

## Hyperbaric oxygen and topical oxygen are different treatments

Sir,

We read with interest the article named 'pressure ulcers: Current understanding and newer modalities of treatment' that was published in Indian J Plast Surgery 2015 January–April issue. We thought that there was a misunderstanding in hyperbaric oxygen therapy (HBOT) definition. They have defined HBOT based on reference number 47<sup>[1]</sup> which actually is the definition of topical oxygen treatment (TOT). Then, they have explained the effects of HBOT based on the reference number 49<sup>[2]</sup> in the same section.

Hyperbaric oxygen is a treatment, in which a patient breathes near 100% oxygen intermittently while inside a treatment chamber at a pressure higher than sea level pressure (i.e., >1 atmosphere absolute; atm abs). Current information indicates that pressurisation should be to 1.4 atm abs or higher.<sup>[3]</sup> On the other hand, with TOT an airtight chamber or polyethylene bag is sealed around a limb or the trunk by either a constriction/tourniquet device or by tape and high flow (usually 10 L/min) oxygen is introduced into the bag and over the wound. Pressures just over 1.0 atm abs (typically 1.004–1.013 atm abs) are recommended because higher pressures could decrease arterial/capillary inflow.<sup>[4]</sup>

In order to avoid this confusion, UHMS (Undersea & Medical Hyperbaric Society) published a position statement. As explained in UHMS position statement on topical oxygen; frequently, and erroneously, this form of oxygen administration has been referred to as 'topical HBOT' or even more erroneously 'HBOT'. The policy of the UHMS in regard to topical oxygen is stated as follows:

1. Topical oxygen should not be termed hyperbaric oxygen since doing so either intentionally or unintentionally suggests that TOT is equivalent or even identical to hyperbaric oxygen. Published documents reporting experience with topical oxygen should clearly state that topical oxygen, not hyperbaric oxygen is being employed.

2. Mechanisms of action or clinical study results for hyperbaric oxygen cannot and should not be co-opted to support topical oxygen since HBOT and topical oxygen have different routes and probably efficiencies of entry into the wound and their physiology and biochemistry are necessarily different.<sup>[4]</sup>

### Financial support and sponsorship

Nil.

### Conflicts of interest

There are no conflicts of interest.

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Access this article online	
<b>Quick Response Code:</b> 	<b>Website:</b> <a href="http://www.ijps.org">www.ijps.org</a>
	<b>DOI:</b> 10.4103/0970-0358.163069

**How to cite this article:** Handan O, Samil A. Hyperbaric oxygen and topical oxygen are different treatments. Indian J Plast Surg 2015;48:216-7.