

Reasons for the delayed presentation of divers with decompression illness: a retrospective audit

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Introduction

Decompression illness (DCI) is a condition that may result when a person experiences a reduction in ambient pressure.³ Divers are at risk of DCI when returning to the surface after a dive.

DCI is an emergency and can be fatal.⁴ Treatment for DCI is hyperbaric oxygen therapy (HBOT). Delays in the presentation and treatment of DCI can reduce treatment efficacy.⁵

Methods

- 33 patients were treated for DCI (London Hyperbaric Medicine treatment centre, May 2021 – December 2022)
- Quantitative data, including duration of delay to treatment, were extracted from patient files for comparative analysis. This identified what factors influence delay.
- Qualitative data regarding causes of delay were extracted for thematic analysis⁶. This explored how factors influence delay.

Results and Discussion

Factors found to increase delay:



Delay duration by diver qualification

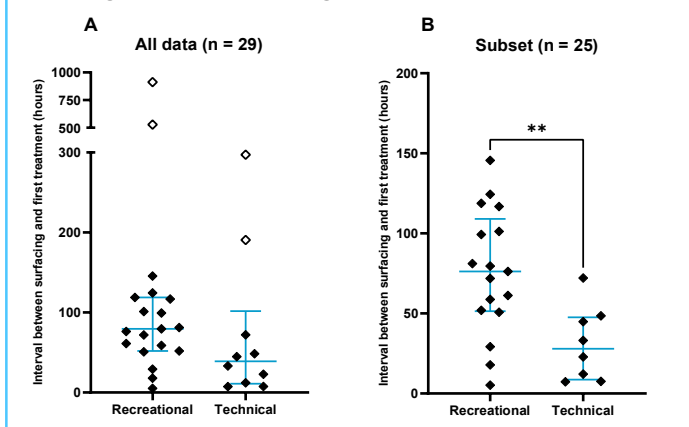


Figure 1A and 1B (above) A scatterplot showing the intervals between divers surfacing from their final dive and receiving their first HBOT treatment in hours. The x-axes indicate whether the diver held a recreational or technical qualification. The blue error bars indicate the median and interquartile ranges. The white diamonds indicate intervals of divers who received HBOT elsewhere first, before presenting to LHM. When these patients are excluded (Figure 1B), there is a statistically significant decrease (indicated by asterisks) in the delay interval for technical compared to recreational divers (P=0.006, Mann-Whitney U test).

“(patient) ‘collapsed’ and was seen by Paramedics who assessed and discharged him...later presented to [...] A&E...(who) discharged him with impression of costochondritis”

“previously experienced similar symptoms following uneventful dives but these have always resolved within 2 - 3 days. The unusually long duration of this episode prompted her to self-refer.”

Figure 2 (above) Excerpts of patient notes, belonging to two of the five themes generated.

Two of the five themes generated are displayed here (Fig. 2).

The limited knowledge of DCI by divers, instructors or healthcare professionals often means DCI is not recognised, increasing delay times.

Patients generate thresholds for seeking healthcare, based on the severity, duration and interference of symptoms. These are individual to each patient and can prolong delays.

Here, the use of a mixed-methods approach provides insight into the complex reasons behind the delayed presentation of DCI, where existing literature is limited.

Greater awareness of the variable presentation of DCI will hopefully encourage healthcare professionals to consider diving-related illness in their differential diagnoses.

Recommendations

- Know how to identify symptoms of DCI
- Ask specifically about recent diving activity
- Discuss with a hyperbaric physician e.g. via diver helpline