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Paper Poster Session

Epidemiology of brain infections

Audit of the management of community acquired *Streptococcus pneumoniae* meningitis and HIV testing in invasive pneumococcal disease (2014-2015)

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Background: *Streptococcus pneumoniae* meningitis is associated with considerable morbidity and mortality in the United Kingdom. The primary aim of this project was to audit the management of community acquired *Streptococcus pneumoniae* meningitis in adults and children against existing guidelines. The secondary aim was to audit the rates of HIV screening in adults with invasive pneumococcal disease (IPD).

Material/methods: A computer database was searched to identify all patients with a final diagnosis of *Streptococcus pneumoniae* meningitis admitted to the Cardiff and Vale University Health Board between the 1st of January 2014 and 30th of September 2015. Eight audit standards were compiled using the current guidelines and patient case notes were reviewed to assess compliance to the set audit standards. Adults with IPD in the same time period were identified and records were reviewed to assess the source of bacteraemia and screening rates for HIV.

Results: 108 episodes of IPD were identified in all patients admitted to our Trust during the audit period. Of these, 10 patients (5 adults, 5 children) met the criteria for community acquired meningitis and were included in the analysis. Mean age in adults with *S.pneumoniae* meningitis was 68 years and in children was 5 years. 90% of patients with *S.pneumoniae* meningitis were assessed within 1 hour of hospital admission. All patients had blood cultures taken on admission, in 90% of the cases, before administration of antibiotics. 70% of patients had positive blood cultures with *S.pneumoniae*. A lumbar puncture was performed in all patients, although in some cases it had to be delayed due to contraindications. 30% of cases were CSF culture positive and 100% of cases were CSF PCR positive. In 80% of cases, antibiotics were administered within 180 minutes of hospital admission. Empirical antibiotic prescription rates met the Trust guidelines in 80% of cases. The mode duration of antibiotics was 14 days. Steroids were administered in 67% of cases, but they were administered with or before the first dose of antibiotics in only 30% of cases. Of the 108 episodes of IPD, 83 episodes were in adults. Of these 83 episodes, pneumonia was the commonest cause of IPD (58% cases), followed by bacteraemia of unknown source (23%). Of the 83 adults with IPD, only 29 (35%) were tested for HIV. 64% of adults (53 patients) were untested following their episode of IPD and 1 patient was known to be HIV positive.

Conclusions: In this audit of the management of community acquired *S.pneumoniae* meningitis, majority of the patients were assessed promptly and had the appropriate investigations performed. Areas for improvement are empirical antibiotic prescription and early administration of steroids. This audit highlights a greater need for HIV screening in patients with IPD.