

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

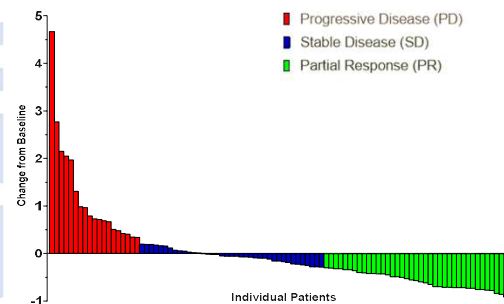
Methods

- 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.

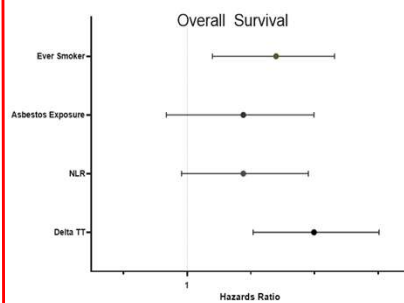
Clinicopathologic

Characteristics	n (%) median (IQR)
Age	64.8 (59.3-68.1)
Male	77 (74.8)
Ever Smoker	55 (52.4)
Asbestos Exposure	77 (74.8)
Histology	
Epithelioid	78 (75.7)
Non-Epithelioid	25 (24.3)
NLR	2.60 (1.71-3.21)
Tumor Thickness	
Pre-Neoadjuvant Tx	59.9 (43.6-82.2)
Post-Neoadjuvant Tx	50.8 (23.5-71.8)
Delta TT (%)	-16.5 (-49.7 to 14.2)

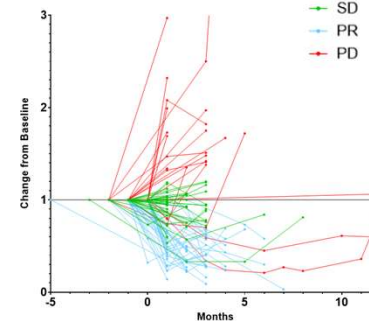
Table: Clinicopathologic Characteristics



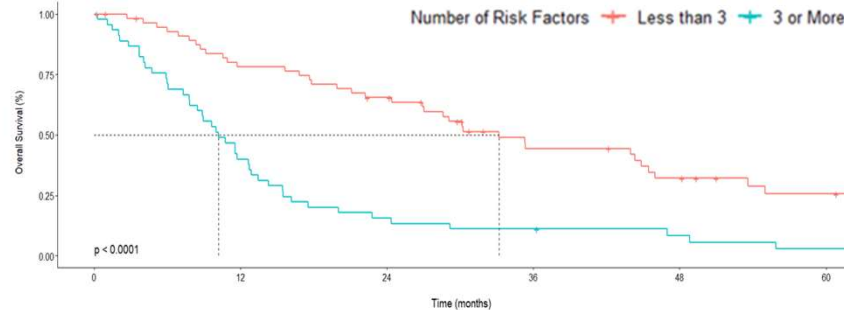
Waterfall Plot representing radiomic response to systemic therapy



Forest Plot highlighting results of cox regression, with outcome overall survival



Spaghetti Plot representing temporal changes in tumor thickness from systemic therapy



Kaplan-Meier Analysis highlighting median overall survival stratified by number of risk factors

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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