Eurocytology - Immunocytochemistry

Objectives:

- Present the current landscape of immunocytochemistry in Europe
- Discuss application of QA/QC measures for reliable ICC
- Describe parameters to assess quality of ICC on cytology slides
- Practice quality assessment of ICC on a selected cases

Introduction

Immunocytochemistry (ICC) has become an indispensable ancillary method in a modern cytopathology for fine-tuning a diagnosis as well as for assessing prognostic and predictive markers. As shown by survey performed by European Federation of Cytology Societies (EFCS), ICC is extensively used in European cytology laboratories on a differently prepared and fixed cytology slides (1). Formalin-fixed paraffin-embedded (FFPE) cell blocks are regarded the optimal choice for ICC from QA/QC perspective, however low cellular cell blocks with insufficient cells are the main issue in a daily cytology practice as shown by the survey performed among European (data not published yet) and USA laboratories (2). Other cytology slides are therefore vital to perform ICC on a limited and low cellular cytology samples. The basic requirements to assure reliable ICC results on non-FFPE cytology preparations are control slides prepared as the patient sample as well as optimization and validation of ICC protocols.

Principles, basic steps, quality assurance and quality control (QA/QC) measures as well as platforms, reagents and antibodies used for ICC on cytology slides are the same as for immunohistochemistry (IHC) on a standardly prepared formalin-fixed paraffin-embedded (FFPE) tissue and are described in several articles (3-9). In this chapter, special consideration of ICC on cytology samples will be presented.

Chapters

- State of the Art and Science of Immunocytochemistry – webinar originally presented for International Society for IHC and Molecular Morphology (ISIMM) on Wednesday, March 8, 2023 and link to the article published in Acta Cytologica
- Assessing quality of ICC on a cytology slides
- Control slides
- Optimization and validation of ICC

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