THE UK SEPSIS TRUST

POST-OPERATIVE SEPSIS

WHAT IS SEPSIS?

Sepsis is a life-threatening condition that arises when the body's response to an infection injures its own tissues and organs. Sepsis can lead to shock, multiple organ failure and death, especially if not recognised early and treated promptly. It's estimated that as many as 245,000 people develop this condition each year in the UK.

As humans we come into contact with many pathogens, or 'bugs', during our lifetime, some of which cause infections. Our body's natural defense systems and immunity fight these infections, often without any need to visit the GP or hospital.

Sepsis can occur when the body's immune system – which normally helps us fight infection – overreacts, causing damage to tissues and organs.

The reasons why some people develop sepsis as a consequence of an infection are not entirely understood – medical research institutions are working to understand this better. It's important to note that it's not possible to catch sepsis or pass it onto others.

Not every infection will cause someone to develop sepsis, however almost any infection can trigger sepsis – that's why awareness is so important.

WHAT IS POST-OPERATIVE SEPSIS?

Infection is a recognised complication of surgery. When an infection develops which leads to sepsis it can affect one or more of the body's organs. This can sometimes be managed on the ward, but in severe cases might require admission to an Intensive Care Unit.

HOW MANY PATIENTS SUFFER FROM POST OPERATIVE SEPSIS?

This is a rare condition which only affects up to 1% of patients who have a routine operation. Patients who need emergency surgery or have major bowel surgery for example, to treat peritonitis, have a slightly increased risk of 5-10%, as do those who have underlying conditions which affect their immune systems.

WHAT CAUSES POST-OPERATIVE SEPSIS?

- In conditions which cause peritonitis (e.g. a hole in the bowel), the normally 'friendly' bacteria in your gut can spill out into the abdominal cavity and cause infection. Despite the surgeon washing the area with sterile fluid, the bacteria can still multiply, which can trigger the body's response, causing sepsis.

- The body produces fluid in response to surgery which can collect in areas like the abdominal or pelvic cavities (areas which contain organs such as the stomach, gut, kidneys, bladder, womb) or in the chest. If this occurs, the warm fluid provides an ideal environment for an infection to develop and spread.

- A patient can develop an infection in another organ during the post-operative period, unrelated to the original surgery. For example, when a patient is unable to move sufficiently or take deep breaths after surgery their chest may become infected, leading to pneumonia and sepsis.

- If a patient has been ill for some time prior to having surgery, their general health and in particular their nutritional state may be poor (people rarely eat sufficient calories or choose healthy foods if they are feeling unwell). This means their body is less likely to heal well after surgery. Consequently, their wound may not close properly and they may be vulnerable to infections entering through their skin.

- Some patients can be admitted for emergency surgery with harmful bacteria, such as MRSA, already present in their bodies from a previous illness or due to their environment (for example, if they have come into hospital from a care home or following a recent hospital stay). Prior to or at admission for routine surgery, blood tests and swabs for MRSA are sent to highlight any risks.

- Major operations mean the patient needs to have monitoring lines, special drips and drainage tubes placed into their body. These are inserted in very clean environments and using sterile equipment, but they do break the patient's skin or are sited inside the patient – this means that the longer they are present, the greater the risk of developing an infection because the body's protective barriers have been broken.

- Any patient who has a problem with their immune system ('immunocompromised') is at increased risk of sepsis. Some patients will come into hospital for an operation who have either been born with problems with their immune systems (congenital) or who have acquired problems (for example, due to HIV infection). Others will be on drugs, such as steroid tablets or chemotherapy, which will impair their immune system. These problems will usually be known about before the operation takes place so that appropriate precautions can be taken. If a patient is at particular risk of sepsis following their operation, their team may decide to admit them to the High Dependency Unit afterwards to keep a close eye on things.

HOW IS POST-OPERATIVE SEPSIS IDENTIFIED?

- Surgical and nursing teams should be alert to the risks of sepsis and be monitoring patients' vital signs regularly using scoring systems such as NEWS2 (in the UK). However, if a patient or their relatives are concerned then they should make this known to the team.

- As with any acute illness, early recognition and treatment is essential. Constant monitoring of pulse, blood pressure, breathing rate, temperature, urine output, signs of pain and conscious level will help to highlight any signs of deterioration.

HOW IS SEPSIS TREATED?

- Once sepsis is present, treatment is a medical emergency. The team should respond and deliver basic life-saving care including intravenous antibiotics and fluids within the first few hours. Then they will plan any further steps the patient may need, such as specialist scans or X-rays and possibly further surgery.

- If the patient has low blood pressure or other signs that the blood supply to their organs is failing, extra fluids will be given to improve their blood pressure and to keep their kidneys and other organs working. Sometimes, very strong drugs need to be administered in a Critical Care (Intensive Care or High Dependency) environment to help keep your blood pressure at an adequate level.

- Routine samples of a patient's urine, blood, phlegm, and other body fluids might be sent for analysis after surgery to show any early signs of infection.

- Patients will be placed on the most appropriate antibiotic or antibiotics. This is sometimes a ‘best guess’ in the first instance. Subsequently, the team may change antibiotics if the patient doesn't improve or if a specific bug is identified that is causing the infection.

- Should a patient's organs begin to fail, they might need to be supported by machines like a breathing machine or dialysis machine for their kidneys until their condition has improved.

- Should the cause of sepsis be from a wound which isn’t healing properly, or from a collection of infected fluid such as an abscess, the surgeon may need to take the patient back to theatre to remove the infected area of tissue.

- Patients will be kept pain free using appropriate analgesia and should they become distressed, they might be given a sedative in Intensive Care to ease them through the process.

- If a patient is unable to eat normally shortly after their operation, they will be fed via a feeding tube or special drip until their condition has improved.

WHAT TO LOOK OUT FOR WHEN THE PATIENT GETS HOME

It's essential to know what to look out for when then patient gets home and what may require assessment by a medical professional. Having a high index of suspicion for anything that doesn't seem right, particularly in the context of infection, would be encouraged.

- Pay particular attention to the surgical wound. If it becomes red, sore or inflamed, raise this with your surgical team or GP.
- Try to take regular deep breaths and keep moving as much as possible (within reason). This can help reduce the risk of developing blood clots and a post-operative chest infection.

See the adult signs and symptoms on the reverse of this booklet and if concerned, speak with your GP, 111 or if more urgent medical attention is required, 999.

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SEPSIS IS THE BODY'S RESPONSE TO AN INFECTION.

If you think you have an infection and develop any of the following symptoms, you may have sepsis.

Dial 999 and Just Ask: "Could it be Sepsis?"

ADULT SYMPTOMS:

- **S**lurred speech or confusion
- **E**xtreme shivering or muscle pain
- **P**assing no urine (in a day)
- **S**evere breathlessness
- **I**t feels like you're going to die
- **S**kin mottled or discoloured

JUST ASK "COULD IT BE SEPSIS?"

IT'S A SIMPLE QUESTION BUT IT COULD SAVE A LIFE.

ANY CHILD WHO:

1. Is breathing very fast
2. Has a fit or convulsion
3. Looks mottled, bluish or very pale
4. Has a rash that doesn't fade when you press it
5. Is very lethargic or difficult to wake
6. Feels abnormally cold to touch

MIGHT HAVE SEPSIS

Dial 999 and Just Ask: "Could it be Sepsis?"

ANY CHILD UNDER 5 WHO:

1. Is not feeding
2. Is vomiting repeatedly
3. Hasn't had a wee or wet nappy for 12 hours

MIGHT HAVE SEPSIS

If you're worried they're deteriorating call 111 or make an appointment to see your GP

Visit us at sepsistrust.org
Email info@sepsistrust.org or call 0800 389 6255 for more information

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