

Outcomes of Clinical Practice Guideline for Sepsis Patients in Taksin Hospital

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Background: Sepsis is a serious disease with a high mortality rate.

Objective: To study the effect of a Clinical Practice Guideline [CPG] on mortality for sepsis patient management in Thailand.

Materials and Methods: The design was a retrospective study. The medical records of 472 severe sepsis or septic shock patients treated prior to and after the hospital sepsis CPG implementation in hospital were reviewed.

Results: Four hundred seventy-two patients were eligible for enrollment. The mortality rate was statistically significant different among studied patients in pre-implementation period (43.6%) and implementation period (13.1%) ($p < 0.001$). There was statistically higher percentage of patients who received antibiotics within the first hours of being diagnosed with sepsis in implementation period (97.9%), compared with pre-implementation period (74.2%) ($p < 0.001$). The significant higher numbers of patients in implementation period having enough volume replacement within the first six hours of severe sepsis or septic shock diagnosis compared with in pre-implementation period, as measured by an adequate urine output (≥ 0.5 ml/kg/hour) (84.6% versus 73.8%) ($p = 0.018$), and by an adequate central venous pressure (8 to 12 mmHg) (82.4% versus 43.3%) ($p < 0.001$). In addition, there were significant difference in the percentages of patients having a reversal of septic shock in pre-implementation and implementation period (94.8% versus 88.4%) ($p = 0.02$).

Conclusion: An implementation of the sepsis CPG in secondary-care hospital led to increase appropriate management and decrease mortality among the severe sepsis patients.

Keywords: Severe sepsis, Septic shock, Clinical practice guideline for sepsis

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Sepsis is a serious disease with high mortality rate (44% to 54%)^(1,2). The present study showed early hemodynamic resuscitation after diagnosis with severe sepsis or septic shock led to lower organ dysfunction together with lower in-hospital mortality rates⁽³⁾. Delay in administering appropriate antibiotic also affected risk of death for these patients^(4,5). In 2012, the International Guidelines for Management of Severe Sepsis and Septic Shock has recommended hemodynamic resuscitation to be provided within the first six hours of diagnosis of severe sepsis or septic shock with administration of appropriate antibiotics for these patients within the first hour⁽⁶⁾. The goals of early hemodynamic resuscitation are to provide

adequate central venous pressure (8 to 12 mmHg) with urine output of 0.5 ml/kg/hour or more, alongside reversal of shock (a mean arterial pressure greater than 65 mmHg), and adequate oxygenation measured by superior vena cava oxygenation saturation greater than 70% or mixed venous oxygen saturation greater than 65%⁽⁶⁾. Based on the previous studies published in 2014, there was no statistical difference in the mortality rate between patients receiving usual care and patients receiving protocol treatment for early hemodynamic resuscitation^(7,8). Moreover, it was found that there was no mortality benefit from the early administration of appropriate antibiotics^(9,10). The recommended guideline for quality improvement of sepsis care has been implemented by many health-care institutions⁽¹¹⁻¹³⁾. Castellanos-Ortega et al⁽¹³⁾ reported that the implementation of a guideline for management of septic shock patients significantly lowered mortality

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