paediatric WATCH

Lessons from the frontline

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All that wheezes is not asthma…

A 7-year-old girl presented to ED with reduced oral intake, cough and increased respiratory rate. She was prescribed antibiotics and asked to return if her mother had any concerns.

She re-presented the following evening to another facility with fever and cough. On arrival she was in acute respiratory distress, with severe wheezing and was given a triage category 2. It was reported she had had blood stained sputum for one day.

The reviewing clinician noted that the patient was afebrile, wheezing, grunting, tachycardic and tachypnoeic with a SpO_2 of 85% in room air. There was a family history of asthma, and this was the first presentation of its kind for the patient.

Inhaled salbutamol and humidified high flow nasal prong oxygen was commenced, and a request for transfer to the closest level 4 paediatric hospital was made. A chest X-ray (CXR) was performed suggesting widespread pneumonia.

At approximately 2230 hrs, the treating team discussed these results via telephone with NETS. A NETS team was dispatched, however, there was an estimated time of arrival to the facility of approximately 4 hours.

Despite increasing the inhaled salbutamol and oxygen therapy, the patient continued to deteriorate and a dose of IV ceftriaxone was prescribed.

This was administered via an intraosseous route as intravenous access had failed. A second CXR was ordered which showed a significantly enlarged heart which was also abnormal in shape.

Paediatric Watch – lessons from the frontline: All that wheezes is not asthma… 2018 © Clinical Excellence Commission. SHPN (CEC) 180355.

NETS arrived shortly after midnight and assessed the patient as exhibiting signs of pulmonary oedema. Not long after NETS arrival, the patient significantly deteriorated with a loss of cardiac output requiring cardiopulmonary resuscitation (CPR). Despite their efforts and after mutual agreement between the clinicians and the family, it was decided to cease resuscitation and the patient was pronounced deceased at approximately 0200 hrs.

Investigation

It was identified that the patient did not have a history of asthma which had been communicated to clinicians involved in her care. It is possible this may have led to diagnostic anchoring of asthma or a respiratory infection.

The initial CXR showed enlargement of her heart, pulmonary oedema and consolidation on the left side.

The patient's blood stained sputum had not been communicated to NETS and the two critical signs of heart failure from acute rheumatic fever - a new systolic murmur and hepatomegaly - were not identified by the clinician managing her care.

Lessons Learned

In 2016-2017, there were 10 RCAs (18 SAC2 incidents) where the Principle Incident Type was classified as *diagnosis; missed, delayed or wrong*. Cognitive bias was identified in 9 of these RCAs. In all paediatric RCAs over this period, 1 in 4 involved diagnostic error, while cognitive-based errors (bias) was identified in over half of these RCAs.

Shortness of breath or tachypnoea can be from a pulmonary, cardiac, metabolic or combined cause. Consider all features of the presentation - clinical and investigations - when forming a provisional diagnosis, and ensure that the treatment has the expected outcome.

Continuing to re-evaluate. 'All that wheezes is not asthma'.

What can we do to overcome cognitive bias?

There were multiple examples of cognitive bias involved in this case. The following simple strategies can be used to reduce the risk of diagnostic error:

- Write down a differential diagnoses
- When reviewing a deteriorating patient, or a patient with concerning features, pause to check if your working diagnosis is correct
- When something isn't quite right, think again about your diagnosis
- When someone else is worried about your patient, think again about what could be going on
- When you are stressed, are finding the interaction with the patient difficult, or are hungry, angry, late or tired, pause to check if your working diagnosis could be wrong
- At handover, make it clear when you have uncertainty about your diagnosis
- Ask for senior input to help review your clinical decision-making

The *Red Team* / *Blue Team Challenge* is a useful tool to safely question and challenge the diagnostic decision making within the team environment. It aims to remove hierarchy, ensuring all clinicians have an equal voice and are able to share within a supported environment. The CEC's *Take 2 - think, do* is another useful resource to support accurate diagnostic decision making.

For information on the *Red Team / Blue Team Challenge* or additional resources on diagnostic error, visit:

http://www.cec.health.nsw.gov.au/quality-improvement/people-and-culture/diagnostic-error/quality-care

Want to learn more? Please visit our website:

www.cec.health.nsw.gov.au

The Paediatric Patient Safety Program works across a range of areas to improve the quality and safety of health care for children and young people in NSW.

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