

Clonal Evaluation of Malignant Mesothelioma

Authors : Sabahattin Comertpay, Sandra Pastorino, Rosanna Mezzapelle, Mika Tanji, Oriana Strianese, Andrea Napolitano, Tracey Weigel, Joseph Friedberg, Paul Sugarbaker, Thomas Krausz, Ena Wang, Amy Powers, Giovanni Gaudino, Harvey I. Pass, Fatmagul Ozcelik, Barbara L. Parsons, Haining Yang, Michele Carbone

Abstract : Tumors are thought to be monoclonal in origin. This paradigm arose decades ago, primarily from the study of hematopoietic malignancies and sarcomas. The clonal origin of malignant mesothelioma (MM), a deadly cancer resistant to the current therapies, has not been investigated. Examination of the pleura from patients with MM shows often the presence of multiple pleural nodules, raising the question of whether they represent independent or metastatic growth processes. To investigate the clonality patterns of MM, we used the HUMARA (Human Androgen Receptor) assay to examine 14 sporadic and 2 familial Malignant Mesotheliomas (MM). Of 16 specimens studied, 15 were informative and 14/15 revealed two electrophoretically distinct methylated HUMARA alleles, indicating a polyclonal origin for these tumors. This discovery has important clinical implications, because an accurate assessment of tumor clonality is key to the design of novel molecular strategies for the treatment of MM.

Keywords : malignant mesothelioma, clonal origin, HUMARA, sarcomas

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