Outcomes of Pleurectomy Decortication in Biphasic Mesothelioma

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Objectives: There are limited small, single-institution observational studies examining the role of surgery in biphasic mesothelioma. Herein we report a series of 147 consecutive patients with biphasic mesothelioma treated over 11 years in a high-volume single institution with intended pleurectomy decortication.

Methods: All patients with biphasic mesothelioma from 2007-2017 who underwent pleurectomy decortication (PDC) in our institution were included and clinical, pathologic, and surgical information was retrieved. Kaplan-Meier estimators and log rank test were used to compare the overall survival, and logistic regression models were used.

Results: There were 117 males (80%), 99 right sided operations (67%) and median age was 70(36-86). Neoadjuvant therapy was given to 36(24.5%) and 108(73.5%) received intraoperative heated chemotherapy (IOHC). Macroscopic Complete Resection (MCR) was achieved in 126(86%). Tumors were assigned to stages IA (23, 18.8%), IB (60, 47.5%) II (15, 11.5%), IIIA (17, 13.1%), and IIIB (11, 9%) according to the Eighth Tumor, Node, Metastasis (TNM) edition. The 30 and 90-day mortality were 1.3% and 6.1%. The median overall survival in the MCR group was 16.7 months and 24 months in patients younger than 70 years. In a Univariate analysis, factors that were found to be associated with patient overall survival included age(p=0.001), pre-operative percentage forced expiratory volume in 1 second(p=0.019), and adjuvant therapy(p<0.001). No correlation was found between sex, neoadjuvant therapy and nodal status to overall survival.

Conclusion: In selected patients with biphasic mesothelioma and good prognostic factors prolonged survival after PDC is expected.

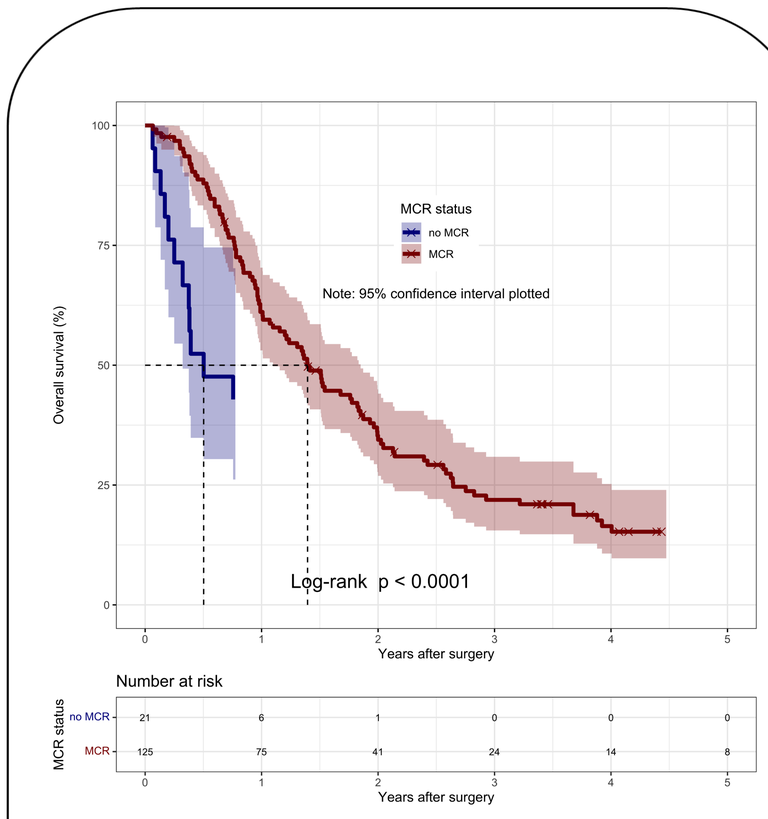


Figure 2. Kaplan-Meier plot depicting estimated survival functions according to MCR(macroscopic complete resection) status

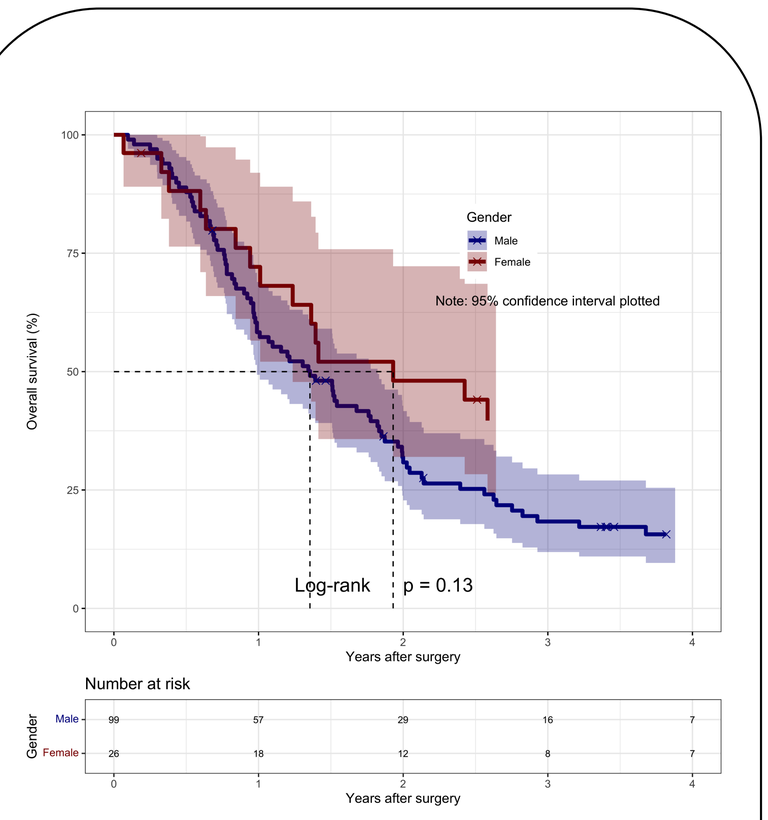


Figure 3. Kaplan-Meier plot depicting estimated survival functions according to sex status in MCR group.

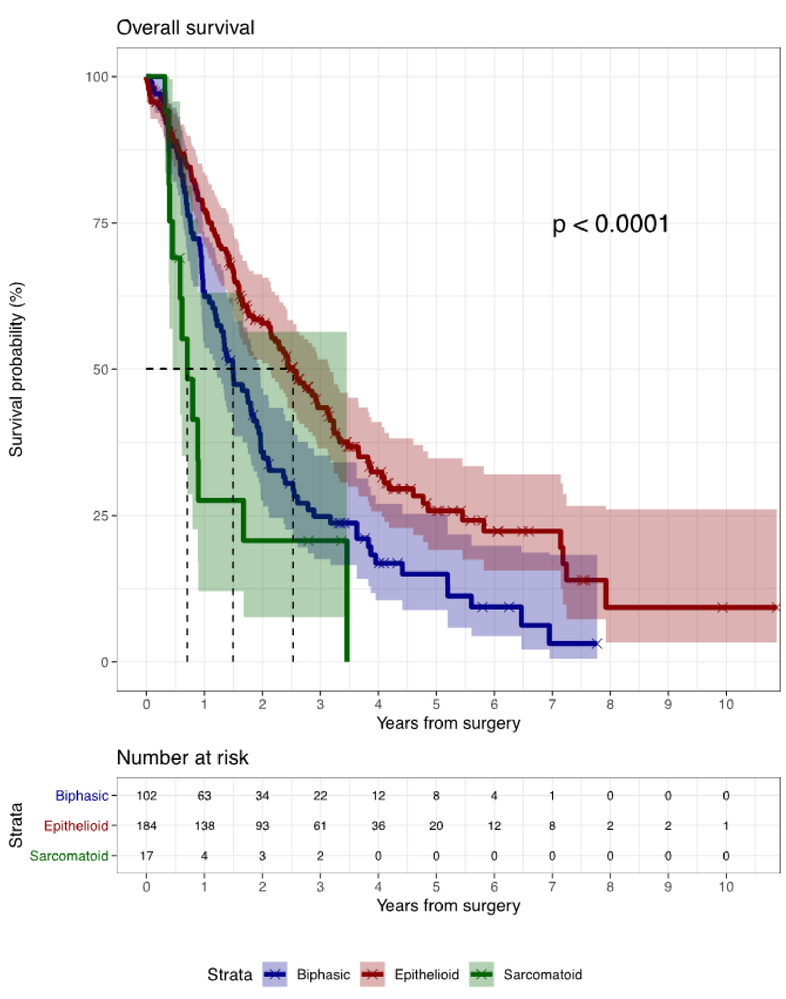


Figure 1. Kaplan-Meier plot depicting estimated survival functions according to histology group

Table 1: Analysis of Association of Overall Survival to Patient Factors in MCR

Factor		Median OS, *months*	Range survival (min-max), *days*	Univariate Hazard Ratio/ P	Multivariate Hazard Ratio/ P
sex	**Female** **Male**	23.17 16.27	24-2361 27-2837	**0.69/0.134** -	**0.66/0.139** -
Age	**≤ 70y** **>70y**	23.93 12.13	27-2837 24-2537	**0.52/0.001** -	**0.81/0.371** -
FEV1	**>80%** **≤ 80%**	24.30 15.67	27-2837 24-2537	**0.58/0.019** -	**0.81/0.426** -
Neoadjuvant	**+** **-**	22.20 16.32	27-2837 24-2537	**0.78/0.363** -	**0.70/0.222**
IOHC	**+** **-**	18.13 12.10	24-2837 137-2116	0.66/0.103 -	**1.06/0.856** -
Adj chemo	**+** **-**	23.57 8.23	162-2837 35-1397	**0.25/<0.001** -	**0.25/<0.001** -
T status:	**T1** **T2** **T3** **T4**	20.63 16.13 18.13 11.40	24-2837 27-2283 50-2361 190-1212	- **1.25/0.445** **1.41/0.181** **1.91/0.107**	- **1.16/0.648** **1.52/0.138** **2.36/0.042**
N status	**N0** **N1&N2**	18.20 12.13	60-2537 24-2837	**0.81/0.304** -	**0.97/0.887** -

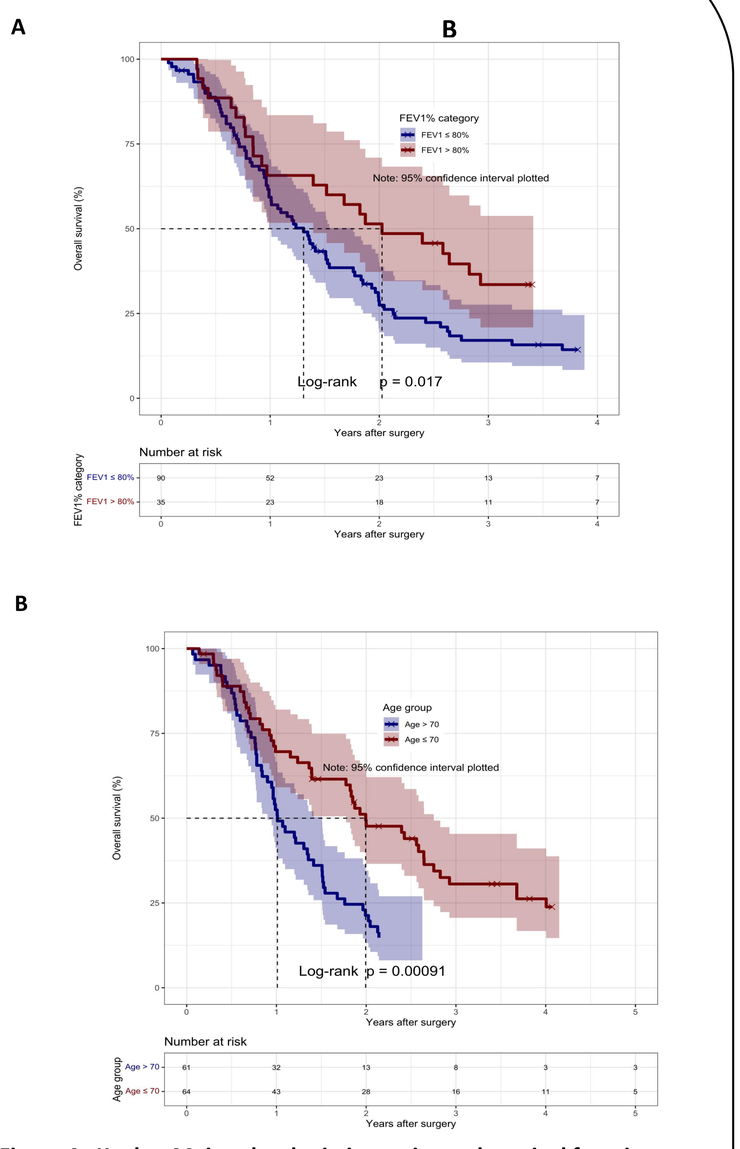
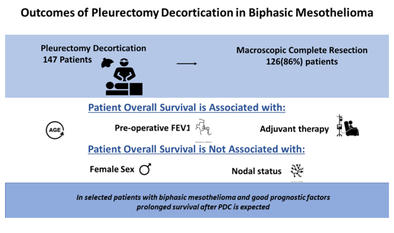


Figure 4. Kaplan-Meier plot depicting estimated survival functions according to Forced Expiratory Vital Capacity in 1 Second –FEV1(A) and age(B) in MCR group

Summary

In selected patients with biphasic mesothelioma and good prognostic factors who undergo PDC with MCR as part of multimodality treatment long term survival is expected



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