

Median survival time of female malignant pleural mesothelioma treated by multimodality therapy with extrapleural pneumonectomy reaches 70 months

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Objectives: Malignant pleural mesothelioma (MPM) is well known as a dreadful disease. However, the prognosis is gradually improving. Our first choice is extrapleural pneumonectomy (EPP) followed by hemithoracic radiation and chemotherapy for operable MPM. If EPP is inappropriate, pleurectomy/decortication followed by chemotherapy is performed. **The 5-year survival rate and median survival time of female epithelioid MPM is 67% and 70 months**, respectively. Detailed characteristics of the patients and treatment are presented.

Methods: Among 60 consecutive EPP cases for MPM from 2006 to 2019, nine patients (Table) of female epithelioid MPM were reviewed retrospectively. Immune checkpoint inhibitors were given for only one patient after recurrence who underwent EPP in Jul 2016. The survival data were updated in November 2022. Overall survival from the treatment start was calculated using Kaplan-Meier method.

Results: Median age at EPP was 58 years old (46 - 68). Right side was 5 cases, and left side was 4 cases. Median EPP time was 6 hours 39 minutes (5 h 52 m - 8 h 56 m). No blood transfusion during EPP was in 3 cases (33%). 90-day-mortality was zero, and no patient died less than one year after EPP. Regarding IMIG (international mesothelioma interest group) pathological TNM, T4N1M0 was in 1 case, T3N0M0 was in 4 cases, T2N2M0 was in 2 cases, T1bN0M0 was in 2 cases. IMIG p-Stage was IV in 1 case, III in 6 cases, and Ib in 2 cases. Pathologically, two station mediastinal lymph nodes were metastatic in 2 cases, and two station lung lymph nodes were positive in 1 case. Adjuvant 45-50.4 Gy hemithoracic radiation was completed for 9 patients (100%). Chemotherapy was given for 8 patients (89%). Adjuvant was in 7 patients, and induction was in 1 patient. Postoperative median follow-up period was 11 years (6 y 3 m - 15 y 2 m). Although many advanced cases were treated, **the 5-year survival rate and median survival time were 67% and 70 months**, respectively. **Six of nine patients survived longer than 5 years after EPP.** The death causes were MPM in 4 patients, cerebral infarction in 1 patient, and influenza in 1 patient.

Age at EPP	Side	Adjuvant radiation	Chemo therapy	IMIG pTNM	IMIG pStage	EPP time	EPP date	Death date	Survival after EPP
51	L	45 Gy	Adjuvant	T3(pericardium)N0M0	III	7 hr	Nov 2007	Alive	Alive > 15 Y
58	R	45 Gy	Induction	T3(pericardium)N0M0	III	6 hr	Feb 2011	Dec 2016	5Y11M
68	R	45 Gy	None	T3(pericardium)N0M0	III	8 hr 48 m	Jun 2011	Sep 2012	1Y4M
58	L	45 Gy	Adjuvant	T1bN0M0	Ib	5 hr 52 m	Sep 2011	Dec 2016	5Y2M
60	R	45 Gy	Adjuvant	T3(pericardium)N0M0	III	6 hr 43 m	Jan 2012	Oct 2017	5Y9M
62	R	50.4 Gy	Adjuvant	T1bN0M0	Ib	7 hr 23 m	Jul 2012	Alive	Alive > 10 Y
46	R	50.4 Gy	Adjuvant	T2N2M0	III	8 hr 56 m	Aug 2015	Dec 2016	1Y4M
60	L	50.4 Gy	Adjuvant	T2N2M0	III	6 hr 36 m	Jul 2016	Alive	Alive > 6 Y
57	L	50.4 Gy	Adjuvant	T4N1M0	IV	6 hr	Nov 2016	Dec 2017	1Y1M

Conclusions: **The 5-year survival rate was 67%, and median survival time was 70 months.** Although many advanced cases have been treated, the results of this multimodal treatment with EPP for female epithelioid MPM are excellent, and there have been many long survivors. Both high quality EPP and experienced post-operative managements are imperative for long survival.



No COI

I learned EPP from Dr. Sugarbaker.