JOURNAL CLUB SUMMARIES

What's hot that the other lot got

Ben Soar

RIVAROXABAN OR ASPIRIN FOR EXTENDED TREATMENT OF VENOUS THROMBOEMBOLISM

Many patients with venous thromboembolism (VTE) require extended treatment beyond the standard 6 months if they are felt to be at high risk of recurrence. It remains uncertain as to whether full or lower intensity anticoagulation is required. This randomised, double-blind, phase III trial (Weitz *et al*. *N Engl J Med* 2017;376:1211–22) compared once daily rivaroxaban at 20 mg or 10 mg doses with 100 mg of aspirin. Each patient had already completed 6–12 months of treatment dose anticoagulation therapy. A total of 3365 patients were included. The primary efficacy outcome was symptomatic recurrent VTE, and the principal safety outcome was major bleeding. The rate of symptomatic VTE was 1.5% in the 20 mg rivaroxaban group, 1.2% in the 10 mg rivaroxaban group and 4.4% in those receiving aspirin ($p<0.001$ for both rivaroxaban doses vs aspirin). Rates of major bleeding were 0.5% in the 20 mg rivaroxaban group and 0.4% in the 10 mg rivaroxban group and 0.3% in the aspirin group. Non-major bleeding rates were 2.7%, 2% and 1.8%, respectively. The authors conclude that the risk of recurrent VTE was significantly lower in the 20 mg and 10 mg rivaroxaban groups than the aspirin group without a significant increase in bleeding rates.

FAILURE OF C REACTIVE PROTEIN IMPROVEMENT IN PNEUMONIA

C reactive protein (CRP) is a commonly used acute phase protein used to assess and monitor patients with infection. Mortality for community acquired pneumonia (CAP) remains high. Better risk prediction during hospitalisation could improve management and outcomes. This retrospective study in three Danish hospitals (Andersen *et al*. *Infect Dis* 2017;49:251–160) assessed whether CRP level improved on day 3 of admission as a predictor of 30-day mortality. A total of 814 patients were included, and 90 (11%) died within 30 days. Risk of death was increased in patients with CRP level >75% (OR 2.44; 95% CI) and in patients with CRP level <50% at day 3 (OR 4.25; 95% CI). The highest mortality was seen in those patients whose CRP level did not decline by 50% regardless of initial CRP level and in all CURB 65 groups. The authors conclude that CRP response at day 3 is a valuable predictor of 30-day mortality in hospitalised patients with CAP.

PLEURAL EFFUSION DRAINAGE AND DIAPHRAGMATIC FUNCTION

There are many theories regarding the cause of breathlessness in pleural effusion with diaphragmatic dysfunction being one of the most common. This study looked at the effect of drainage in unilateral pleural effusion on diaphragmatic function in mechanically ventilated patients (Umbrello *et al*. *Crit Care Resusc* 2017;19:64–70). They used ultrasonography of the ipsilateral hemidiaphragm to assess respiratory displacement and pleural thickening during tidal volume and maximal breathing effort. A number of variables were recorded including vital capacity, airway pressures and arterial blood gases. After pleural fluid drainage, the respiratory rate decreased and tidal volume increased, but haemodynamic parameters and oxygen levels were not significantly affected. Diaphragmatic displacement and thickening significantly increased after drainage. The study suggests that pleural fluid drainage improves diaphragmatic and respiratory function without impacting oxygenation.

ASSESSMENT OF RIGHT VENTRICULAR FUNCTION BY CT VERSUS ECHOCARDIOGRAPHY IN ACUTE PE

This study compared the use of CT versus transthoracic echocardiography (TTE) in identifying right ventricular strain (RVS) in pulmonary embolus (PE) (*Acad Emerg Med* 2017;24:337–43). They compared the diagnosis of RVS on CT (right ventricle to left ventricle ratio >0.9 or interventricular bowing) to the gold standard TTE (right ventricular hypokineses, dilatation or interventricular bowing). One hundred and four patients had both CT and TTE in the study period, 42 (40%) had RVS by TTE and 75 (72%) had RVS by CT. CT and TTE agreed on the presence or absence of RVS in 61 (59%) of cases. Using TTE as a gold standard CT had a sensitivity of 88%, specificity of 39% and positive predictive value of 49% and negative predictive value of 83%. The authors conclude that TTE offers additional positive predictive value when compared with CT alone.

IS CHEST DRAIN POSITION A FACTOR IN RESOLUTION OF PNEUMOTHORAX?

In primary spontaneous pneumothorax (PSP), it is widely agreed that optimal chest tube position should be aiming towards the apex of the pleural cavity. This retrospective study assessed whether chest drain position had any influence in resolution of PSP (Riber *et al*. *J Thorac Dis* 9:327–32). A total of 134 patients with PSP were included, and they were treated with either surgical chest drain or pigtail catheters. The chest X-rays were reviewed and the tube tips were recorded as in the upper, middle or lower third of the pleural space. The time to resolution of the pneumothoraces were compared between the groups. PSP resolution was not influenced by chest tube position, but surgical chest tube use, female sex, age <30 years and size of pneumothorax were all associated with longer resolution time. Interestingly, another study last month also found that large pneumothoraces were a predictor of treatment failure with pigtail catheters (Tsai *et al*. *Sci Rep* 2015;7:181).

Competing interests None declared.

Provenance and peer review Commissioned; internally peer reviewed.

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To cite Soar B. *Thorax* 2017;**72**:586.

Published Online First 3 May 2017

Thorax 2017;**72**:586. doi:10.1136/thoraxjnl-2017-210389