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### Thermal burns, hyperbaric oxygen therapy and public health

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**Introduction:** In public health, thermal burn is still a major problem with much morbidity and mortality. Its local and systemic consequences increase the importance of the matter. The financial cost on health systems remains high. In hyperbaric oxygen therapy (HBOT), 100% oxygen is prescribed at pressures greater than atmospheric pressure. HBOT has many medical indications.

**Methods:** HBOT is unknown in many countries, so pubmed articles are reviewed systematically between years 2000-2015.

**Results:** For the first time, Ikeda and Wada used HBOT in the treatment of thermal burns (1965). Direct effect on pathophysiology of the burns was studied by Gruber on rats (1970). Findings of Cianci et al (1990) were: HBOT-treated patients had 14.8 days decrease in length of stay, 39% reduction of surgeries, and \$31,600 saving per case. A systematic review was performed by Villanueva et al (2004). Mechanisms and effects of treatment by HBOT in burns are considered as follows: Hyperoxia, pre-capillary vasoconstriction, dermal ischemia prevention, plasma exudation reduction, cellular metabolism preserving, tissue oxygenation enhancement, edema reduction and decrease of fluid loss, better resuscitation & recovery, healing promotion. Subsequent studies demonstrated that HBOT improves morbidity and mortality significantly (as an adjunct treatment in burn care), and reduces length of hospital stay.

**Conclusion:** It is recommended that HBOT should be done by trained hands. The followings must be considered for successful outcomes: Appropriate monitoring precautions, careful patient selection and screening. HBOT may help surgeons in diverse situations, especially burns.

### Biography

Amir Khoshvaghti (MD, PhD) has completed his PhD of anatomical sciences 11 years ago from Shahid Beheshti University of medical sciences. He is the assistant professor and head of department (basic sciences of aerospace and subaquatic medicine faculty) in IRAN. He has published more than 10 papers in reputed journals (English and Farsi). He has also presented more than 30 oral presentations or posters in congresses (international and national)

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