

POSTER PRESENTATION

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Six-hour central venous oxygen saturation has no prognostic value in patients with septic shock

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Intr

Central venous oxygen saturation (ScvO₂) is used as an indicator of adequate tissue oxygenation and current sepsis guideline includes ScvO₂ 70% or more as one of initial resuscitation goals during the first 6 hours. However, it is still controversial that to achieve ScvO₂ goal is mandatory.

Objectives

The aim of this study was to investigate the prognostic value of 6-hour ScvO₂ to predict the 1-month mortality in patients with septic shock.

Methods

We have retrospectively identified septic shock patients who received protocolized treatment in two tertiary academic EDs. All patients were treated using the early goal-directed protocol. The data with respect to demographics, predisposing factors, site of infection, and the admission APACHE II score were collected. Hemodynamic (mean arterial pressure and central venous pressure) and laboratory (arterial blood gas analysis, ScvO₂, and lactate level) parameters at baseline and 6-hour were also recorded. To test the prognostic value of 6-hour ScvO₂, the area under receiver operating characteristics curve (AUROC) to predict 1-month mortality was calculated and compared with that of 6-hour lactate level. Pearson correlation coefficient between 6-hour ScvO₂ or lactate level and the admission APACHE II score were also analyzed.

Results

After excluding 122 patients with missing variables, 424 were analyzed. Among them, 104 (24.5%) died within 1-month. Respiratory infection was more frequently observed in 1-month mortality group. Lower 6-hour mean

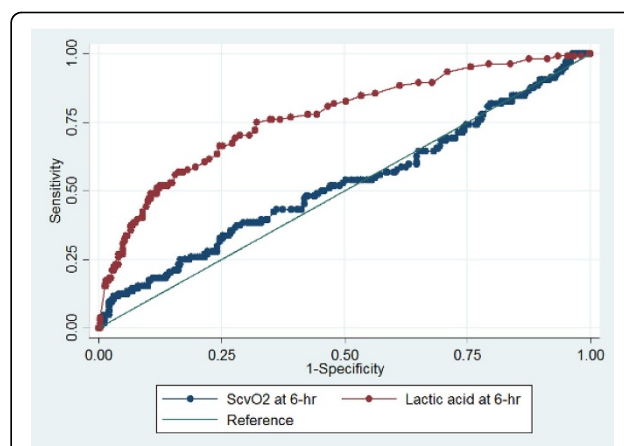


Figure 1 The 6-hour lactate level was positively correlated with the admission APACHE II score (Pearson's $\rho = 0.556$). However, the 6-hour ScvO₂ was not correlated with the admission APACHE II score (Pearson's $\rho = -0.022$) (Fig 2).

arterial pressure, higher baseline and 6-hour lactate levels, and higher admission APACHE II score were associated with an increase in the 1-month mortality. The AUROC of 6-hour ScvO₂ to predict 1-month survival was 0.525 (95% confidence interval, 0.458-0.592). AUROC of 6-hour lactate level to predict 1-month mortality was 0.767 (0.713-0.821), which was significantly higher than that of 6-hour ScvO₂ ($p < 0.001$) (Figure 1).

Conclusions

The 6-hr ScvO₂ has no prognostic value in patients with septic shock. Targetting ScvO₂ goal $\geq 70\%$ may not be essential in the management of septic shock.

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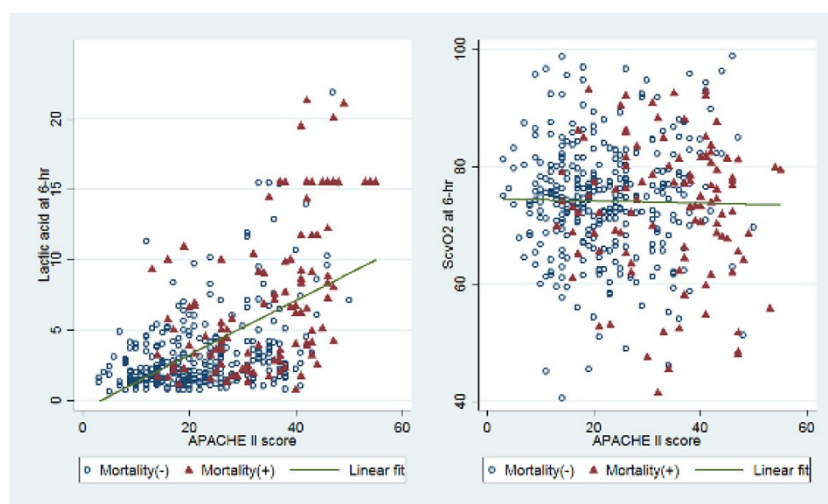


Figure 2

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References

1. Rivers E, Nguyen B, Havastad S, *et al*: Early goal-directed therapy in the treatment of severe sepsis and septic shock. *N Engl J Med* 2001, **345**:1368-77.
2. Dellinger RP, Levy MM, Rhodes A, *et al*: Surviving Sepsis Campaign: international guidelines for management of severe sepsis and septic shock. 2012. *Intensive Care Med* 2013, **39**:165-228.
3. ProCESS Investigators, Yearly DM, Kellum JA, Huang DT, *et al*: A randomized trial of protocol-based care for early septic shock. *N Engl J Med* 2014, **370**:1683-93.

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