Liver Research Directory

Beneficial effect of hyperbaric oxygen therapy on liver regeneration after 90% heptectomy in rats.

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BACKGROUND/AIMS: Hyperbaric oxygen therapy (HBOT) has been reported to augment oxygen delivery to ischemic tissues and improve the liver dysfunction in clinical cases. HBOT was performed after 90% heptectomy in rats to determine its effect on the regeneration of remnant liver. METHODS: After 90% heptectomy was performed in 8-week-old male Wistar rats, the animals were subdivided into an HBOT (2 atm abs., 80% O2, 1 h/day, 3 days) group and a non-HBOT group. Members of both groups were sacrificed, usually every 4 h until a maximum of 50 h after heptectomy, and the liver regeneration rate, the proportion of PCNA-positive cells and the ATP volume in the remnant tissues were examined. RESULTS: In the HBOT group, the liver regeneration rate at 36 h and 50 h after operation and the proportion of PCNA positive cells at 8 h was significantly increased compared with the non-HBOT group. The ATP volume in the remnant livers in the HBOT group was also significantly increased at 12 h.


PMID: 15591743 [PubMed - indexed for MEDLINE]

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