Title: Urinary vasopressin and aldosterone and plasma volume during a saturation dive to 450 m

Authors: Claybaugh, JR
Goldinger, JM
Moon, RE
Fawcett, TA
Exposito, AG
Hong, SK
Holthaus, J
Bennett, PB

Keywords: decompression
Issue Date: 1992

Abstract: Urinary vasopressin (VP), aldosterone (ALDO), osmotic substances, sodium excretion, and plasma volume were assessed in 4 healthy male divers during 2 predive control days, 2 compression days, 6 days at 46 atm abs, and 26 days of decompression with stops at 37 and 27 atm abs. At pressure the ambient gas was trimix (0.5 atm abs O2:5% N2:remainder He). All urine was collected throughout the dive. Samples were divided into daytime (0700-1900) and nighttime (1900-0700). Indocyanine green dye dilution was used to determine plasma volume at predive 1, 46, and 24 atm abs. In agreement with previous dives at 31 atm abs, there was a decrease in VP excretion during compression lasting until return to 1 atm abs (P less than 0.05). Also similar to the shallower dives at 31 atm abs, the normal diurnal pattern of VP excretion, daytime higher than nighttime (P less than 0.05), disappeared at pressure. Urine osmolality showed alterations compatible with responses to VP. In contrast to previous studies at 31 atm abs, but in agreement with a previous study at 49.5 atm abs, there was no sustained increase in urinary ALDO excretion and only a transient natriuresis during the compression phase, followed by a reduced sodium excretion. In confirmation of earlier conclusions from indirect evidence, direct measurements of plasma volume indicated a reduction of about 20% (P less than 0.05) at 46 atm abs which

remained reduced after decompression to 24 atm abs.

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

URI: PMID: 1353929
http://archive.rubicon-foundation.org/2602

Appears in Collections: Undersea Biomedical Research Journal

Files in This Item:

File	Size	Format	
1353929.pdf	1662Kb	Adobe PDF	View/Open

Show full item record