

## Improving Malignant Pleural Mesothelioma Outcomes Through Regionalization & Multidisciplinary Care

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### Objective

To determine the impact of regionalization and multi-disciplinary care on malignant pleural mesothelioma outcomes

How can we optimally manage malignant pleural mesothelioma (MPM) to improve patient outcomes?

- 12% of patients survive more than 5 years
- Early stage and surgical treatment independently improve prognosis

Does “regionalization” (care consolidation to a specialized center) improve outcomes?

- For NSCLC patients, multidisciplinary care with regionalization improves outcomes, but it is unknown if these interventions have a similar impact on MPM patients

### Methods

- Retrospective cohort study of histologically-confirmed MPM patients diagnosed between 2009-2020
- **Interventions:** 1) MPM care regionalization (2014); 2) Multidisciplinary tumor board initiation with dedicated, high-volume MPM surgeon (2017)
- **Cohorts:** Pre-regionalization (2009-2014) vs. post-regionalization (2015-2020)
- **Outcome:** Survival until 5/31/2021
- **Data Source:** Electronic health records and institutional cancer registry

### Results

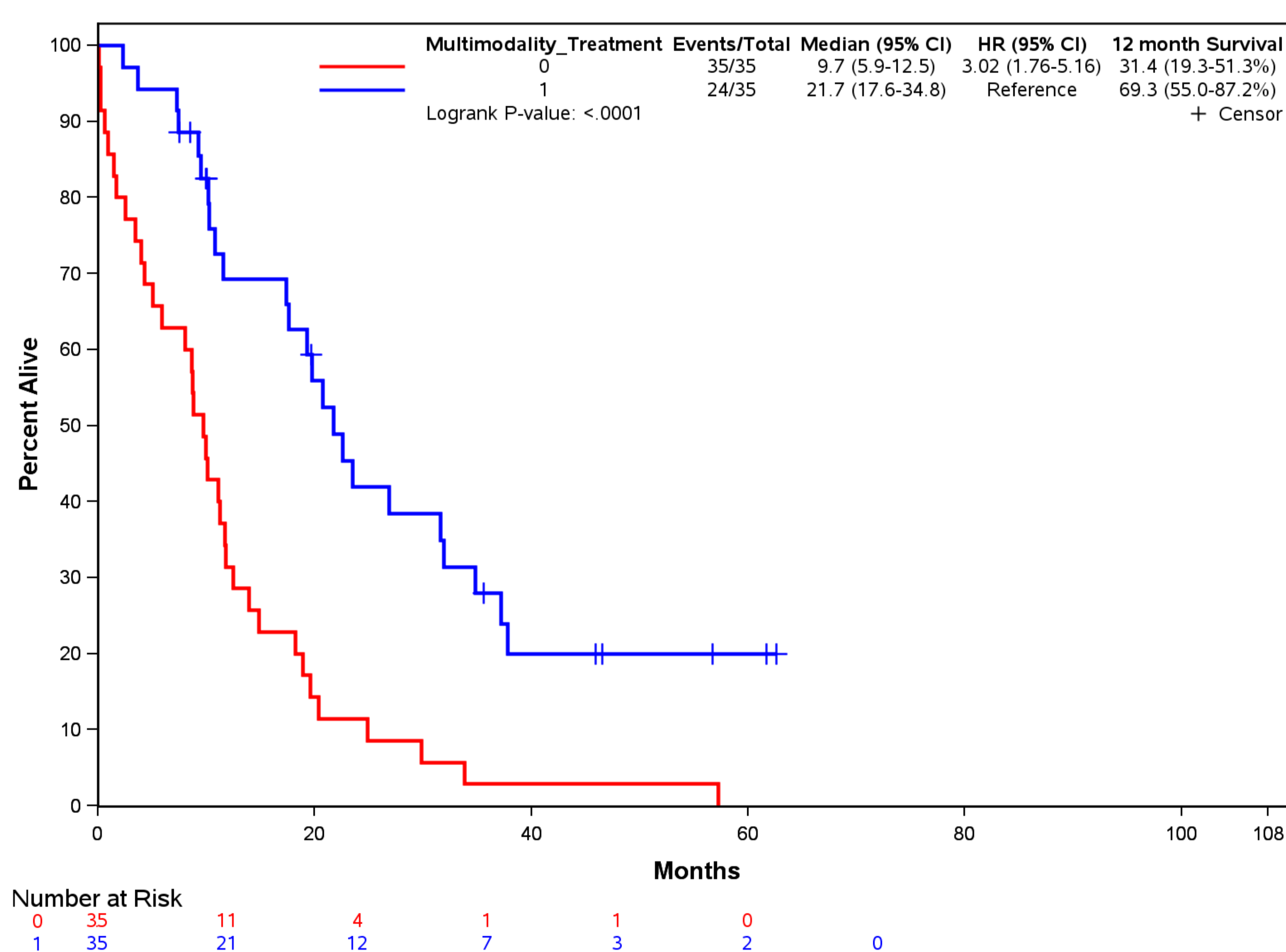
- The post-regionalization cohort was 3.25 times more likely to receive any MPM-directed treatment after adjusting for age, gender, Charlson Comorbidity Index (CCI), histology and stage (aOR 3.25, 95% CI: 1.93-5.49, p<0.0001)
- Surgery and multimodal therapy were both more common in the post-regionalization cohort (Table 1)
- Matched-pair survival analysis (age, CCI, stage, histology) of multimodal treatment to no treatment for both cohorts demonstrated an increased 12-month survival of 69.3% vs. 31.4% (p<0.0001) (Figure 1)

**Table 1. Patient & Treatment Characteristics**

	Pre-Regionalization n= 171 n (%)	Post-Regionalization n= 197 n (%)	p-value
<b>Patient Characteristics</b>			
Age (Median, IQR)	75.0 (69.0-82.0)	76.0 (70.0-81.0)	0.649
Male	128 (74.9%)	149 (75.6%)	0.863
<b>Race</b>			
White	126 (73.7%)	134 (68.0%)	
African-American	6 (3.5%)	13 (6.6%)	
Hispanic	18 (10.5%)	28 (14.2%)	
Asian/Pacific Islander	9 (5.3%)	12 (6.1%)	
Native American/Other	12 (7.0%)	10 (5.1%)	0.435
<b>CCI</b>			
0-3	101 (59.1%)	78 (39.6%)	
4-6	43 (25.1%)	57 (28.9%)	
7+	27 (15.8%)	62 (31.5%)	<0.001*
<b>Cancer Characteristics</b>			
Epithelial Histology	72 (42.1%)	114 (57.9%)	0.003*
Early Stage (I/II)	82 (48.0%)	78 (39.6%)	0.107
<b>Treatment</b>			
Multimodal	4 (2.3%)	31 (15.7%)	
Surgery-Only	6 (3.5%)	13 (6.6%)	
Systemic-Only	65 (38.0%)	80 (40.6%)	
None	96 (56.1%)	73 (37.1%)	<0.001*

\* CCI's may have been affected by the ICD coding switched from ICD-9 to ICD-10 in 2015, with the ICD-10 using additional codes.

**Figure 1. Multimodal Treatment vs. No Treatment Early-Stage Epithelioid MPM Patients Matched-Pair Survival Analysis**  
Matching: Age, CCI, Stage I/II, Histology



**Conclusion:** Consolidating MPM management to a specialized center with dedicated multidisciplinary management and surgical expertise increases stage-appropriate surgical and multimodal treatment, and multimodal treatment improves survival.



Health systems should promptly consider consolidating MPM management to a specialized center to improve patient management and outcomes.

