JOURNAL CLUB SUMMARIES

What's hot that the other lot got

Simon Rolin

FIBRINOLYSIS FOR PATIENTS WITH INTERMEDIATE-RISK PE

The use of fibrinolysis for normotensive patients with an intermediate risk of death after acute pulmonary embolism (PE) remains a controversial topic. The PIETHO trial (*N Engl J Med* 2014;370:1402–11) was a multicentre, double-blind trial, in which 1006 patients with acute PE and evidence of right ventricular dysfunction on echocardiography or CT, as well as positive cardiac troponin test, were randomly assigned to initial treatment with tenecteplase plus heparin, or placebo plus heparin. The primary outcome of death or haemodynamic compromise within 7 days of randomisation occurred in 13 of 506 patients (2.6%) in the fibrinolysis group and 28 of 499 patients (5.6%) in the placebo group (p=0.02). Haemodynamic compromise occurred in 25 of 499 patients (5%) in the placebo group. Major bleeding occurred more often in the fibrinolysis group, with 2% of developing haemorrhagic stroke compared to 0.2% of the placebo group. The rate of death from any cause during the first 7 days was low for both groups. This study highlights the importance of careful monitoring of patients with intermediate risk of death from acute PE, and the relative safety of withholding fibrinolysis unless haemodynamic compromise occurs.

LONG-TERM OUTCOMES OF PATIENTS WITH EXTENSIVELY DRUG-RESISTANT TB

This South African study (*Lancet* 2014;383:1230–9) prospectively followed a cohort of 107 patients who had been diagnosed with extensively drug-resistant (XDR) tuberculosis (TB). All were treated as inpatients with a median of eight antimycobacterial drugs. After 24 months of follow-up, 49 patients (46%) had died and 25 (23%) had failed treatment. At 60 months, 78 (73%) had died and 11 (10%) had failed treatment. Only 12 patients (11%) had favourable outcomes (ie, treatment cure or completion). Of the 45 patients that were discharged, 19 (42%) did not achieve sputum culture conversion. Genotypic methods confirmed clustering of cases, and transmission within families containing a patient who had failed treatment on discharge. Independent predictors of survival were net culture conversion and treatment with clofazamine. Patients with HIV coinfection who were taking antiretroviral therapy had significantly lower mortality (24 of 35 (69%)) than those who were not (9 of 9 (100%)). Long-term outcomes of patients with XDR TB in South Africa remain poor irrespective of HIV status.

EFFECTS OF PULMONARY REHABILITATION ON LUNG FUNCTION IN COPD

Pulmonary rehabilitation (PR) has been recognised as an evidence-based effective treatment for COPD. The FIRST study (FEV1 as an Index of Rehabilitation Success over Time) was designed to evaluate the effects of PR on lung function in patients with COPD (*Eur J Phys Rehabil Med* 2014). 257 patients with COPD were enrolled into the study. 190 underwent PR (involving 12 sessions in a 6-week period, repeated every 6 months for a duration of 3 years), and 67 received their standard drug treatment only. After 3 years, the PR group's mean postbronchodilator FEV1 increased from 1240 mL (57.3% predicted value) to 1252.4 mL (60.8% predicted), whereas in the control group's baseline, mean FEV1 was 1367 mL (55% predicted) and 1150 mL (51% predicted) after 3 years. In this study patients with COPD on standard drug therapy, PR significantly affected the expected decline of FEV1 over time.

ATORVASTATIN AS A STABLE TREATMENT IN BRONCHIECTASIS

The pathogenesis of bronchiectasis is poorly understood, but excess neutrophilic airway inflammation has been identified causing damage to the bronchial wall. Evidence has suggested that statins have pleiotropic effects, and could be a potential anti-inflammatory treatment for patients with bronchiectasis. This proof-of-concept randomised controlled trial (*Lancet Respir Med* 2014. doi: 10.1016/S2213-2600(14)70050-5) aimed to establish if atorvastatin could reduce cough in patients with bronchiectasis. 82 patients with clinically significant bronchiectasis attending a secondary-care clinic were randomly allocated to receive either high-dose atorvastatin (80 mg) or a placebo for a 6-month period. The primary endpoint was a reduction in cough from baseline, measured by the Leicester Cough Questionnaire (LCQ) score, with a lower score indicating a more severe cough. From baseline to 6 months, there was a mean improvement of 1.5 units in LCQ score in patients allocated atorvastatin versus −0.7 units in those assigned placebo (mean difference 2.2, 95% CI 0.5 to 3.9; p=0.01). No serious adverse effects were recorded.

RECIPIENT-RELATED CLINICAL RISK FACTORS FOR PRIMARY GRAFT DYSFUNCTION

Primary graft dysfunction (PGD) is the main cause of early morbidity and mortality after lung transplantation. This systematic review and meta-analysis aimed to identify recipient-related clinical risk factors associated with the development of PGD (*PLoS One* 2014;9(3):e92773). 13 studies involving a total of 10 042 patients were included. An increased risk of PGD was significantly associated with female gender (OR 1.38, 95% CI 1.09 to 1.17), African - American (OR 1.82, 95% CI 1.36 to 2.45), idiopathic pulmonary fibrosis (OR 1.78, 95% CI 1.49 to 2.13), sarcoidosis (OR 4.25, 95% CI 1.09 to 16.52), primary pulmonary hypertension (OR 3.73, 95% CI 2.16 to 6.46), BMI >25 (OR 1.83, 95% CI 1.26 to 2.64), and use of cardiopulmonary bypass (OR 2.29, 95% CI 1.43 to 3.65). Age, cystic fibrosis, secondary pulmonary hypertension, intraoperative nitric oxide, single or double lung transplant were not significantly associated with PGD development.

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