



Sepsis: Detect Early – Could this be sepsis?

Our Patient Story

Sarah, aged 3 years, was brought by her mother to the Emergency Department (ED) of a rural hospital with fever, vomiting, and lethargy. She had prior upper respiratory tract infection symptoms for a week, and had presented to the GP two days previously with a sore elbow.

In ED, Sarah was lethargic, febrile (T 38.7°), tachycardic (HR 165/min), and she refused to move her elbow which was red and swollen. She was given paracetamol and observed. After 30 minutes her temperature was 37.9° and she was quietly watching TV. An x-ray did not reveal a fracture, and discharge home was suggested but Sarah's mother refused, insisting Sarah was "not right."

The regional hospital paediatrician on-call was consulted by telemedicine. Sarah's BP was 78/42 (low for age) and a full set of observations revealed a Child Early Warning Tool (CEWT) score of 3. The paediatrician was concerned about septic arthritis and recommended blood culture collection, intravenous antibiotics, and retrieval to the regional hospital. Retrieval Services Queensland (RSQ) was contacted to arrange the transfer.

The duty doctor collected the blood culture, but was unable to insert an IV cannula. A follow up CEWT score rose to 5. RSQ was contacted again to access support from the paediatric medical coordinator. IM ceftriaxone was recommended to be given immediately, followed by a further attempt at an IV cannula, and

a venous blood gas. Intra-osseous needle placement was discussed in case of IV cannulation failure.

The next IV cannula attempt was successful, and the lactate was elevated at 4.9. Antibiotic cover was broadened to include flucloxacillin. An hour later while awaiting retrieval, Sarah's CEWT score rose to 7 – her fever had increased to 39.6°, and her skin appeared mottled and pale. RSQ was contacted, telemedicine was used again, and the paediatric medical coordinator advised a fluid bolus of normal saline 20ml/kg.

When the retrieval team arrived, Sarah's CEWT was still 7. Her lactate remained elevated. A second IV cannula was inserted, a further fluid bolus of normal saline 20ml/kg was given and a peripheral adrenaline infusion was commenced. Oxygen by mask was administered and Sarah remained stable during the flight to the regional centre.

Sarah underwent a washout of her infected joint under anaesthesia and spent 10 days in hospital, recovering from severe Group A Streptococcal Sepsis.

QPQC Review

The Queensland Paediatric Quality Council recently completed a review of all serious clinical incidents between 2012 and 2014 involving children under 18 years of age in Queensland.

Children with a diagnosis of SEPSIS made up 24% of these cases with 91% resulting in the death of a child.

Lessons learnt

1 Focus on early detection of sepsis

Sepsis must be considered early. If it can't be ruled out, it must be treated.

2 In early sepsis the child may not look seriously unwell

Pay attention to children who are vulnerable to sepsis (infants, young children, those with co-morbidities, children from Aboriginal or Torres Strait Islander backgrounds). A raised plasma lactate may help identify children in early sepsis.

3 Listen to family and patient concerns

In our series, patients and families often re-presented with concerns about progression despite assurances at previous visits and despite receiving treatment.

4 Seek early advice

Contact a senior consultant in General Paediatrics, Paediatric Emergency or Paediatric Intensive Care, regardless of the time of day. The advice should be face to face or via telemedicine so that the consultant can be given the opportunity to review the child directly.

5 Use the CEWT tool correctly

Complete all the observations, calculate the score accurately, escalate your response as indicated by the score, repeat observations and score frequently.

6 The Queensland Health Paediatric Sepsis Pathway is being finalised

QPQC encourages clinicians and sites to participate in the Queensland Health Statewide Paediatric Sepsis Collaborative which aims to improve early recognition and treatment of paediatric sepsis using standardised best practice pathway.

For further information email QPQC@health.qld.gov.au or visit www.childrens.health.qld.gov.au/chq/health-professionals/qpqc

Useful links

Clinical Excellence Division - RESIST Sepsis Program
Stopping Sepsis: A National Action Plan
Statewide Paediatric Sepsis Collaborative Email

Retrieval Services Queensland
NSW Sepsis Kills Program
Children's Health Queensland Retrieval Service (CHQRS)