technologies such as laser, radio frequency direct current, special stains and immuno-staining methods have been utilised by different platforms to analyse and classify the cellular contents. The application of digital imaging has been introduced by a few vendors and is yet to penetrate and make a significant impact in the market.

In these talks, the speakers will attempt to explain the currently available methods for analysis of blood cells, and see how they have maximised their potential by utilising parameters obtained in the process of cellular analysis to identify and validate markers in adult and paediatric sepsis and dengue hemorrhagic fever, both of which pose problems in diagnostic medicine today.

About the speakers

Dr. Sukesh C Nair DCP, MD, FRCPA Professor

Sukesh Nair graduated from Trivandrum, and did his post graduate studies in CMC Vellore following which he completed his haematology fellowship with the Royal College of Australia. He is in CMC Vellore since 1991 and is involved in standardisation and introduction of numerous laboratory tests towards characterising bleeding, thrombotic, haemolytic and haematological (morphology based) disorders; some being innovative towards cost reduction. His current focus is on extrapolating the morphological dimensions to routine cell counters to utilise their cell population data and histograms to characterise many diagnostic algorithms coining the term "haemocyto-morphometry".

Dr. Joy Mammen MD, Professor & Head of the Department

Joy Mammen completed his undergraduate and postgraduate studies from CMC Vellore where he currently works in the Department of Transfusion Medicine. He has done a fellowship in Pathology Informatics in the USA. His areas of interest are lab automation, proficiency testing and applications of information systems in the medical field.