



2009/10 Paediatric Pneumonia Audit Summary Report

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Following publication of the 2002 BTS Paediatric Pneumonia Guidelines, a national audit has stuttered into life over a few years and in 2009/10 recorded data on 891 admissions from 27 institutions – sufficient for a meaningful comment. The case definition is a clinical diagnosis of pneumonia in a child greater than 6 months of age.

The great majority of children admitted were under the age of 5 years (figure 1) and 29% had received an antibiotic before admission for a median of four days.

On admission 39% were hypoxaemic (oxygen saturation less than 92% in air) and 65% of those under the age of 1 year and 30% over the age of 1 year had a respiratory rate greater than 50 breaths per minute. Intercostal recession was noted in 51% of those admitted and 9% were grunting. A high fever exceeding 39 degrees centigrade was noted in 38% of children and wheezing was recorded in 32% of those under the age of 5 years and 28% of those older than 5 years.

The 2002 guidelines recommend blood cultures in all and nasopharyngeal aspirates in those under the age of 2. In practice 54% of children admitted had blood cultures done and 21%, a nasopharyngeal aspirate. In addition 10.4% of children had blood taken for acute serology but only 0.2% had both acute and convalescent serology performed. These investigations revealed a causative organism in 149 children with the commonest being respiratory syncytial virus found in 52, followed by Strep pneumonia identified in 32 children, and in 10 children influenza H1N1

was the responsible organism. All children had a chest x-ray performed and it was abnormal in 85% with lobar consolidation identified in 47% of cases.

The general management of these children reflected their clinical condition with 48% receiving oxygen therapy and 35% bronchodilators. Rather surprisingly 29% had intravenous fluids and 4% nasogastric fluids. The 2002 guideline indicates that chest physiotherapy is not beneficial in pneumonia but 15% of children nevertheless received physiotherapy. 3% of children were sufficiently unwell to require assisted ventilation.

Nearly all children were treated with antibiotics (97%). A large variety of antibiotics were prescribed but the most common at any age group was Augmentin with 324 prescriptions (29.7%) in children under the age of 5 and 139 children (25.5%) of those over the age of 5. This was closely followed by Amoxicillin prescribed in 230 children (21.1%) under the age of 5 and 83 children (15.2%) over the age of 5. There were 220 prescriptions of Macrolide in children under the age of 5 years (20.2%) and 127 prescriptions (23.4%) in children over the age of 5 years. The 2002 guidelines suggested that Amoxicillin was the first choice for overall antibiotic therapy in children under the age of 5

and at any age Strep pneumonia was thought to be the most likely pathogen. It is clear that many children received more than one antibiotic and the data has not been analysed

separately to see the proportion of children who received oral antibiotics only.

Of all the children admitted to hospital some 13% also had asthma and 20% another co-morbidity. A great majority of children however responded to treatment very quickly and were in hospital for less than 3 days (figure 2). Complications occurred in 9% of children, the most common being empyema (7%). Despite having an illness which responded rapidly to treatment some 36% of children were seen at hospital for follow-up. The 2002 guidelines suggest that follow-up of chest x-rays are only required for children with lobar collapse or an apparent round pneumonia. In this audit some 15% children had a chest x-ray at follow-up which is likely to be substantially more than those recommended in the guideline.

This 2009 paediatric pneumonia audit gives an interesting perspective on how children are currently managed for pneumonia in hospital. The vast majority seem to be treated appropriately and recover promptly from their illness. The BTS audit system allows individual units to compare themselves with their colleagues around the country as well as with the features of the guideline. There are clearly some areas where there could be improvement which would both be of benefit to children and to the cost of providing their care in hospital.

The paediatric pneumonia guidelines are currently under revision and the new version should be published in 2011. An amended paediatric audit form will be available for the 2011 audit round.

