myocardial injury (e.g. echocardiogram evidence of RV strain or raised Troponin) is recognised ("sub-massive" PE) where considerable debate remains as to reliable prognostication and appropriateness of thrombolysis.

Aims Recognising a tendency in our district general hospital to treat PE aggressively, we sought to assess our own practise with regards to thrombolytic therapy in PE to better understand our interpretation of NICE guidance and the wider literature.

Objective Assess routine quantification of haemodynamic instability of the acutely unwell patient in the clinical environment and the extent with which knowledge of right ventricular compromise and cardiac biomarkers influenced decision to thrombolyse.

Methods Retrospective review of case records. Data was extracted from the medical records by one of the authors followed by joint scrutiny by all authors.

Results From June 2010 over 24 months, 17 patients (6 males, 11 females) have been thrombolysed. Median age 62 (range 24–90). Of these one patient died 4 days later of sepsis and multi organ failure, and one developed a haematoma in her arm which resolved with conservative management.

Of these patients only two Massive i.e. haemodynamically unstable with one thrombolysed on the ITU. In the submassive PEs, supporting evidence for thrombolysis was CT in 5 cases, and echo 5, both in 2, and lab (troponin rise) in 9 cases.

Conclusion Thrombolysis in PE especially in submassive PEs remains an area of controversy and clinically a dilemma at times. Our case series shows that patient selection supported by relevant investigations, appropriate patients can benefit without any untoward events.

References

NICE CG144 Venous thromboembolic diseases: full guideline.
Jaff MR et al. Management of massive and submassive pulmonary embolism, iliofemoral deep vein thrombosis, and chronic thromboembolic pulmonary hypertension: a scientific statement from the American Heart Association. Circulation 2011.

P145 THROMBOLYSIS OF ACUTE PE PATIENTS REDUCES SUBSEQUENT DEVELOPMENT OF CTEPH

doi:10.1136/thoraxjnl-2012-202678.428

D C Thomas, R M Limbrey. *University Hospital Southampton NHS Foundation Trust, Southampton, United Kingdom*

Introduction Pulmonary Embolism (PE) is a frequent diagnosis and the incidence of Chronic Thromboembolic pulmonary hypertension (CTEPH) after a single acute episode of PE is higher than expected – in one prospective long-term study 3.8% at 2 years *(Pengo et al 2004)*. A diagnosis of CTEPH carries a 30% 5 year mortality and early diagnosis is vital if treatment is to be of success although successful treatment options remain limited.

We hypothesized that by following up all new diagnoses of PE we would pick up early cases of CTEPH and identify risk factors for those developing CTEPH. We also hypothesized that thrombolysis as per the BTS guidelines would reduce the subsequent incidence of CTEPH.

Methods A retrospective study of all patients referred to a PE clinic over a 2 year period was performed. Initial and follow up echocardiograms were examined, provoking factors and treatment identified with a primary end point of development of CTEPH at 2 years.

Results Of the first 50 patients presenting with an acute PE 12% (n=6) had evidence of CTEPH on echocardiogram after 2 years. The major risk factor for the development of CTEPH was an initial echocardiogram demonstrating a RVSP>50mmHg which conferred a 5-fold increase in persistent pulmonary hypertension on echocardiogram at 2 years (36% versus 7%).

None of the thrombolysed patients went on to develop CTEPH despite having in 50% an RVSP>50mmHg and all had a normal early (within six months) repeat echocardiogram.

Conclusions Patients who present with an acute PE and have an initial RVSP of >50mmHg on echocardiogram have a 5 fold increase in developing persistent pulmonary hypertension at 2 years. However patients who had a RVSP>50mmHg at diagnosis and are thrombolysed do not appear to develop CTEPH and have normal echocardiography at 2 years. Bearing in mind the mortality CTEPH carries and the difficulty in treating it, patients presenting with an acute significant PE and a RVSP>50mmHg should be considered for thrombolysis regardless of haemodynamic compromise.

Reference

1. Pengo V, Lensing AWA, Prins MH, et al., Incidence of chronic thromboembolic pulmonary hypertension after pulmonary embolism, N Engl J Med, 2004; 350:2257–64.

P146 CAN RAISING THE D-DIMER THRESHOLD SAFELY REDUCE THE NUMBER OF CT PULMONARY ANGIOGRAMS PERFORMED IN SUSPECTED PULMONARY EMBOLISM?

doi:10.1136/thoraxjnl-2012-202678.429

O Orhan, C King, A Salam, V Mak. *North West London Hospitals NHS Trust, London, England*

Introduction CT Pulmonary Angiography (CTPA) is the gold standard investigation for suspected pulmonary embolism (PE). Low or intermediate probability clinical prediction (e.g. Wells score) combined with a negative D-dimer effectively rules out PE in over 97% of cases, avoiding the need for CTPA and its inherent risks (radiation exposure and contrast induced nephropathy). This is the recommendation of the BTS guidelines. We undertook a study to examine if the BTS guidelines were being adhered to in our Trust, and whether increasing the D-dimer threshold may safely reduce the need for CTPA.

Methods We obtained a list of CTPAs performed within the Trust between September 2009 and September 2011 and searched our pathology system for a contemporary D-dimer result (HemosIL latex immuno-assay). For all patients with a negative D-dimer (≤230ng/mL), we looked for a documented pre-test probability score in the clinical notes or calculated a Wells score if not documented. We then analysed CTPA results with D-dimer between 230–500ng/mL.

Results There were 1645 CTPAs performed during the study period, of which 15% had confirmed PE 903(54.9%) had a contemporary D-dimer result, and of these 57(6.3%) had a negative D-dimer, and 193(21.4%) were between 230–500ng/mL. In the negative D-dimer group, 3 (5.3%) had confirmed PE's on CTPA. One was on tranexamic acid, which can falsely lower D-dimer, and 2 had prolonged admissions in whom D-dimer testing was not appropriate. We were able to examine the notes of 39/57 cases and only 3 (8%) had a pre-test probability documented. On review 31/39 (79.5%) had a low to intermediate Wells score and should not have had a CTPA.

In the 230–500ng/mL D-dimer group, there were only 4/193 (2.1%) positive CTPAs with a negative predictive value 98%.

Conclusions In our Trust, the lack of pre-test probability scoring combined with D-dimer is leading to inappropriate CTPAs. The rate of PE in the patients with a D-dimer between 230–500ng/mL is also very low. A protocol recommending initial treatment pending an urgent respiratory team review prior to CTPA, could safely reduce the number performed in this group, if combined with a low to intermediate pre-test probability score.

P147 THE WELLS PE SCORE – AN EFFECTIVE PRE-TEST PROBABILITY TOOL?

doi:10.1136/thoraxjnl-2012-202678.430

J Karalis, J Curtin Norfolk. *orwich University Hospital, Norwich, United Kingdom*

Introduction and Objectives British Thoracic Society guidelines advise all patients with possible PE should have pre-test clinical