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Lung alert

Clinical biomarkers in resectable NSCLC

In the last decade there have been small but real advances in the understanding and management of non-small cell lung cancer (NSCLC), with targeted treatments being a key innovation.

Hypoxia-induced upregulated tissue expression of carbonic anhydrase IX (CAIX) and elevated plasma CAIX levels are associated with more aggressive phenotypes in urological cancers. In this study, resected specimens of 555 patients with NSCLC were analysed by immunohistochemistry for CAIX and 209 preoperative plasma samples by ELISA for CAIX, with median follow-up of 35 months. 24.3% of the tissue specimens expressed high levels of CAIX and were associated with shorter overall survival in stage I and II, as was a plasma CAIX level >11 pg/ml. Tissue CAIX was underexpressed in adenocarcinoma subtypes.

This study shows that in resected early stage NSCLC, high tissue CAIX can serve as an independent predictor for shorter survival, as can plasma CAIX ELISA with 84% sensitivity and 95% specificity. Though targeted treatments directed specifically at CAIX are under development, this study also demonstrates a potential non-invasive clinical biomarker of early stage NSCLC, representing another of the technologies being developed involving proteome analysis of pretreatment peripheral blood in real time to help define the optimal therapeutic approach.

► **Ilie M**, Mazure NM, Hofman V, *et al.* High levels of carbonic anhydrase IX in tumour tissue and plasma are biomarkers of poor prognostic in patients with non-small cell lung cancer (NSCLC). *Br J Cancer* 2010;**102**:1627–35.

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