

Breathlessness and survival abstract

- 350 words, 1 table/figure

Title: **Breathlessness post-drainage predicts survival in patients with malignant pleural effusion**

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Introduction

Malignant pleural effusions (MPE) are associated with poor prognosis, with a median survival of about 6 months. However, there is a wide variation in survival. Predicting prognosis is important in determining treatment. In other chronic diseases characterised by breathlessness, including heart failure and idiopathic pulmonary disease, breathlessness is associated with poor prognosis.

Objective

To determine whether breathlessness following pleural drainage is associated with poor survival in patients with MPE.

Methods

A post-hoc analysis of patients in the TIME2 (randomised trial of chest drain and pleurodesis versus indwelling pleural catheter in patients with MPE) and TIME3 (randomised trial of intrapleural fibrinolytics versus placebo in patients with non-draining MPE) clinical trials. In these studies, average breathlessness over the last 24 hours was measured using a previously-validated 100mm visual analogue scale (VASD), anchored at one end with 'no breathlessness at all' and the other with 'worst possible breathlessness.' Minimally important difference ≥ 19 mm. Subjects assessed their breathlessness at baseline and, following intervention, then completed a daily diary for 42 (TIME2) or 28 (TIME3) days. Survival was measured in days from randomisation to death. Cox regression was used to identify associations between breathlessness and survival. Responders were defined as patients with a reduction in mean post-drainage VASD of ≥ 19 mm.

Results

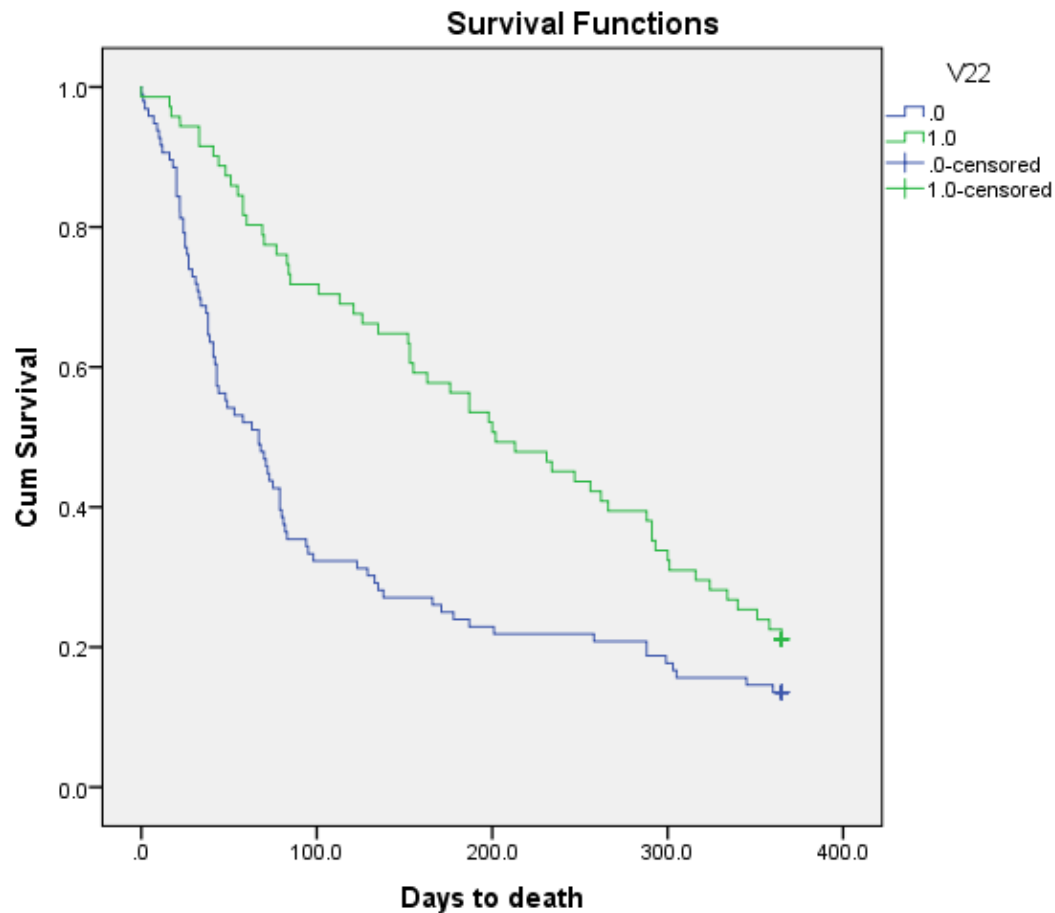
The study included 177 patients. Mean baseline VASD was 50mm (SD 27). Median survival was 83 days (IQR 33-288). There was no significant association between baseline VASD and survival ($p=0.563$). The association between mean post-procedure VASD and survival was highly significant (hazard ratio 1.02, 95%CI 1.01-1.03; $p<0.001$). The difference in survival between responders and non-responders was highly significant (log rank test $p<0.001$).

Conclusions

In patients with MPE in TIME2 and TIME3 there was a significant association between mean post-procedure VASD and survival. Patients who did not respond symptomatically to pleural fluid drainage appear to have a worse survival than those who did.

New comment:

I wonder, for the BTS Abstract – if the K-M plot might benefit from clearer labelling? At present – not sure I “get it”?



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- 2 Roberts ME, Neville E, Berrisford RG, Antunes G, Ali NJ. Management of a malignant pleural effusion: British Thoracic Society Pleural Disease Guideline 2010. *Thorax*. 2010; **65**: ii32-40.
- 3 Manali ED, Stathopoulos GT, Kollintza A, Kalomenidis I, Emili JM, Sotiropoulou C, Daniil Z, Roussos C, Papiris SA. The Medical Research Council chronic dyspnea score predicts the survival of patients with idiopathic pulmonary fibrosis. *Respir Med*. 2008; **102**: 586-92.
- 4 Guazzi M, Myers J, Peberdy MA, Bensimhon D, Chase P, Arena R. Maximal dyspnea on exertion during cardiopulmonary exercise testing is related to poor prognosis and echocardiography with tissue Doppler imaging in heart failure. *Congest Heart Fail*. 2009; **15**: 277-83.