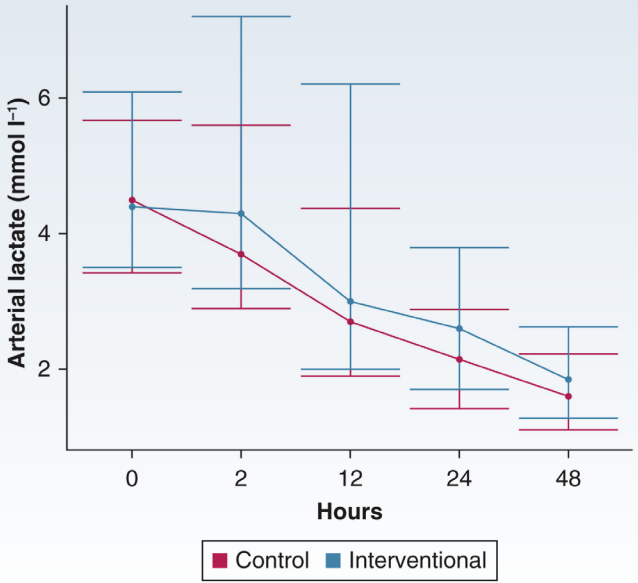
CO_2-O_2-Derived Indices as a Tool to Guide Management in Acute Circulatory Failure

STUDY DESIGN

Randomized, prospective, multicenter, anonymized study examining patients with acute circulatory failure with lactate > 3 mM using a CO_2-O_2-derived algorithm treatment vs standard of care

- Primary outcome of lactate clearance > 10% within 2 hours using the CO_2-O_2 algorithm
- Indices included the:
  - central venous-to-arterial CO_2 difference **(P[v-a]CO_2 gap)**
  - central venous-to-arterial CO_2 difference/ arteriovenous oxygen content ratio **(P[v-a]CO_2 gap/Ca-vO_2 ratio)**

RESULTS



Patients between the control and intervention arm **did not differ in lactate clearance** > 10% at 2 hours (P = .497).

There were also no significant differences in secondary end points, Sepsis-Related Organ Failure Assessment scores, or mortality.

The CO_2-O_2 derived algorithms for resuscitation may not be reliable surrogates for tissue perfusion and the balance between oxygen consumption and delivery in the acute phase of circulatory shock.

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