Pharmacists: Key Players in Paediatric Sepsis Management

Did you know?

- **2,000** children each year develop sepsis in the UK[1]
- **40%** of survivors are estimated to suffer physical, cognitive, and/or psychological after effects[1]
- **5** people die with sepsis every hour in the UK[1]

As a pharmacist, your role is pivotal in identifying and addressing sepsis in children. Here's what you need to know:

Understanding Sepsis: Sepsis is a life-threatening condition triggered by an exaggerated immune response to infection, causing widespread inflammation and organ damage.[2,3] It can arise from bacterial, viral, or fungal infections, and progresses rapidly, making early recognition and treatment critical, especially in paediatric patients.[2,3]

Symptoms of Sepsis:
Sepsis always starts with an infection, and can be triggered by any infection including chest infections and UTIs. Paediatric patients often present with nonspecific symptoms, potentially resulting in delayed or inappropriate treatment.[2,3] In neonates and infants the symptoms of sepsis may be more subtle and nonspecific, making diagnosis challenging. You should maintain a high index of suspicion for sepsis when dispensing medications or providing counselling to parents. Early recognition and intervention are critical in improving outcomes.

Symptoms in babies and very young children include:

- **mottled, bluish, or pale skin**[1-3]
- **non-blanching rash**[1-3], which does not fade when pressure is applied
- **breathing difficulties**, either increased respiratory rate[1,2,3] or respiratory distress[2,3]
- **unusual crying or behaviour**[3], such as a weak, high-pitched cry[3] or disinterest in feeding[1-3]
- **confusion, disorientation** or **drowsiness**[2,3]
- **persistent vomiting**[1-3]
- **reduced urine output**[1-3]
- **fitting** or **convulsions**[1,2]
- **extreme temperature**[1-3]: fever is a common symptom of sepsis, but paediatric patients may also present with hypothermia[2]
- **swelling or pain** around a wound[2,3]

Symptoms in older children include

- **mottled, bluish, or pale skin**[1-3]
- **non-blanching rash**[1-3]
- **confusion, disorientation** or **drowsiness**[2,3]
- **breathing difficulties**, either increased respiratory rate[1-3] or respiratory distress[2,3]
- **reduced urine output**[2,3]
- **fitting** or **convulsions**[1,2]
- **extreme temperature**[1,2]
- **swelling or pain** around a wound[2,3]

They may not have all these symptoms.

Cue for Pharmacists: Be alert if you hear caregivers mentioning symptoms like “my child has a fever and is unusually drowsy”, “my child's skin looks mottled or bluish” or “my child is breathing very fast or has difficulty breathing (such as a grunting noises or their stomach sucking under their ribcage)”. Reports of a baby or child under 5 years old who is not feeding, vomiting repeatedly or hasn’t had a wee or wet nappy for 12 hours should also raise suspicion for sepsis and prompt further evaluation.

Pharmacists' Role in Combatting Sepsis: A 2023 study found that for 18% of child deaths due to sepsis, there were contributory issues suggesting the HCPs hadn’t recognised sepsis or acted quickly enough[4]. Pharmacists, as accessible healthcare professionals, have a **pivotal role** in early recognition and intervention.

Time Matters:

- **Act swiftly**: Time is of the essence in treating sepsis.[2,3] Delayed recognition and treatment can lead to severe complications or even death.[2,3]
- **Refer urgently**: If you suspect sepsis, advise parents to seek immediate medical attention – call 999 or go to A&E immediately.

Treatment for Sepsis: Urgent hospital referral for intensive antibiotic treatment.[2,3] Admission to ICU, ventilation or surgery may also be required.[2,3]

Pharmacists' Day-to-Day Actions:

- **Symptom assessment:** Actively assess symptoms suggestive of sepsis, such as a non-blanching rash, not feeding, extreme temperatures, vomiting or reduced urine output, during consultations. Be aware that symptoms of sepsis can vary with age and may be non-specific.
- **Communication and referral:** Guide caregivers to seek immediate medical help if sepsis is suspected, facilitating timely referrals for improved outcomes.
- **Continuing professional development:** Stay updated on sepsis management guidelines and advancements to effectively identify and respond to cases.

By incorporating these actions, you can contribute to early sepsis detection, potentially saving lives and reducing its impact on children.

Where to Get More Information on Sepsis: To learn more about recognising and responding to sepsis in children, visit the NHS Symptoms of Sepsis page or the UK Sepsis Trust page.
Sepsis. Spot it. Treat it. Beat it.

References:

1. UK Sepsis Trust page
2. Sepsis-Manual-Sixth-Edition.pdf (sepsistrust.org)
3. Symptoms of sepsis - NHS (www.nhs.uk)
4. Infection related deaths of children and young people in England National Child Mortality Database Programme Thematic Report Data from April 2019 to March 2022 Published December 2023. Available at Infection-related-deaths-of-children-and-young-people-in-England.pdf (ncmd.info)

Pharmacists: Key Players in Paediatric Meningitis Management

Did you know?

- Over 4,000 children each year develop meningitis in the UK[1]
- Meningitis affects more than 2.5 million people global each year, of this:
    - 1/10 adults/children die from meningitis [2]
    - 2/10 are left with an impairment[2]

As a pharmacist, your role is pivotal in identifying and addressing meningitis in children. Here's what you need to know:

Understanding Meningitis: Meningitis is an infection of the protective membranes surrounding the brain and spinal cord (meninges).[2–4] It can be caused by bacteria or viruses, and early detection can be critical to prevent severe complications. [2–4]

Symptoms of Meningitis: Meningitis can affect anyone, but is most common in babies, young children, teenagers and young adults.[2–4] Paediatric patients often present with nonspecific symptoms, potentially resulting in delayed or inappropriate treatment. Additionally, infants may not exhibit classic signs such as headache and neck stiffness. Symptoms of meningitis can appear in any order, and some may not appear at all. You should maintain a high index of suspicion for meningitis when dispensing medications or providing counselling to parents, and the NICE clinical meningitis guideline actively encourages clinicians to take parents' concerns seriously.[5] Early recognition and intervention are critical in improving outcomes for patients with meningitis.

- **fever,** often accompanied by **chills** [2–4]
- **persistent vomiting**[2–4]
- change in their child's behaviour, such as **confusion or irritability**[2,3]
- **severe headaches**[2–4]
- While less common in young children, older children may have a **stiff neck**[2–4] or **photophobia**[2,3]
- **drowsiness**, **unresponsiveness** or **confusion**[2–4]
- **seizures** (fits)[2,3]
- a **non-blanching rash**[2,3] which does not fade under pressure, However, this rash may not be present, or may be blanching in the early stages.[2]
- muscle and joint pain
- pale, mottled or blotchy skin (this may be harder to see on brown or black skin)

In babies, pharmacists might observe additional symptoms such as:

- **unusual crying or behaviour**, such as weak, high-pitched or continuous crying or disinterest in feeding[2,3].
- **lethargy**[2,3]
- **stiff body or floppiness**[2,3]
- a **bulging fontanelle**[2,3]

Cue for Pharmacists: Be alert if you hear caregivers mentioning symptoms such as "my child has a severe headache accompanied by a stiff neck", "my child has a high fever and is extremely irritable or lethargic" or "my child is experiencing nausea and vomiting along with sensitivity to light." These phrases should raise suspicion for meningitis and warrant further assessment.

Pharmacists' Role in Combatting Meningitis: A 2018 study found that 30% of babies with bacterial meningitis received inappropriate early treatment which delayed parents seeking further help.[6] Pharmacists, as accessible healthcare professionals, have a **vital role** in early recognition and intervention.

Time Matters:

- **Act swiftly**: Meningitis is potentially fatal within 24 hours and requires urgent medical attention.[2–4] Every minute counts.
- **Refer urgently**: If you suspect meningitis, advise parents to seek immediate medical attention – call 999 or go to A&E immediately.

Treatment for Meningitis: Treatments include IV antibiotics or fluids, oxygen or steroids.[2-4] One in 5 people surviving bacterial meningitis may have severe complications[4]

Meningitis Vaccination: Explain to parents that immunisation is the best way to combat and provide protection against most forms of bacterial meningitis. [2–4]

Pharmacists' Day-to-Day Actions:

- **Symptom Assessment:** Actively assess symptoms suggestive of meningitis, such as fever, severe headache, neck stiffness, rash, photophobia, or altered mental status, during consultations. Be aware that symptoms of meningitis can vary with age and may be non-specific.
- **Communication and Referral:** Guide caregivers to seek immediate medical help if meningitis is suspected, facilitating timely referrals for improved outcomes.
- **Continuing Professional Development:** Stay updated on meningitis management guidelines and advancements to effectively identify and respond to cases.

By incorporating these actions, you can contribute to early meningitis detection, potentially saving lives and reducing its impact on children.

Where to Get More Information on Meningitis: To learn more about recognising and responding to meningitis in children, visit the NHS Meningitis page, the Meningitis Research Foundation or the associated WHO page.
Defeat meningitis.

References:

1. Meningitis Progress Tracker | Meningitis Research Foundation
2. Meningitis and septicaemia | Meningitis Research Foundation
3. Meningitis - NHS (www.nhs.uk)
4. Meningitis (who.int)
5. Meningitis (bacterial) and meningococcal disease: recognition, diagnosis and management. NICE guideline [NG240]Published: 19 March 2024: www.nice.org.uk/guidance/ng240
6. Meningitis Research Foundation. Spotting a seriously ill child: The need for safety netting advice for parents when a sick child is sent home by a health professional. Available from: Purple-paper-1-0-spotting-a-seriously-ill-child-FINAL (meningitis.org)

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