

# Clinical flow cytometry in 2019

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## ARTICLE INFO

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**Key words:**

flow cytometry, PNH, preanalytical flow  
cytometry, monocytes immunophenotype,  
primary immunodeficiencies  
immunophenotyped, immunology  
flow cytometry

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## EDITORIAL

Flow cytometry is a relatively new scientific field and many of the people who contributed to its evolution are still active all over the world. Flow Cytometry has evolved into an important diagnostic and research tool in several areas of medicine and biology. The flow Cytometry laboratory therefore is a part of the Hematology or Immunology departments in the hospital and a core laboratory in a research institute.

We are envisioning clinical laboratories with new pre-analytical instruments (most of them of large volume), small modern compact cytometers of 15+ colors, a small number of technicians preparing samples and acquiring events, modern “R” software uploaded on computers for the analysis. The dry reagent-tubes are kept in room temperature cupboards and the rest of the monoclonal antibodies in the preanalytical machines. The colors are not the “old friends” well known organic dyes. New not spilling bright dyes are replacing them.

The samples, peripheral blood, bone marrow and lots of biological fluids, cerebrospinal fluid, ascites, pleural effusions, are derived from hematological patients or cases receiving new “precision individualized immunological drugs” in large quantities.

The results are “flowing” quickly to the GDPR checked recipients and the files of the patients are packed with valuable information, while new software produces exact diagnosis from the patient’s data.

Parts of this “brave new world” are presented in this issue of the eJIFCC, which is dedicated to flow cytometry. Practical advice about the diagnosis of Paroxysmal Nocturnal Hemoglobinuria (PNH), where flow cytometry constitutes the golden standard method is presented by experts in the field (B. Brando et al). Primary immunodeficiency diagnosis, where flow cytometry plays a pivotal role through the study of all the immune cells immunophenotype and function is presented in two papers by experienced researchers (U. Saltzer et al and J. Wolf et al).

Flow cytometry is one of the first diagnostic tools concerning childhood acute lymphoblastic leukemia and the importance of the evaluation of sample quality is paramount (E. Szánthó et al). DNA analysis by flow, an old application of flow cytometry with completely new perspective is presented in the review about flow cytometry in breast cancer by the team, who renewed the interest in perioperative use of flow (M. Andreou et al). Finally two more papers on the importance of flow in Immunology, a study of monocytes polarization in sepsis (M. Greco et al) and a review of a summer school in Flow Cytometry for Immunology, showing the diversity of immunology topics’ spectrum covered by flow cytometry (K. Psarra et al) complete this special thematic edition of the eJIFCC.