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Septic Shock Prediction and Knowledge Discovery through Temporal Pattern Mining

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INTRODUCTION

Sepsis is a potentially life-threatening condition that occurs when the body's response to infection damages its own tissues. Sepsis can develop into septic shock [1]. Septic shock is a severe drop in blood pressure that causes very unusual problems with the way cells function and produce energy. Sepsis most often occurs in people who have been hospitalized or recently hospitalized. People in intensive care units are more likely to develop infections, which can lead to sepsis [2]. However, any infection can cause sepsis. Septic shock is the last and most dangerous stage of sepsis. Sepsis is life-threatening. It occurs when the immune system overreacts to an infection. This is when sepsis causes organ dysfunction [3]. This is usually due to low blood pressure caused by systemic inflammation. Septic shock is the final stage of sepsis and is defined by very low blood pressure despite massive IV (intravenous) fluids. Any infection can lead to sepsis, which when exacerbated can progress to septic shock. Not all infections lead to sepsis or septic shock [4]. However, if the infection causes enough inflammation, it can progress to sepsis. The most common infections are bacteria, but both viruses and fungi can also cause infections and sepsis. Infections can start anywhere, but often in the lungs, bladder, or stomach. People with septic shock need immediate medical attention [5]. Treatment is usually done in an Intensive Care Unit (ICU).

DESCRIPTION

Your doctor will immediately start giving you antibiotics. Fluids are also given intravenously to keep you hydrated and increase your blood pressure [4]. Oxygen can be obtained through Faith's mask or a nostril cannula (a small plastic tube with two openings in her nostrils). If you cannot breathe well on your own, a breathing tube may be inserted into your windpipe (trachea) to connect to a breathing machine (ventilator). Additionally, surgery may be required to remove the source of infection [2]. Catheters, tubes, and medical devices may be removed or replaced. If drinking liquids does not raise blood pressure, doctors may prescribe drugs to raise blood pressure. Drugs such as vasopressin and norepinephrine constrict blood vessels, increasing blood flow to organs [5]. If septic shock raises blood sugar levels, insulin can be given. If you have a bacterial infection, get medical attention right away. Antibiotics help fight infections and prevent the development of sepsis, which causes septic shock [1]. It is also important to have up to date information on immunizations. Vaccines can help prevent some infections and greatly reduce the severity of others. Note that some cases of septic shock cannot be prevented. Septic shock is a serious, life-threatening condition [3]. Survival depends on age, health, cause of illness, presence of organ failure, and speed of treatment. Without treatment, most people die from septic shock. With treatment, 30%-40% of patients with septic shock die.

CONCLUSION

Infection usually occurs when bacteria enter an opening in the skin. Cuts, wounds, or other sores that enter the body. *Staphylococcus aureus* could be the cause of her TSS, but it's not the only one. Another bacterium called *Streptococcus pyogenes* (GAS) may be the culprit. This is sometimes called streptococcal toxic shock syndrome or Toxic Shock Like Syndrome (TSLS). These bacteria enter the body through bacteria that originate in broken skin and throats and spread through deep tissues and the bloodstream. Over time, it can evolve into a TSS. The symptoms and treatment of this syndrome are almost identi-

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cal to TSS. However, TSLS has nothing to do with tampon use. Other streptococcal strains have been associated with toxic shock, albeit infrequently. In addition, TSS is known to occur in postoperative infections, burns, cases of nasal congestion after nosebleeds, and even dialysis catheters. Experts aren't sure why tampon use can lead to this condition.

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CONFLICT OF INTEREST

The authors declare no conflict of interest.

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