P11 UTILITY OF A NOVEL PROGNOSTIC TOOL IN UNSELECTED PATIENTS WITH MALIGNANT PLEURAL MESOTHELIOMA

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Introduction Malignant pleural mesothelioma (MPM) has a poor, but heterogeneous prognosis. Previously developed prognostic scores have been derived from patient cohorts not typical of routine UK practice. Recently, a novel prognostic tool, validated in unselected UK patients was published.¹

Objective To evaluate the utility of a novel prediction model by Brims *et al*,¹ to predict prognosis in mesothelioma patients presenting to a two-site UK district general hospital.

Methods Consecutive patients diagnosed with mesothelioma between January 2010 and December 2015 were identified. Data were collected from electronic records at diagnosis (age, gender, histology, performance score, haemoglobin, albumin, weight loss) as well as dates of diagnosis and of death or last follow-up. Patients were allocated to prognostic groups as described by Brims *et al*. Groups were compared using Kaplan-Meier survival analysis. The proportion of patients whose survival fell within $\pm 33\%$ of the survival predicted from the validation cohort of Brims *et al*. was calculated.

Results 71 patients (60 male) were diagnosed with MPM during the study period, median age 74 (interquartile range (IQR) 15). Histological diagnosis was available in 66 (93%) patients (43.9% epithelioid, 21.2% undefined mesothelioma, 18.2% sarcomatoid, 13.6% biphasic, 3.0% atypical/mixed). Median overall survival was 262 days (IQR 284 days). 97% of patients could be allocated to a prognostic group. Median survival by Brims group, compared with predicted survival, is shown in Table 1.

Conclusions The "Brims Score" can be retrospectively calculated in a high proportion of patients, using routinely collected data. It appears reliably to separate patients into cohorts with statistically significant difference in survival. The large within-group variation in survival, however, limits the utility of the score as a means of answering the question, "How long have I got, doc?" for individual patients.

Abstract P11 Table 1 Comparison of median survival by Brims group with predicted survival

Brims Group	n	Median survival (days)	IQR (days)	Median predicted survival (days)	% of group within $\pm 33\%$ predicted survival
2	12	419	312	444	33.0
3	33	319	216	334	48.5
4	23	131	247	210	21.7

*Log-rank test
*p = 0.02

REFERENCE

- 1 Brims F, Meniawy T, Duffus I, *et al*. A novel clinical prediction model for prognosis in malignant pleural mesothelioma using decision tree analysis. *Journal of Thoracic Oncology* 2016;**11**(4):573–582.

P12 EXPLORING THE CHARACTERISTICS OF PATIENTS WITH MESOTHELIOMA WHO DECLINE CHEMOTHERAPY: A PROSPECTIVE COHORT OF 200 PATIENTS

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Introduction Malignant pleural mesothelioma (MPM) is an aggressive cancer with a poor prognosis. Treatment options are limited, and pemetrexed and cisplatin chemotherapy is the only intervention shown to extend life. Promising new therapies may provide alternate treatment options in the future.

Chemotherapy uptake varies in MPM. Some centres report rates as low as 46% in eligible patients. The aim of this study was to explore the characteristics of patients who declined chemotherapy, and to determine which factors were associated with chemotherapy refusal.

Methods Prospective data were collected on all patients diagnosed with MPM in one UK tertiary referral centre. Diagnosis of MPM and eligibility for chemotherapy were determined at the regional MPM multidisciplinary meeting. Patients were followed up until death or censored on 13/7/16.

Patient characteristics were compared using chi-squared, Fisher's Exact and unpaired T-tests. Kaplan Meier curves were drawn to compare survival between patients who accepted and declined chemotherapy. Logistic regression was used to assess associations between patient characteristics and chemotherapy uptake.

Results 200 patients were diagnosed with MPM between 1/3/08 and 8/6/16. 150 (75%) were eligible for chemotherapy. 93/150 (62%) patients received chemotherapy, 46/150 (31%) declined and 11/150 (7.3%) patients did not receive it for other reasons.

Patient characteristics are shown in Table 1. The group who declined chemotherapy were older (mean age 74.4 vs 68.4, $p < 0.001$), with a higher proportion of females (23.9% vs 10.8%, $p = 0.041$) and fewer patients with performance status (PS) 0 (17.4% vs 43%, $p = 0.005$). Patients who received chemotherapy had longer median survival (426 days vs 203 days, $p = 0.001$, HR 0.519, $p = 0.015$).

The factors associated with chemotherapy refusal were age (regression coefficient 0.144, $p < 0.001$) and PS ≥ 1 (coefficient 1.052, $p = 0.027$).

Conclusion This is the first study to report the characteristics of MPM patients who declined chemotherapy. Significant differences were seen compared with patients who received chemotherapy. Further research is needed to determine whether similar patterns are seen in other centres.

Reasons for refusal were not collected, but the association with age and worse performance status may reflect concerns about chemotherapy toxicity. Qualitative research could explore patients' reasons for refusing chemotherapy.

Abstract P12 Table 1 Characteristics of patients who received chemotherapy and patients who declined chemotherapy

	Received chemo	Declined chemo	p
Total (n = 139)	93 (66.9)	46 (33.1)	
Gender, n (%)	83 (89.2)	35 (76.1)	0.041
Male	10 (10.8)	11 (23.9)	
Female			
Laterality, n (%)	54 (58.1)	27 (58.7)	0.943
Right	39 (41.9)	19 (41.3)	
Left			
Age, mean (SD)	68.4 (6.36)	74.4 (7.35)	<0.001
Performance status, n (%)	40 (43.0)	8 (17.4)	0.005
0	48 (51.6)	32 (69.6)	
1	5 (5.4)	6 (13.0)	
2			
Histology, n (%)	63 (67.7)	36 (78.3)	0.540
Epithelioid	15 (16.1)	6 (13.0)	
Sarcomatoid	9 (9.7)	1 (2.2)	
Biphasic	2 (2.2)	1 (2.2)	
Desmoplastic	4 (4.3)	2 (4.3)	
Not specified			
IMIG stage, n (%)	28 (30.1)	15 (32.6)	0.587
I	4 (4.3)	2 (4.3)	
II	33 (35.5)	13 (28.2)	
III	16 (17.2)	8 (17.4)	
IV	12 (12.9)	8 (17.4)	
Not documented			
Symptoms, n (%)	6 (6.5)	0 (0)	0.078
Asymptomatic	37 (41.9)	22 (47.8)	0.470
Chest pain	76 (81.7)	39 (84.8)	0.550
Breathlessness	41 (44.1)	18 (39.1)	0.499
Cough	38 (41.3)	22 (47.8)	0.367
Systemic symptoms (fatigue, weight loss or sweats)			
Blood tests, median (IQR)	138 (126–150)	132.5 (121–149)	0.263
Haemoglobin, g/dL	5.73 (4.80–7.00)	5.84 (4.28–7.00)	0.729
Neutrophils, $\times 10^9/L$	1.6 (1.15–2.15)	1.32 (1.00–1.94)	0.076
Lymphocytes, $\times 10^9/L$	35 (31–38)	34 (30–38)	0.456
Albumin, g/L	4.00 (2.73–5.38)	4.18 (3.09–6.38)	0.255
NLR			
Survival, days, median (IQR)	426 (290–674)	203 (126–405)	0.001
HR (univariable cox proportional hazards)	0.519		0.015
HR (multivariable cox proportional hazards)			

P13 THE RATIONALE FOR SETTING UP A DEDICATED PLEURAL PROCEDURE LIST: BENEFITS FOR PATIENTS AND TRUSTS

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Introduction and objectives Pleural disease contributes to a significant proportion of acute admissions and hospital bed-days. Traditionally, patients presenting with pleural effusion, were admitted for management, including patients with terminal disease.

In May 2014, we designed one of the first dedicated pleural procedure lists regionally allowing patients to undergo procedures on a day-case basis.

A dedicated pleural procedure room was established for a weekly session to accommodate a maximum of 5 pleural procedures. The list was consultant-delivered by a level 2 thoracic ultrasound-trained Consultant, with built in consultant cross-cover to prevent cancellation. An electronic referral system, pleural procedure patient pathway and WHO procedural checklist was designed to be completed for each case to maximise patient safety and efficiency. Dedicated nursing was provided to enhance patient experience and multi-professional development. The list provided weekly opportunity for education/training for those wishing to gain ultrasound certification and procedural competency-based assessment.

This study looked at the impact of acute service redesign.

Methods This was a review of a prospectively maintained database of a weekly pleural procedure list, from May 2014–May 2016. Comparison was made with data obtained from previous local audit, including LOS pre and post introduction of the new service.

Results 398 patients were referred over 2 years; 178 outpatients, 200 inpatients. On average, 4 pleural procedures/ultrasound were performed per session. A total of 3738 bed days were saved, based on an average LOS of 22 days for patients previously admitted with pleural effusions, demonstrated by audit pre-2014. In 178 cases, due to the ambulatory nature of the introduced service, average LOS was reduced from 22 to 1 day. There have been no reported adverse events since set-up, and additional income has been generated by receiving a day-case best practice tariff (BPT), introduced in 2013/14.

Conclusion Service innovation resulting in a dedicated hospital pleural procedure list has resulted in demonstrable benefits for patients in terms of LOS, patient safety and experience. Our set up has generated recurrent financial gains through bed day savings, created a regional hub for US training and confirmed the commendable merits of ambulatory care for patients requiring pleural procedures.

Abstract P13 Table 1 LOS and cost savings from day case procedures: Based on average LOS of 22 days for patients admitted with pleural effusions in 2013

Year	Number of outpatients patients seen	Number of bed-days saved	Additional income generated by receiving the improved BPT (HRG Code DZ06Z) (BPT minus standard tariff) x day case
May 2014	83	83 patients x 22 = 1,826 bed days minus 83 bed days (one day case spell) = 1743	£ 80,925 (BPT Day case tariff = £1,511)
May 2015	95	95 patients x 22 = 2,090 bed days minus 95 bed days (one day case spell) = 1995	£ 75,240 (BPT Day case tariff = £1,328)