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Lung alert

Lactate clearance is not inferior to central venous oxygen saturation as a goal in early sepsis resuscitation

Goal-directed therapy in severe sepsis improves outcome by providing protocol-driven targets for initial resuscitation. Current guidelines use central venous oxygen saturations (ScvO₂) to assess oxygen delivery and metabolism, but this requires specialist equipment and expertise which may limit its use. This study addresses whether a change in serum lactate concentration may act as an alternative.

This prospective multicentre trial randomised 300 patients with severe sepsis or septic shock to one of two resuscitation protocols. Initially, central venous pressure and mean arterial pressure were normalised using crystalloid boluses and vasopressors. Red blood cell transfusion and dobutamine were then used to either achieve a target ScvO₂ of >70% or a lactate clearance of 10% within the first 2 h of resuscitation.

There was no significant difference in absolute in-hospital mortality between the two groups (34 patients (23%) died in the ScvO₂ group vs 25 (17%) in the lactate clearance group). There was no difference in treatment-related adverse events. Only 29 patients received a blood transfusion or dobutamine to achieve these targets.

This study shows that lactate clearance is a simple but effective measure of total body oxygen metabolism which may be comparable to ScvO₂ when resuscitating patients with severe sepsis. However, this study was not blinded and was performed in hospitals with established goal-directed sepsis protocols and hence may not be generalisable to other institutions.

► **Jones AE**, Shapiro NI, Trzeciak S, *et al*. Lactate clearance versus central venous oxygen saturation as goals of early sepsis therapy: a randomized clinical trial. *JAMA* 2010;**303**:739–46.

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