MedicalXpress

Researchers use immunocytochemistry to determine ALK status

July 1 2013

Personalized medicine in lung cancer relies on the identification and characterization of cancer biomarkers and the availability of accurate detection systems and therapies for those biomarkers. The standard procedure for detection of predictive anaplastic lymphoma kinase (ALK)-rearrangements is fluorescence in situ hybridization (FISH), but FISH is both expensive and often challenging to interpret. Lung cancer is often diagnosed by cytology necessitating predictive molecular marker analyses on cytological specimens.

Now research published in the August issue of the *Journal of Thoracic Oncology* (*JTO*), says ALK immunocytochemistry is highly accurate for detecting ALK-rearranged non-small cell lung cancer (NSCLC) on cytological specimens.

Researchers retrospectively analyzed 41 specimens with available ALK FISH results with the 5A4 monoclonal antibody on a fully automated slide stained. The study population was enriched for consecutive ALK FISH-positive NSCLCs. Eighteen consecutive ALK FISH-negative NSCLCs with EGFR and KRAS wild-type were included as negative controls. Because ALK rearrangements are practically mutually exclusive to other known driver mutations, nine consecutive NSCLCs with EGFR mutations were also analyzed by ALK FISH and included as negative controls. The sensitivity, specificity and positive and negative predictive values for ALK immunocytochemistry compared to ALK FISH were 93.3 percent, 96 percent, 93.3 percent and 96 percent, respectively.

The researchers conclude that, cytological NSCLC specimens are well suited for ALK rearrangement testing. ALK ICC with the 5A4 mAb is feasible and highly accurate for the detection of ALK-rearranged NSCLC on conventional cytological specimens and cellblock preparations and can be used for prescreening NSCLCs.

Provided by International Association for the Study of Lung Cancer