

Nasal cytology: a point-of-care testing for Precision Medicine in clinical practice

Giancaspro R.¹, Plantone F.², Cassano M.¹, Gelardi M.¹

Affiliation

1. Department of Otolaryngology, University of Foggia, Foggia, Italy

2. Department of Otorhinolaryngology, Di Venere Hospital, ASL BA, Bari, Italy.

Corresponding author: Rossana Giancaspro, MD, Department of Otolaryngology, University of Foggia, Via Luigi Pinto 1, 71122, Foggia, Italy. Telephone number: +39 3293389107. Email address: rogianca@live.it

Video Abstract

In the last decade, nasal cytology (NC) has become an integral part of the diagnostic-therapeutic pathway of the rhino-allergologic patients¹. As a matter of fact, NC is a cheap, repeatable and non-invasive diagnostic tool, which allows to evaluate nasal immunophlogosis and to monitor the effectiveness of therapeutic strategies over time². The procedure consists in sample processing, staining, and microscope reading. In particular, samples are obtained from the middle third portion of the inferior turbinate, under anterior rhinoscopy, and immediately smeared on a glass slide. After air-drying, samples can be stained with May-Grunwald-Giemsa (MGG) or with MGG Quick Stain®, which is a quick stain kit that has been on the market for a few years³. The dyes present in the solutions of the latter kit are the same ones used in the formulation of traditional MGG staining. Nevertheless, the rapidity of the staining process, which lasts 20 seconds, is due to the different degree of dissociation of the active chemical species which make their absorption rapid on the cellular structures. Stained samples are then read at optical microscopy, with a 1000x objective with oil immersion. A minimum of fifty fields is considered necessary to identify a sufficient number of cells⁴. The proposed video aims to illustrate step-by-step the phases of the diagnostic procedure, paying particular attention to the description of the rapid staining method, and to show the photomicrographic images of the most common conditions detectable by nasal cytology.

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