

Search Rubicon

[Advanced Search](#)

[Home](#)

Browse

[Communities & Collections](#)

[Titles](#)

[Authors](#)

[By Date](#)

Sign on to:

[Receive email updates](#)

[My Rubicon](#)
authorized users

[Edit Profile](#)

[Help](#)

[Rubicon Research Repository](#) >
[Rubicon Foundation Archive](#) >
[Journal of Hyperbaric Medicine](#) >

Please use this identifier to cite or link to this item:

<http://archive.rubicon-foundation.org/4364>

Title: Hyperbaric Oxygen Therapy and Hereditary Spherocytosis: Report of 2 Cases.

Authors: Wirjosemito, SA
Touhey, JE

Keywords: Hyperbaric Oxygenation
Spherocytosis
case report

Issue Date: 1988

Publisher: Undersea and Hyperbaric Medical Society, Inc.

Citation: Wirjosemito SA and Touhey JE. Hyperbaric Oxygen Therapy and Hereditary Spherocytosis: Report of 2 Cases. J. Hyperbaric Med 1988; 3 (1): 45-50.

Abstract: Two patients with hereditary spherocytosis were treated with hyperbaric oxygen (HBO) for refractory leg ulcers. No hemolytic complication occurred. These patients also had a defective leukocyte-adherence function, resulting in repetitive bouts of skin and subcutaneous infections. The mechanism whereby HBO induces hemolysis involves generation of hydrogen peroxide, which cleaves the double bonds of erythrocyte membrane unsaturated fatty acids. In addition, hydrogen peroxide negatively affects the cation transport mechanism of the cell membrane, thus producing osmotic lysis. The "older" erythrocytes are more vulnerable to lysis by hydrogen peroxide than the young group. The lysis has been demonstrated in vitamin-E deficient animals. The protective effect of vitamin E is due to its unique structure, which traps oxygen radicals of hydrogen peroxide. Although uncommon, vitamin E deficiency in humans can occur in gastrointestinal malabsorption syndrome (steatorrhea), abetalipoproteinemia, and some premature infants. Recent findings of increased deformability in erythrocytes exposed to HBO may indicate a salutary effect of HBO on the red blood cells of hereditary spherocytosis, which are more rigid and less deformable than normal. If, for an associated condition, a patient with hereditary spherocytosis must be treated with HBO, close

monitoring of the hemogram, hemolysis parameters, and vitamin E level is warranted. Supplemental vitamin E may be indicated.

Description: Journal of Hyperbaric Medicine : Journal of the Undersea and Hyperbaric Medical Society, Inc.

URI: <http://archive.rubicon-foundation.org/4364>

ISSN: 0884-1225

Appears in Collections: [Journal of Hyperbaric Medicine](#)

Files in This Item:

File	Description	Size	Format
JHM_V3N1_7.pdf		899Kb	Adobe PDF View/Open

[Show full item record](#)

All items in DSpace are protected by copyright, with all rights reserved.