



Dr C H Asrani
DNB (Family Medicine); MBBS.

- Sepsis or Septicemia is an ill-defined term referring to the presence of bacteria or their toxins in the blood.
- It is a life-threatening clinical condition with extensive physiological (normal functions of humans) and biochemical abnormalities leading to multiple organ dysfunction and several abnormal lab values.
- Sepsis is also defined as “organ dysfunction caused by a dysregulated response of the patient to infection”.
- Mind you, Sepsis is **NOT** severe infection!
- It is a serious medical condition characterized by a whole-body inflammatory state (called a **S**ystemic **I**nflammatory **R**esponse **S**yndrome or **SIRS**) caused by **SOME** bacterial infection.
- Sepsis is not caused by viral infection but a sinister viral infection may get secondary bacterial infection that may lead to Sepsis; as was seen during Covid pandemic.
- Approximately 49 million people are affected by sepsis every year and it is estimated that 11 million deaths are caused by the syndrome, accounting for up to 19.7% of all deaths worldwide.
 - Globally, mortality rates seem to be declining on an average, however, up to 25% of patients still succumb to sepsis.
 - Septic shock, a subgroup of sepsis, characterized by profound circulatory, cellular and metabolic abnormalities, the hospital mortality rate approaches 60%.

Tests that suggest severity?

- Biomarkers related to infection severity –
 - Procalcitonin (PCT),
 - Cytokines (IL-6/ TNF- α),
 - C-reactive protein (CRP)

Why does Sepsis have high fatality rate?

- Sepsis targets one or more of vital (target) organs of the body
 - Lung → Acute Respiratory Distress Syndrome (ARDS) → needs ventilator
 - Kidney → Acute Renal Failure → needs dialysis
 - Brain → Encephalopathy → altered sensorium → needs prolonged ICU management

- Heart → Cardiovascular shock → inability to sustain blood pressure at normal levels → needs inotropes
- Liver → acute hepatic failure → hepatic encephalopathy → needs prolonged ICU management

Multiple Organ Dysfunction Syndrome

- When more than one vital organs are involved, sepsis can lead to septic shock, MODS (Multiple Organ Dysfunction Syndrome) and death.

Who is more at risk?

- The very young and
- The very old,
- Diabetics (more if uncontrolled)
- Cancer
- COPD/ CKD/ Cirrhosis
- Patients with an impaired immune system.
- Patient with a compromised vital organ
 - CKD + Acute renal failure (due to severe infection, fluid loss etc) → Sepsis
 - CLD + acute viral/ alcoholic hepatitis → Sepsis
 - Fulminant TB + Pneumonia → Sepsis
 - Interstitial Lung Disease + Pneumonia → Sepsis
 - COPD + Pneumonia/ exacerbation/ Ac bronchitis → Sepsis
 - HIV positive + any opportunistic inf → Sepsis

Treatment involves:

- Higher and multiple antibiotics
- Support the function of the lungs, kidneys, heart.
 - Artificial ventilation (ventilator)
 - Dialysis (Peritoneal dialysis or Hemodialysis)
 - Inotropes (dopamine, norad)

Way out?

- A decisive factor is the *time of correct diagnosis and the initiation of causal, supportive, and adjunctive measures.*
- This implies that increasing awareness of sepsis, high index of suspicion, early diagnosis and rational referral is need of the hour!
- Only timely fluid resuscitation and early administration of broad-spectrum antibiotics have been shown to reduce mortality.

Insurance abuse

- Severe infection is labelled as sepsis and high-end antibiotics used even for innocuous viral infections and patients kept for prolonged periods.
- Assessing a claim of sepsis, also needs expertise.