LETTER

Authors' reply

We welcome the letter from Dr Iles and the opportunity to make additional comments on the subject of our recent editorial.[1] It is correct that the mortality rate in normotensive patients with acute pulmonary embolus (PE) reported in the recent study by Boca *et al*[2] refers to all-cause mortality at 3 months and not inpatient mortality, and we are pleased to have the opportunity to clarify this. A wide range of mortality rates in acute PE have been reported in published studies, depending on whether hypotensive and normotensive patients are included together or reported separately and whether inpatient, 30-day or 3-month mortality is quoted as an end point. Furthermore, identifying the exact cause of death in studies of PE is very difficult and few if any have been able to provide accurate data on this, therefore most report all-cause mortality. In the recent European Society of Cardiology guidelines on acute PE[3] it states that the risk of early mortality in normotensive patients with acute PE is dependent on the presence of right ventricular dysfunction (RVD) on transthoracic echocardiography, with studies reporting rates of 3–15% in those who are normotensive with RVD and <3% in those without RVD. Indeed, in the ICOPER study,[4] 50% of normotensive patients with acute PE had RVD and the mortality in that group was 10%, much higher than in those who were normotensive but without evidence of RVD. These observations imply that, even in normotensive patients, clot burden as implied by the presence of RVD contributes to the risk of early death. This suggests that death after PE in those normotensive at presentation is not simply down to other diagnoses such as cancer but that cardiorespiratory comorbidities are likely to contribute to the risk in an additive way. In a recent study by Ibrahim and colleagues which included >15 000 patients with acute PE, the 30-day mortality rate in normotensive patients not receiving thrombolysis was 7.7% and the in-hospital mortality rate for normotensive patients who did not receive thrombolysis was 7.2 per 1000 person days.[5] We therefore believe that it would be wrong to underestimate the early acute PE-associated mortality risk, even in normotensive patients. We believe this is significant in those with objective evidence on echocardiography or on cardiac biomarkers of RVD. It is this association which is eloquently described in the original article on which our editorial was based, stressing its importance to the literature.[6]

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