

Exploring the behaviour of mesothelioma in a post hoc analysis from the time 1 trial

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Introduction Malignant Pleural Mesothelioma (MPM) is the only malignancy which develops primarily in the pleural space and is a common cause of a malignant pleural effusion (MPE). MPE associated with MPM is managed similarly to any other malignancy, but it is unclear if the underlying mechanisms of fluid accumulation are the same and whether different treatment strategies should therefore be employed. The TIME 1 trial enrolled patients with MPE who underwent pleurodesis. This post hoc analysis compares the outcomes of patients with MPM to the rest of the trial population.

Methods 298 patients had available data on their final diagnosis. A number of different variables were compared, including pleurodesis success, systemic inflammation, the prevalence of trapped lung, total fluid volume drained and baseline pain Visual Analogue Score (VAS).

Results Of the 298 patients included in the analysis 110 patients had mesothelioma (36.9%). Post pleurodesis, MPM patients had a significantly greater rise in CRP than those with other underlying pathologies but had a significantly lower rate of successful pleurodesis. Patients with MPM had a lower pain VAS score on enrolment. There was no significant difference in the rates of trapped lung, the total volume of pleural fluid drained or the change in White Cell Count (WCC) between the groups.

Conclusion There are significant differences in the outcomes of patients with MPM and those with other MPE. Patients with MPM had a lower pleurodesis rate but a significantly greater change in C-reactive protein levels post pleurodesis, signifying a higher inflammatory response to pleurodesis, which has been assumed to associate with pleurodesis success. The mechanisms causing the increased inflammatory response in MPM are unclear. The basis for the lower rates of pleurodesis is unexplained, especially as there was no significant difference in the rates of trapped lung. Patients with MPM had a lower level of pain VAS scores on enrolment but further analyses are needed to determine whether this is clinically relevant and reproducible. These data indicate that MPM behaves differently to other forms of MPE and treatment strategies should be tailored towards MPM as a separate entity.



Mesothelioma



	Mesothelioma	Other	Significance (P value)
Pleurodesis Success	77/107 (72.0%)	142/173 (82.1%)	P =0.046 chi ² = 3.97, 1df
Trapped lung	19/91 (20.9%)	26/177 (14.7%)	P=0.199 chi ² = 1.65, 1df
Mean change in CRP (SD)	57.86 (SD 42.58)	30.71 (SD 50.12)	P=<0.001
Mean change in WCC (SD)	2.53 (SD 2.84)	1.89 (SD 3.32)	P=0.13
Enrolment pain VAS, median (IQR)	4 (IQR 6)	5 (IQR 15)	P=0.016

SD = standard deviation, IQR = interquartile range