

## Management of Sepsis in Malaysia

Sepsis is a leading cause of mortality and morbidity worldwide. In United States, there is an annual increase of 1.5% in the incidence of severe sepsis which may be attributable to an increasing aging population.<sup>1</sup> In Malaysia, septicemia reported a death rate of 17% in year 2005 & 2006 which was the first principal cause of death in Ministry of Health hospitals.<sup>2,3</sup> While in year 2007 & 2008, septicemia has decreased to 13% and recorded as the second major cause of death in Ministry of Health hospitals.<sup>4,5</sup>

Identification of the organisms and antimicrobial susceptibilities can be important in subsequent management. Sepsis caused by gram negative microorganisms in particular is associated with high mortality rate. Patients at risk of sepsis presented at the hospital must be identified quickly according to International Sepsis Guidelines and intravenous broad-spectrum antibiotics to be administered after blood cultures sampling. The presence of pathogens in the blood can be confirmed by testing of blood cultures as recommended by Clinical and Laboratory Standard Institute (CLSI). At least 5 mL of blood is inoculated into each aerobic and/or anaerobic culture bottles under aseptic conditions after cleansing the puncture site with chlorhexidine solution. One or two sets of blood cultures are collected from each patient at risk before beginning of empirical antibiotic treatment. The blood cultures are then incubated for at least 5 days before being discarded as negative.<sup>6</sup> Positive blood cultures and susceptibility results will be reported to the physician within the time frame and physician would decide whether to change the antibiotic regimens accordingly.

Implementation of early goal-directed therapy (EGDT) in the treatment of sepsis is a hemodynamic optimization which has been shown to reduce morbidity and mortality in cases of severe sepsis or septic shock.<sup>1</sup> In addition to the practices of fluid resuscitation and maintenance of adequate oxygenation, which are both involved in EGDT protocol, empirical therapy using the proper antibiotic regimen can also reduce the risk of mortality. In study of Hashairi *et al.*, a growing trend of antimicrobial resistance was found in gram negative species, particularly encountered in Emergency and Outpatient Departments.<sup>6</sup> Hence, rational use of antibiotics in both settings is imperative to control the emergence of resistant strains.

Diagnosis of sepsis still remains difficult, especially in patients where clinical signs and symptoms are vague or difficult to interpret. Liberal usage of broad-spectrum antibiotics due to uncertainty of diagnosis leads to increasing events of antibiotic resistance. Sepsis is the only curable disease that recovers fully if appropriate interventions are started as early as possible in the course of the disease.

## References

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