Administering immediate antibiotics reduces deaths from sepsis

Sepsis is a life-threatening complication of infection and can lead to shock, low blood pressure, multiple organ failure and death – 37,000 people die from it each year in the UK. A recent systematic review of 10 studies – including 23,596 people admitted to emergency departments (EDs) with sepsis – examined whether a delay in receiving antibiotics was linked with increased mortality.

The studies reported in-hospital mortality of 4-34% for people who received antibiotics within one hour, compared with 19-43% for people administered antibiotics later. Administering antibiotics within one hour reduced mortality risk by 33%. Although two studies contributed 74% of the pooled data, the results did not change when these studies were removed.

National guidance (Bit.ly/NICENG51) recommends administering antibiotics within an hour of diagnosis – each hour’s delay increases mortality risk. This review adds weight to these recommendations.

A campaign by NHS England and the UK Sepsis Trust encourages health professionals to act quickly when they recognise sepsis (http://sepsistrust.org/nhs-england).

Patients can survive sepsis if the infection is recognised and treated promptly. Nurses have an instrumental role in recognising the presence of sepsis.

In this article...

- Why suspected sepsis should be treated within one hour of arrival in the emergency department
- The link between a delay in treatment and increased risk of mortality

Expert commentary

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Nurses frequently carry out initial patient assessments in the ED and have a vital role in recognising the signs of sepsis, escalating concerns and ensuring appropriate treatment is commenced.

The national guidance on sepsis recommends that patients in acute hospital settings, who have suspected sepsis and one or more high-risk criteria – such as systolic blood pressure <90mmHg or pulse >130 beats per minute – should be treated with broad-spectrum antibiotics within one hour of diagnosis. This is one stage in the Sepsis Six bundle, which supports health professionals to provide timely and accurate diagnosis and treatment.

This study adds to the body of evidence supporting early administration of antibiotics. Although the study focused on patients in the ED, its implications for practice are widespread.

The UK Sepsis Trust states that, worldwide, someone dies from sepsis every 3.5 seconds.

Implications for practice

- Nurses should be aware of the signs of sepsis and escalate concerns as rapid treatment reduces mortality
- National guideline on sepsis recommends giving antibiotics within the first hour of diagnosis
- Administering antibiotics within one hour reduced mortality risk by 33% compared with giving them later.
- Many people with sepsis do not receive antibiotics within one hour of admission to the ED
- Various factors influence when antibiotics are administered, such as: diagnostic uncertainty; whether pre-hospital treatment is given; and in-hospital delays between prescription and delivery of antibiotics
- EDs may need to review their triage systems to prioritise suspected sepsis
- New technologies, such as rapid bedside tests, could help to ensure the antibiotics given are appropriate for the infection

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