Clinical and Environment Factors Impacting Malignant Pleural Mesothelioma Prognosis

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Introduction

• Malignant Pleural Mesothelioma (MPM) is associated with poor prognosis
• Current management practice involves use of neoadjuvant systemic therapy
• Surgical option includes extrapleural pneumonectomy and pleurectomy with decortication
• Patients necessitate significant recovery following either procedures

Objectives

To identify variables associated with favorable and unfavorable outcomes in the multimodal management of MPM, inclusive of macroscopic complete resection

Methods

• Retrospective review of single center prospectively maintained database
• Patients who underwent macroscopic complete resection, and received systemic therapy
• Clinicopathologic and environmental risk factors included
• Change in tumor thickness (Delta TT) characterized as difference in thickness using modified RECIST criteria, from pre- to post-systemic therapy measurement
• Neutrophil to Lymphocyte Ratio (NLR) based upon post-neoadjuvant blood samples.

Results

• 103 patients met inclusion criteria
• Clinicopathologic Characteristics (Table)
• Change in Tumor Thickness (Waterfall Plot)
• Multivariable Cox Regression Analysis (Forest Plot)
• Ever Smoker (OR = 1.9, 95CI: 1.2 to 2.9)
• Asbestos Exposure (OR=1.5, 95CI: 0.9-2.5)
• NLR (OR=1.5, 95CI: 1.0-2.4)
• Delta TT (OR=2.5, 95CI: 1.6-4.0)
• Response to Neoadjuvant Therapy (Spaghetti Plot)
• Kaplan-Meier Analysis Median Survival:
  - Less than 3 risk factors (RF) present: 33.2 months
  - 3 or more RF present: 10.22 months

Discussion

• In context of Checkmate743 results, patients with 3 or more RF might not benefit from surgery versus first line combination immunotherapy (nivolumab + ipilimumab)
• Multidisciplinary approach warranted to provide meaningful outcomes based on patient wishes
• Combination of four factors is useful metric to inform surgical decision making
• Threshold of presence of 3 factors appears to lead to significant stratification of prognosis in resectable MPM

Disclosures of Presenting Author: None
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