

CENTRAL VENOUS OXYGEN SATURATION: AN OUTCOME COMPARISON IN ACUTE PRIMARY CARDIAC AND MEDICAL ILLNESS

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BACKGROUND/AIMS: Central venous oxygen saturation (ScVO₂) has been proven to be a useful marker of tissue oxygenation in severe sepsis and septic shock. However, the relevance of ScVO₂ in acute coronary syndrome has not been addressed. This study examines the meaning of ScVO₂ in acute coronary syndrome, as compared with that in other medical diseases.

METHOD: This is a prospective observational study conducted in the coronary care unit of a medium-sized general hospital, where IABP, ECMO, coronary angioplasty and open-heart surgery facilities are available 24-hours. Critically-ill cardiovascular patients and other medical disorders were enrolled. Criteria for inclusion and exclusion are listed below. Every enrolled subject underwent superior vena cava cannulation with a 3-lumen catheter. Central venous and peripheral arterial blood samples were analysed for oxygen saturation (%) immediately after admission to the unit and at 24 hours and 48 hours later. The primary endpoint measured was cardiac related mortality. The secondary endpoint was in-hospital all-cause mortality.

RESULTS: Sixty-six patients were enrolled over a period of 3 months. Overall mortality rate was 21.2%. Nearly-half of the patients suffered from cardiogenic shock related to acute coronary syndrome. Cardiac related non-survivors had significantly lower ScVO₂ (39.4±12.9%, median 44.5%) as compared to survivors (65.6±9.9%, median 66.2%) (p<0.001). A similar trend was observed in the non-cardiac deaths, with non survivors having lower ScVO₂ (32.4±18.6%, median 39.0%) as compared to survivors (70.2±9.9%, median 72.1%) (p<0.001). The APACHE II score of each group was 18 vs 30.5 (cardiac group, p<0.05) and 17 vs.39.5 (non-cardiac group, p<0.05) between the survivors and non-survivors.

DISCUSSION/CONCLUSIONS: The ScVO₂ can be useful as a surrogate of treatment outcomes. In this observational study, it provided similar prognostic significance in both cardiovascular and non-cardiovascular medical illness, paralleling conventional scoring of disease severity.

Keyword : Central vein, oxygen saturation, ScVO₂