

27<sup>th</sup> **ECCMID**

**Vienna, Austria**  
22 – 25 April 2017

The congress of  ESCMID

Session: P091 Clinical epidemiology of viral infections

**Category: 1g. Diagnostic virology (other than hepatitis & HIV)**

25 April 2017, 12:30 - 13:30  
P1912

**Incidence and healthcare costs of viral meningitis in adults - a multi-centre prospective observational study in England**

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**Incidence and healthcare costs of viral meningitis in adults – a multicentre prospective observational study in England**

**Background:** As bacterial meningitis decreases in incidence, viruses are becoming relatively more important as a cause of meningitis. The incidence, aetiology and costs of viral meningitis in UK adults are unknown. Knowing the burden of viral meningitis can help guide clinical care, direct research policy and identify areas where savings can be made.

**Material/methods:** An epidemiological study of adults with suspected meningitis, in the Northwest of England was nested within a national multicentre prospective cohort study, carried out in 41 hospitals, between 2011 and 2014. We estimated incidence and healthcare costs using patient level data from the Northwest of England, and extrapolated to estimate resource use throughout the UK.

**Results:** Among 1117 patients enrolled, 638 (57%) had meningitis. 231/638 (36%) had viral meningitis, 99/638 (16%) bacterial and 267/638 (42%) unknown aetiology. The remaining patients had other causes of meningitis. Estimated annual incidences of viral and bacterial meningitis were 2.73 and 1.24 per 100,000 respectively. The yearly healthcare cost of viral and bacterial meningitis were similar: £3,220,343 (95% CI £1,206,963 – £4,418,424) and £4,860,218 (95% CI £3,728,598 – £6,358,419) respectively,  $p=0.57$ . The median length of stay for patients with viral meningitis was 4 days, increasing to 8 days in those treated with antivirals, which are yet to be proven beneficial. Hospitalisation accounted for 79% of the healthcare cost representing the largest potential area for cost-cutting.

**Conclusions:** Viral meningitis is the predominant cause of meningitis in adults in the UK. The total annual healthcare costs could be reduced by earlier discharge. This might be achieved through speedier diagnostics and avoiding unnecessary treatments.