

An Audit on the use of Immuno-histochemistry for the Diagnosis and Classification of Non-Small Cell Lung Carcinoma

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Immunohistochemistry (IHC) is only required for classification of non-small cell lung cancer (NSCLC) into adenocarcinoma or squamous cell carcinoma if there is no or unclear morphological evidence of either, or if there is a question regarding the primary site.

The Royal College of Pathologists dataset guidance (2016) suggests that a morphological diagnosis should be reached in 50-60% of cases. The Dataset also states that immunohistochemistry should consist of a maximum panel of four stains (CK7, TTF-1, CK5/6 and p63).

This audit assessed the use of immunohistochemistry in a combined total of 69 lung and bronchial biopsies, showing non small cell lung cancer, received between January and December 2015 at a District General Hospital. Results showed a total of 32 adenocarcinomas and 30 squamous cell carcinomas of which there were 14 (44%) and 9 (30%) morphologically diagnosed cases respectively.

Immunohistochemistry was performed on the remaining cases but was incorrectly used on 5 morphologically described adenocarcinomas and 2 morphologically described squamous cell carcinomas. In addition, only 15 of the cases correctly used the staining panel suggested by the Royal College of Pathologists dataset. The others utilised additional non-necessary cytokeratin markers e.g. CK8/18, whilst others used markers to assist in determining primary site origin.

In conclusion, these findings suggest that the use of immunohistochemistry needs to be re-assessed in the department to prevent the routine excess staining of biopsy specimens, the over-use of laboratory resources and the unnecessary loss of tissue, which is crucial for molecular testing.