

and 4/28 (14.3%) referred for oxygen assessment. 33.3% of eligible patients were referred to pulmonary rehabilitation. 77.5% required and were provided with a written educational pack, and a formal crisis management plan formulated for 49.3% cases. Inhaler technique was inadequate in 10.2% of patients and in part drove the prescribing changes.

Conclusion Using computer guiding consultation in real life practice resulted in substantial management recommendations and diagnostic revisions. COPD care can be improved, using computer guided consultation which enables non specialists to achieve it.

Paediatric airway infections

S72 PAEDIATRIC PNEUMOCOCCAL EMPYEMA SEROTYPES HAVE NOT CHANGED FOLLOWING INTRODUCTION OF THE 13 VALENT PNEUMOCOCCAL VACCINE

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Introduction Pneumococcal infection is the leading cause of paediatric empyema in the UK. Prior to the change in the UK routine vaccination schedule from the seven valent conjugate pneumococcal vaccine (PCV-7) to the thirteen valent vaccine (PCV-13) in April 2010 four serotypes /serogroups—1, 3, 7A/F and 19A accounted for 75% of culture negative pneumococcal empyema in UK children. Antigen for these four serotypes is not present in PCV-7 but is present in PCV-13. We examined the impact of PCV-13 on the incidence of disease due to serotypes 1, 3, 7A/F and 19A using national surveillance data from the UK-ESPE study.

Methods Pleural fluid samples were forwarded from admitting hospitals. Those that were pneumococcal PCR positive underwent non-culture serotyping using a multiplex antigen detection assay capable of detecting 14 serotypes/groups (1, 3, 4, 5, 6A/C, 6B, 7F/A, 8, 9V, 14, 18, 19A, 19F and 23F). Two time periods were analysed April 2008–April 2010 (PCV-7 era) and April 2010–April 2012 (PCV-13 era). Incidence rate ratios (IRR) were calculated for individual serotypes. Age distributions were compared by density plotting.

Results 380 samples (median age 3.8 years) were tested in the two time periods (191 PCV-7 era, 189 PCV-13 era). No reduction in the incidence of empyema caused by the four main serotypes/groups (IRR: Serotype 1–0.79 95% CI (0.57–1.11), 3–0.91 (0.60–1.37), 7A/F–1.59 (0.85–3.04), 19A–2.42 (1.61–5.40)) was seen and 19A increased significantly. The age distribution of each serotype did not change between the two time periods.

Discussion The introduction of PCV-13 has not yet been associated with any reduction in the incidence of vaccine serotype pneumococcal empyema in children in the UK, in contrast to the changes following the introduction of PCV-7. The factors contributing to this remain unclear but may include a predominantly PCV-7 vaccinated cohort, insufficient herd immunity, inadequate

immunological response to vaccine antigen or on-going secular trends. Continuing surveillance is essential and will provide important data on future trends to better understand these complex processes.

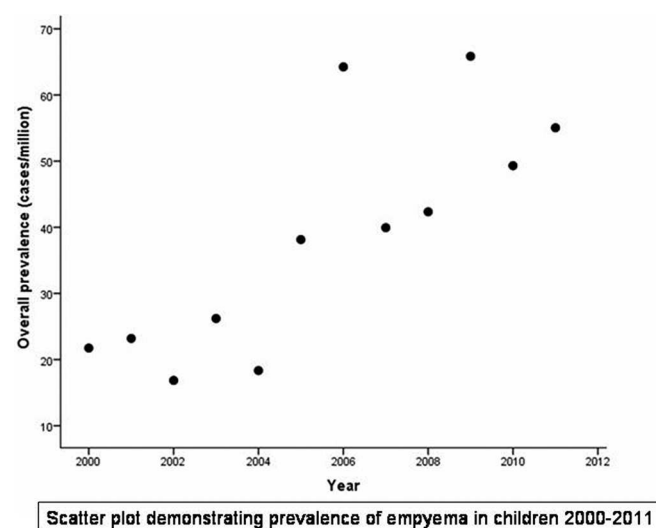
S73 TRENDS IN EMPYEMA IN SCOTTISH CHILDREN 2000–2011

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Background An abrupt rise in empyema prevalence in children was noted in the UK and other countries during the late 1990s and early 2000s. Time trends in empyema prevalence in Scotland has not been described since 2005 at a time when prevalence appeared to be still rising¹. A number of factors may have changed empyema prevalence since 2005 including the 2006 smoking ban and introduction of heptavalent (2006) and 13-valent (2010) pneumococcal vaccinations. Here we applied our previous methodology¹ to test the hypothesis that the prevalence of childhood empyema continues to rise beyond 2005.

Methods This was a whole population study of 2000–2011 hospital admissions using ICD-10 diagnostic codes. As previously we captured admissions for pneumonia and croup to detect increasing prevalence of admissions with other respiratory presentations.



Abstract S73 Figure 1.

Results Over this 12 year period there were 398 cases of empyema. The prevalence rose from 22cases/million in 2000 to 55 cases/million in 2011 (see figure), equivalent to a rise of 4 cases/million/year ($R^2 = 0.81$ $p = 0.002$). Within the 1–4 year age range, empyema prevalence rose by 10 cases/million/year ($R^2 = 0.86$ $p < 0.001$) whilst prevalence did not change for the under 1 and 10–14 year old age range. The prevalence of croup and pneumonia for did not change during 2000–2011 suggesting that increased empyema prevalence did not reflect increasing respiratory admissions or increasing pneumonia prevalence.

Conclusion The prevalence of empyema in Scottish children has continued to rise beyond 2005 and the reason for this is not clear. Public health initiatives introduced since 2005 do not appear to have altered empyema prevalence in children.