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Translational Immuno therapeutics for lung and breast cancer

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In an effort to identify molecular markers of tumor aggressiveness and therapeutic targets in lung adenocarcinoma (ADC) and Triple-negative breast cancer (TNBC), we investigated the expression of mesothelin (MSLN), as well as its biologic and clinical relevance. In a training and validation set of patients with early-stage (I-III) lung ADC (n = 1,209), a tissue microarray consisting of tumors and normal lung tissue was used to examine the association between MSLN expression and recurrence-free survival (RFS) and overall survival (OS). MSLN was expressed in 69% of lung ADC tumors, with one in five patients strongly expressing MSLN and no expression in normal lung tissue. Increased MSLN expression was associated with reduced OS [HR = 1.78; CI, 1.26-2.50; P < 0.01] and RFS (HR = 1.67; 95% CI, 1.21-2.27; P < 0.01) in multivariate analyses, even after adjustment for currently known markers of tumor aggressiveness in lung ADC: male sex, smoking history, increasing stage, morphologic pattern, visceral pleural invasion, lymphatic or vascular invasion, and mutation status. In TNBC, 36% of patients express MSLN associated with early recurrence, higher metastases and decreased survival. We further developed MSLN-targeted T-cell therapy in preclinical models and are now in the process of initiating clinical trial for patients with metastatic lung and breast cancer.

Biography

Prasad S Adusumilli has completed his M.B.B.S. at the age of 22 years from Guntur Medical College and postdoctoral studies from AIIMS, New Delhi, Southampton University, UK and from Memorial Sloan Kettering Cancer Center (MSKCC) and University of Pittsburgh, USA. He is now the Deputy Chief of Thoracic Surgery at the MSKCC and Member in Center for Cell Engineering at MSKCC. He has published more than 100 papers in reputed journals including JCO and JNCI. He is invited to be the Deputy Chief Editor for Molecular Therapy Oncolytics Journal (Nature Group Publication) serves as an editorial board member of PLOSOne.

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