

Hyperbaric Oxygen Use in Jehovah's Witness Post Hysterectomy with Acute Severe Anaemia

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Introduction

The prime consideration in managing Jehovah's Witness patients with acute anaemia is to ensure adequate tissue oxygenation despite the reduced oxygen-carrying capacity of blood. In addition to measures taken to minimise oxygen consumption, hyperbaric oxygen (HBOT) is a useful adjunct to increase oxygen delivery to the tissues. At 3 atm absolute (ATA), the amount of dissolved oxygen can meet basal metabolic requirements.

Case History

A 44 year old female Jehovah's Witness presented to The Alfred following an elective abdominal hysterectomy at a different hospital. She had an advance directive refusing all forms of blood products due to religious beliefs.

On arrival at the ICU, she had a haemoglobin(Hb) of 28, platelet count of 98, and normal clotting studies. She was otherwise haemodynamically stable with minimal inotropic support and no evidence of further active bleeding.

To minimise oxygen consumption, she was kept sedated and paralysed. Normothermia was maintained with surface cooling and paracetamol. Blood taking was kept to a minimum, and when required, paediatric size sample tubes were used.

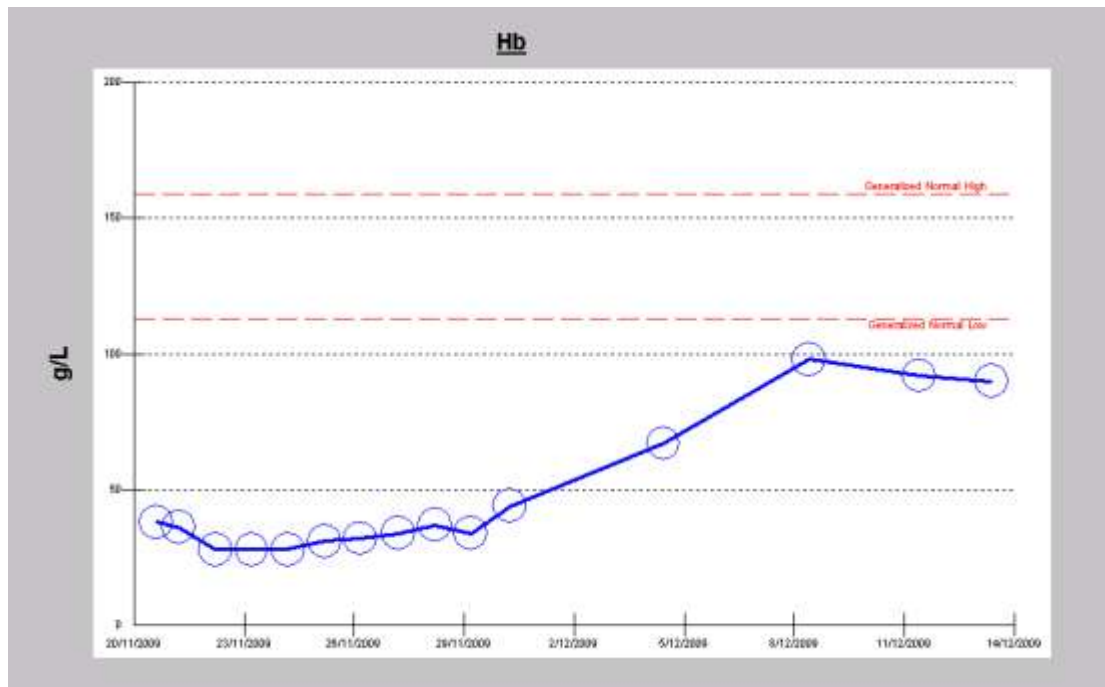
Haematinics including iron infusions, B12 and folic acid was started. Erythropoietin was also commenced.

Hyperbaric oxygen therapy(HBOT) was initiated at the start. She had twice daily sessions for the first 6 days. Each treatment at 3 atm absolute (ATA) lasted 90 min. HBOT was reduced to single daily sessions when her Hb started to show a slow upward trend. HBOT was discontinued on day 11.

The subsequent Hb rise was slow, and lagged behind clinical improvement. By day 10, her Hb was 44. This peaked to a Hb of 98 at day 16.

She was successfully extubated on day 16.

No adverse effects (of oxygen toxicity and barotrauma) with regards to HBOT was seen in this patient.



Conclusions:

The mainstay of care for an acutely anaemic patient without blood products, is sedation and ventilation to minimise oxygen requirements whilst optimising oxygen delivery and erythropoiesis. HBOT is a useful and safe adjunct if used properly in this setting.