

## **45.Abnormalities of gastric mucosal oxygenation in septic shock: partial responsiveness to dopexamine.**

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Abstract

Splanchnic mucosal perfusion abnormalities have been implicated in the development of sepsis and multiorgan failure. We employed reflectance spectrophotometry for direct assessment of the microvascular hemoglobin oxygen saturation (HbiO<sub>2</sub>) and hemoglobin concentration (rel Hb(conc)) in the mucosa of the upper gastrointestinal tract. Owing to the high recording frequency together with a small catchment volume, assessment of spatial heterogeneity is enabled. Results were as follows: In healthy controls (n = 7), mean HbiO<sub>2</sub> was 70.3 +/- 2.1%, with narrow dispersion and near-Gaussian distribution of the histogram. In patients presenting with hyperdynamic septic shock (n = 15) mean HbiO<sub>2</sub> was reduced to 51.0 +/- 1.6% in spite of high normal whole-body oxygen delivery, with tailing of the histogram to severely hypoxic values (18.4 % of data < 40%). In parallel, markedly reduced rel Hb(conc) values were recorded and the standardized intramucosal pH (pHi) was lowered to 7.25 +/- 0.01. Short-term infusion of dopexamine (2 microg/kg/min) caused a significant rise in HbiO<sub>2</sub> and rel Hb(conc), whereas whole-body oxygen uptake and standardized pHi values were not altered. In conclusion, decreased oxygenation and tissue hemoglobin concentration, with the appearance of severely hypoxic microdomains, were noted in patients with hyperdynamic sepsis, strongly suggesting pronounced microcirculatory disturbances in this compartment. The partial responsiveness of these abnormalities to dopexamine warrants further elucidation.

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