Deletion predicts survival in advanced non-small cell lung cancer

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Bcl-2-like protein 11 (BIM) deletion in advanced non-small cell lung cancer (NSCLC) is associated with shorter progression free survival (PFS) in epidermal growth factor receptor (EGFR) tyrosine kinase inhibitor (TKI) or chemotherapy treated Asian patients. Also, BIM deletion independently predicts overall survival (OS) of advanced NSCLC patients.

The BIM protein can activate the programmed cell death also known as the apoptotic pathway in cells. BIM deletion has been detected in 12.8% of the Asian population but is very rarely observed in the Caucasian population. All NSCLC patients treated with any therapy, targeted or chemotherapeutic, ultimately fail their therapy but at varying times.

Researchers at the National Taiwan University Hospital examined the impact of BIM deletion on the survival outcomes of 204 advanced NSCLC patients treated with either EGFR TKIs or chemotherapy.

Results reported in the September issue of the *Journal of Thoracic Oncology*, the official journal of the International Association for the Study of Lung Cancer (IASLC), showed that BIM deletion was an independent predictive factor for shorter PFS in EGFR TKI treated patients (hazard ratio=2.15, p=0.002) with median PFS of 4.6 months in BIM deletion versus 8.6 months in wild type patients. Similar results were observed in chemotherapy treated patients with a hazard ratio of 2.4 (p=0.016) and median PFS of 3.5 and 5.6 months in deletion versus wild type, respectively. Overall survival was also independently

predicted by BIM deletion (hazard ratio=1.65, p=0.039)

Dr. James Chih-Hsin Yang, senior author and member of IASLC, notes "our findings suggest the BIM deletion polymorphism should be considered as a clinical trial stratification factor when systemic treatment is considered in Asian NSCLC patients". Dr. Yang also says "since little is known about whether anti-apoptotic agents are able to overcome the resistance to EGFR TKIs resulting from BIM deletion, it may be warranted to explore anti-apoptotic agents, such as obatoclax, in future clinical trials".

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