

Asthma and pneumonia among under-fives with acute respiratory symptoms in Mulago hospital, Uganda: is asthma under-diagnosed?

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Background: Pneumonia is considered the major cause of morbidity and mortality among under-fives with acute respiratory disease in low-income countries but may be over-diagnosed at the cost of under-diagnosing asthma. We report the magnitude of asthma and pneumonia among under-fives based on stringent clinical criteria. We also describe the treatment for children with acute respiratory symptoms in Mulago hospital Uganda.

Methods: We enrolled 614 children aged 2-59 months with cough and difficulty in breathing at the pediatric emergency unit of Mulago National Referral, Uganda. Interviews, physical examination, blood and radiological investigations were done. Three pediatricians with expertise in pulmonology reviewed each participant's case report post hoc and made a diagnosis according to the study criteria. Children with asthma or bronchiolitis were collectively referred to as "asthma syndrome" due to challenges of differentiating the two conditions in young children.

Results: Of the 614 children, 253 (41.2%) had asthma syndrome, 167 (27.2%) had bacterial pneumonia, 163 (26.5%) had viral pneumonia, while 31 (5.1%) had other diagnoses including pulmonary tuberculosis. Of the children with asthma syndrome, 50 (19.8%) had bacterial pneumonia as well. Only 9.5% of the children with asthma syndrome had been previously diagnosed as asthma. The majority (82.3%) of the children with asthma syndrome were less than 12 months old. Of the 253 children with asthma syndrome, 95.3% had a prescription for antibiotics and 87.7% for bronchodilators. However, of these, 19.8% had bacterial pneumonia and their antibiotic prescriptions were justified.

Conclusion: Overall, 41.2% of the children had asthma syndrome. Although previous reports indicate that acute respiratory symptoms in under-fives' are predominantly due to pneumonia, asthma syndrome also contributes a significant proportion. Antibiotics are used irrationally

due to mis-diagnosis of asthma as pneumonia. There is need to design better diagnostic tools for asthma and pneumonia among under-fives' in Uganda.

Key words: *asthma, pneumonia, magnitude, under-fives, low-income countries*