



Asthma and pneumonia among under-fives at Mulago National Referral hospital Uganda: Is asthma under-diagnosed?

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Introduction

- Pneumonia is a major cause of under-five morbidity and mortality in low-income countries
- In Uganda, pneumonia is;
 - 3rd among causes of ill health among U-5's
 - Most common cause of childhood deaths
- However, it is over-diagnosed at the cost of under-diagnosing asthma

Introduction

- Over-diagnosis of asthma has been documented in low-income countries. E.g.
 - India – 54% of U-5's with WHO-defined pneumonia were found to have asthma (Sachdev et.al 2001)
 - Haiti – 79% of children with recurrent pneumonia were later diagnosed as asthma (Heffelfinger et.al)
 - In Uganda, prevalence of doctor-diagnosed asthma among under-fives was 6.1% (Christensen K K.2010)

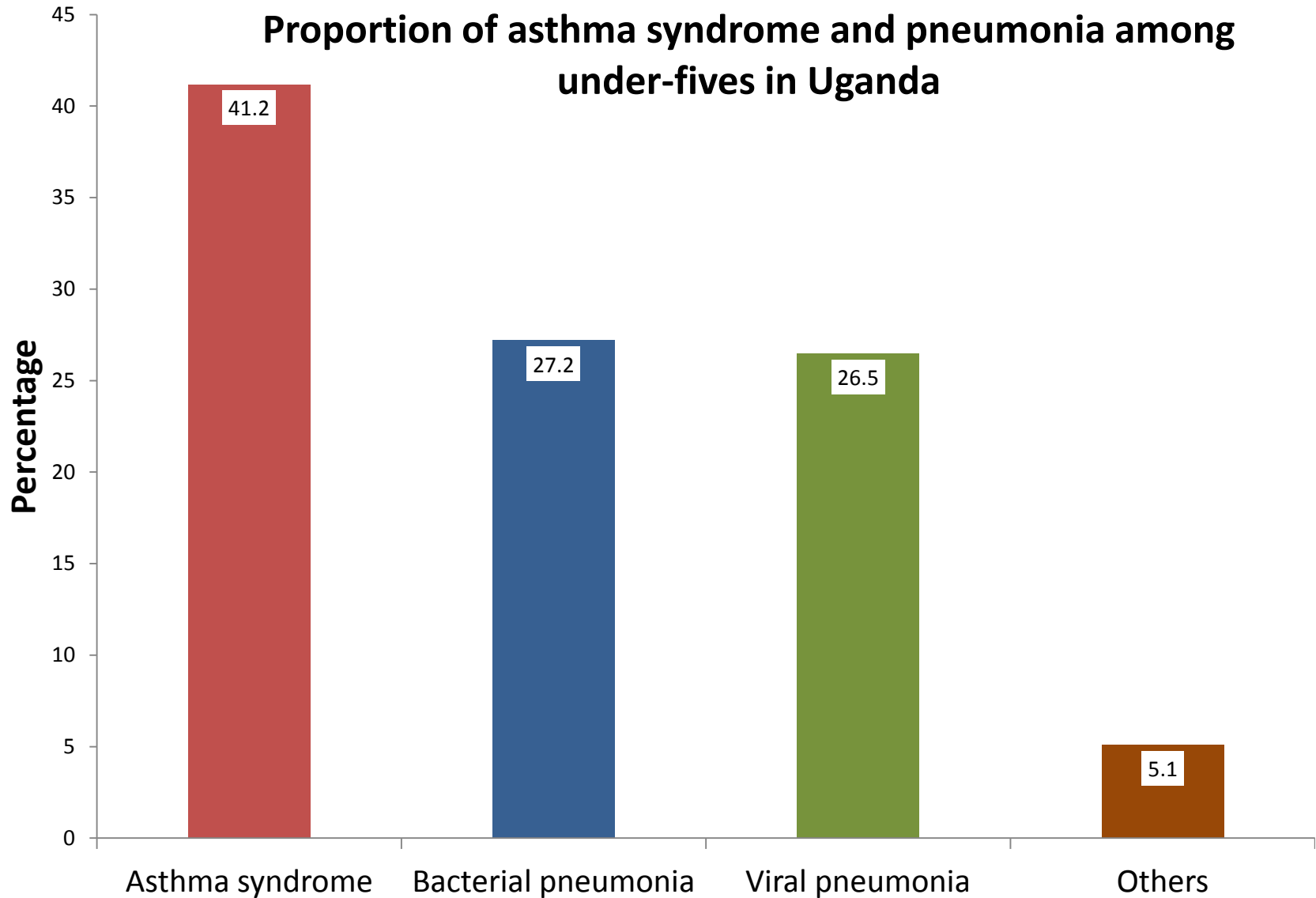
Objectives

- To determine the magnitude of asthma and pneumonia among under-fives based on stringent clinical criteria
- To describe the treatment for children with acute respiratory symptoms in Mulago hospital Uganda

Methods

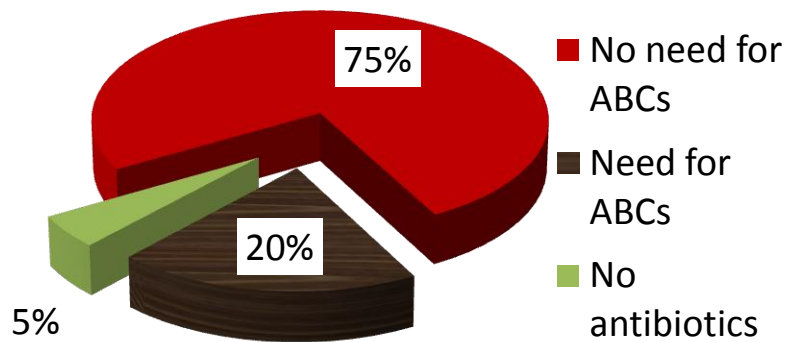
- Cross sectional - 614 children aged 2-59 months in Mulago hospital
- Enrolled children with cough and/or difficulty breathing , and fast breathing
 - Questionnaire focusing on clinical history
 - Physical examination
 - Investigations : WBC, CRP, blood culture, NPS for RSV and , CXR
 - Response to bronchodilators
 - Chart review for doctors' prescription
- The chest x-rays were read by two independent radiologists
- Three (3) paediatricians discussed the case reports post hoc and made a diagnosis guided by the case definitions

Results

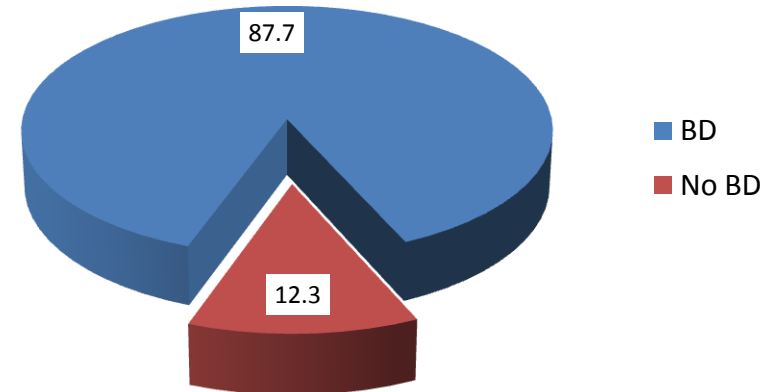


Treatment for children with asthma syndrome

Antibiotics



Bronchodilators



Discussion

Asthma prevalence and management

- High proportion of children with asthma syndrome (41.2%)
- Irrational medicine use
- Criteria used to define asthma was quite exhaustive
- Unclear/unspecific case definitions and concepts for asthma
- Little emphasis on asthma as a cause of acute respiratory symptoms among U-5's in current guidelines
- Lack of diagnostic gold standards for asthma and pneumonia

Pneumonia

- Pneumonia prevalence was 53.7% of the children
 - About 50% had viral pneumonia
- All children with pneumonia had antibiotic prescriptions
- **Implications**
 - Bacterial pneumonia is over-diagnosed
 - Viral infections cause a significant proportion of severe pneumonia
- Studies on viral pneumonia (magnitude, spectrum of viruses, outcome of children with viral pneumonia).

Key messages

- High magnitude of asthma syndrome among under-fives in Uganda
- Largely under-diagnosed
- Pneumonia, particularly bacterial pneumonia is over-diagnosed
- Irrational medicine use in children with acute respiratory diseases
- Over-diagnosis of pneumonia and under-diagnosis of asthma may be contributing to preventable respiratory morbidity and mortality

What next?

- Explore reasons for under-diagnosis of asthma.
- Develop diagnostic algorithms to distinguish asthma and pneumonia

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