Predicting Risk in Pleural Disease

NON-MALIGNANT PLEURAL EFFUSIONS (NMPE): A PROSPECTIVE STUDY INTO 355 CONSECUTIVE UNSELECTED PATIENTS

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Introduction and objectives Non-Malignant Pleural Effusions (NMPE) have an estimated annual incidence of 200,000 in the UK.1 They are often secondary to underlying organ dysfunction, with congestive heart failure (CHF) the leading cause. CHF itself carries a high mortality risk, with 28% of patients with New York Heart Association (NYHA) class IV dying within a year.2 Despite this, information on baseline characteristics, prognostic features and mortality in NMPE is sparse. Our aim is to determine the mortality rates in NMPEs in a prospective observational trial.

Methods We recruited 784 consecutive patients presenting to a pleural service, between 03/2008 and 03/2015, with an undiagnosed pleural effusion. Further analysis was conducted on the 355 patients with NMPE.

Pleural biochemistry, cytology, thoracic USS and chest radiograph were performed. Echocardiogram, CT scans, radiological-guided biopsy and medical thoracoscopy were undertaken as clinically indicated. Patients were followed-up for a minimum duration of 12 months with final diagnosis decided by independent review by 2 respiratory consultants. Survival data was calculated from study entry to death. Surviving patients were censored on 07/2016.

Results Of the 784 patients, 355 (45%) were diagnosed with a NMPE. These patients had a mean age of 68 (SD 17) with 69% of patients male. Patients with CHF (HR 4.7 CI: 2.3–9.5) had a 50% 1-year mortality and a mean age of 79. Renal failure (HR 12.9) and liver failure (HR 4.8 CI: 1.9–12.9) patients had 1-year mortality rates of 31% and 25% respectively (HR c/w inflammatory pleuritis). Bilateral effusions (HR 2.6 CI 1.7–3.9) and transudative effusions (HR 3.1 CI: 2.2–4.3) were associated with a worse prognosis in patients with NMPE, with a 57% and 44% 1-year mortality respectively.

Conclusion This is the largest prospectively collected series in patients with NMPE, demonstrating that those secondary to organ dysfunction have an extremely high 1-year mortality. The presence of a pleural effusion in patients with CHF is a marker of severe disease, almost doubling the mortality risk compared to patients with NYHA class IV CHF.

REFERENCES