Title: Cerebral blood flow distribution during exposure to 5 bar oxygen in awake rats

Authors: Bergo, GW
Tyssebotn, I

Keywords: decompression
CO2
carbon dioxide
hypoxia
hyperbaric
cerebral blood flow
cardiac output
oxygen
animal
rat

Issue Date: 1992

Abstract: The regional cerebral blood flow (rCBF) and cardiac output (CO) were measured in conscious rats by the microsphere method during control, after 5 and 60 min at 5 bar O2, and 5 min after decompression to air. The arterial acid-base balance was essentially unchanged during hyperbaric O2 and after decompression, except for a slightly reduced CO2 and HCO3 during the O2 exposure. The heart rate (HR) fell at 1 bar O2, continued to fall during compression, and remained low. A marked HR rise occurred in air after decompression. The systolic arterial pressure (AP) increased, while mean AP was constant during the O2 exposure. The CO and total cerebral blood flow fell in proportion to the arterial O2 content increase. The rCBF was unevenly distributed in control, and fell to a disparate degree and remained low in some regions during O2 exposure. Due to the rCBF fall, the O2 supply was limited, the glucose supply was reduced, and CO2 and heat transport probably were limited, suggesting a labile metabolic state locally in the brain. After decompression, blood flow remained low in several regions, making hypoxia likely for a considerable time in several brain areas, whereas the rest of the brain had normalized or increased

blood flow. The HR and systolic AP remained high for at least 30 min after decompression.

Description: Undersea and Hyperbaric Medical Society, Inc. (http://www.uhms.org)

URI: PMID: 1355312
http://archive.rubicon-foundation.org/2597

Appears in Collections: Undersea Biomedical Research Journal

Files in This Item:

File	Size	Format	
1355312.pdf	2282Kb	Adobe PDF	View/Open

Show full item record