ASSOCIATION BETWEEN AGE, TROPONIN LEVEL AND MORTALITY IN PATIENTS PRESENTING TO HOSPITAL WITH ACUTE PULMONARY EMBOLISM (NIHR HEALTH INFORMATICS COLLABORATIVE TROP-PE STUDY)

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Background A positive cardiac troponin (cTn) is an independent predictor of short-term mortality in individuals presenting with acute pulmonary embolism (PE). However, there is limited evidence regarding the impact age has on the association between cTn levels and mortality in patients with PE. The aim of our study was to investigate the relationship between cTn level, age, and all-cause mortality, in hospitalised patients with a PE.

Methods A retrospective cohort study using the National Institute for Health Research Health Informatics Collaborative Cardiovascular dataset of all consecutive patients who had a troponin measured at five hospitals (Imperial, University College London, Oxford, King’s and Guy’s and St Thomas’) between 2010 and 2017. Patients admitted to hospital with a primary diagnosis of PE with at least one cTn measurement were included. Survival analyses were performed using multivariate Cox-Regression analyses. The peak cTn level (highest level measured), standardised to the upper limit of normal (ULN), was used for all analyses. Results 1,477 patients with at least one cTn measurement and a diagnosis of PE were included. During a median follow-up of 34.8 months, there were 290 (19.6%) deaths. Elevated cTn (>1xULN) was associated with mortality with a hazard ratio (HR) of 3.29 (95% confidence interval [CI] 1.95–5.53) for 30-day mortality and 2.12 (95% CI 1.63–2.75) for 3-year mortality. Higher cTn levels were progressively associated with a higher mortality risk, reaching a maximum HR of 2.59 (95% CI 1.64–4.09) at 141xULN (Figure 1). Younger patients (<55 years), compared with those aged over 55, had the highest 3-year HR associated with a positive cTn of 2.94 (95% CI 1.48–5.82) despite having the lowest troponin levels (mean 7.01xULN) on admission (Figure 2).

Conclusion Elevated cTn, at all ages, is associated with an increased mortality risk in patients presenting with PE, with increasing cTn levels conferring a progressively worse long-term prognosis. Elevated cTn, no matter how small, needs to be taken seriously, particularly in young patients with an acute PE.

Conflict of Interest No conflicts of interest

ASSOCIATION BETWEEN TROPONIN AND MORTALITY IN ACUTE STROKE (NIHR HEALTH INFORMATICS COLLABORATIVE TROP-STROKE STUDY)

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Atrial fibrillation (AF) is the most common cardiac arrhythmia and is associated with significant morbidity and mortality. By 2060, it is estimated that 18 million adults over 55 years will have AF in Europe, and significant healthcare costs are projected to accompany this substantial increase in prevalence. Sex plays a major role in its pathogenesis, but conflicting results have been reported on whether the risk of new-onset AF differs between men and women. This systematic review and meta-analysis of epidemiological studies aims to compare the incidence of new-onset AF between men and women in the community setting.

Methods We searched PubMed Medline and Ovid Embase for longitudinal studies from their inception. We selected studies if they presented sex-specific incidence estimates of new-onset AF for participants without a prior history of AF recruited from the general population. We assessed the risk of bias from methodological quality using the Newcastle Ottawa Scale (NOS). We pooled data using a random-effects model with inverse-variance weighting approach, and carried out subgroup analyses to explore heterogeneity based on age and the sampling population. Risk ratio (RR) and 95% confidence interval (CI) were generated to compare the incidence of new-onset AF between men and women.

Results A total of 54 prospective cohort studies met the inclusion criteria and were systematically reviewed. Of these, 45 with data on a total of 10,530,623 participants (40% women) were included in the meta-analysis. Pooled analysis demonstrated that men had a statistically significant higher risk of developing new-onset AF than women (RR 1.53; 95% CI 1.40–1.67).