Characteristics and management of febrile children with a lower respiratory tract infection presenting to a paediatric emergency department

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Introduction

30% all paediatric emergency department (PED) visits to the Great North Children's Hospital (GNCH) Newcastle upon Tyne, UK are for **fever**. GNCH has 30,000 PED visits per year. Lower respiratory tract infection (LRTI) is a common cause for admission. Differentiating between a self-limiting viral infection and a 2^o bacterial pneumonia can be challenging.

Study Aim:

To describe the characteristics of children presenting to a tertiary children's hospital with fever and a LRTI.

Methods

A retrospective patient record review. Inclusion criteria were:

- Age 0-17 years;
- Visit between April – December 2017
- (History of) fever (≥ 38.0)
- Lower respiratory tract infection as discharge diagnosis

Results

- 14,797 children presented to ED.
- 2,851 (19.3%) with fever and
- 414 (14.5%) of these had LRTI.

Mean age was 33 months, 27% had co-morbidity, 43% sought prior medical attention and 14% already had antibiotics.

Trigger Tools

NICE sepsis guidelines

Abnormal observations trigger 'Red or amber flags'
302 (72.9%) children triggered any flag
243 (58.7%) children triggered a high risk or 'Red flag'
But only 69 (17%) were admitted ≥ 24 hours.

Paediatric early warning System (PEWS)

13/116 (3.1%) had a high PEWS score, 1 was admitted ≥ 24 hours.

Diagnostics

116 (28.0%) children had chest X-rays (CXR)

Diagnosis and treatment by diagnosis

Data presented as percentage of patients

Empiric antibiotic choice for LRTI in PED

Do diagnostic tests change management?

- 101(87.1%) children with CXR received antibiotics
- *BUT* 22 (78,6%) children with normal CXR still received antibiotics
- 64 (15.5%) had blood tests.
- 58 (92.1%) children with blood tests received antibiotics

Treatment

227 children (55.1%) received antibiotics and 156 children (37.7%) received bronchodilators.

Conclusion:

Children with fever and LRTI present a significant burden of care for PED.

- Too many children underwent unnecessary diagnostic tests
- CXR in particular did not alter the course of management
- Antibiotics were frequently prescribed

There is potential to reduce investigations and antibiotic prescribing in this group, thus improving antibiotic stewardship, reducing morbidity and making cost savings in community acquired lower respiratory tract infection.