

TORAKS 2018

8. Kongres Hrvatskog
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8th Congress of Croatian
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PROCESSING OF CYTOLOGICAL SAMPLES OF PATIENTS WITH NSCLC

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Objective: The standard malignant cytological samples are analysed by May Grünwald Giemsa (MGG) staining and immunocytochemistry (ICC) if necessary. Screening of cytological slides and morphological analysis of cells are performed by a light microscope under 200x, 400x and 1000x magnification. To provide diagnostic results for molecular targeted therapy the MGG slides with the minimum of 30% cells and/or more than 200 cells of non small cell lung cancer (NSCLC) classified (with or without ICC) as adenocarcinoma and not otherwise specified (NSCLC-NOS) are sent to EGFR testing to remote molecular laboratory. After EGFR negative report unstained cytological slides are further ALK tested by ICC. By introducing immunotherapy in 2018 the unstained cytological slides of EGFR and ALK negative NSCLC including classified as planocellular carcinoma (with or without ICC) and NSCLC-NOS are tested for PD-L1 and ROS1 also by ICC. For the purpose of standard morphological analysis and ICC it is necessary to obtain numerous cytological slides with sufficient number of malignant cells. MGG slides are stored at room temperature to preserve DNA for molecular testing. Unstained malignant slides for ICC are stored by deep freezing at -20°C or -86°C to preserve morphology of the cells. Residual parts of malignant cytological samples are prepared as cell blocks and stored at room temperature for the purpose of further ICC. In our cytology division turnaround time for the majority of samples is 1-3 days for a standard cytology analysis, 1-6 days for ICC and 3-8 days for referral to molecular testing, that is in recommended intervals. Turnaround time depends on the type of the sample and two delivery days per week designated for referral to molecular testing. To keep turnaround time in recommended intervals it is also necessary to provide properly written laboratory referrals for each analysis separately.

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