



Adjustable Lens Eyeglasses for Visual Changes Associated with Hyperbaric Oxygen Treatment

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INTRODUCTION / BACKGROUND

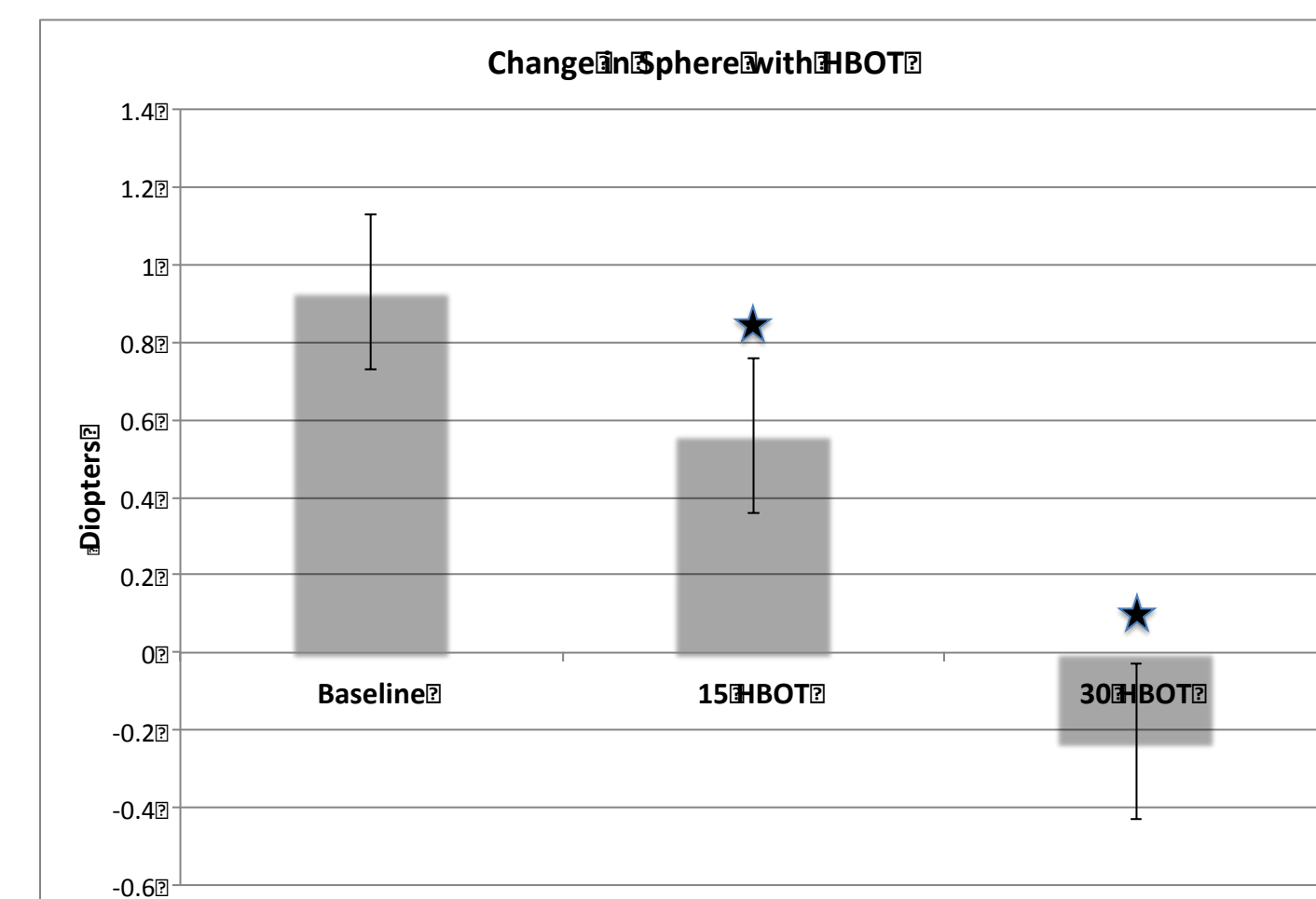
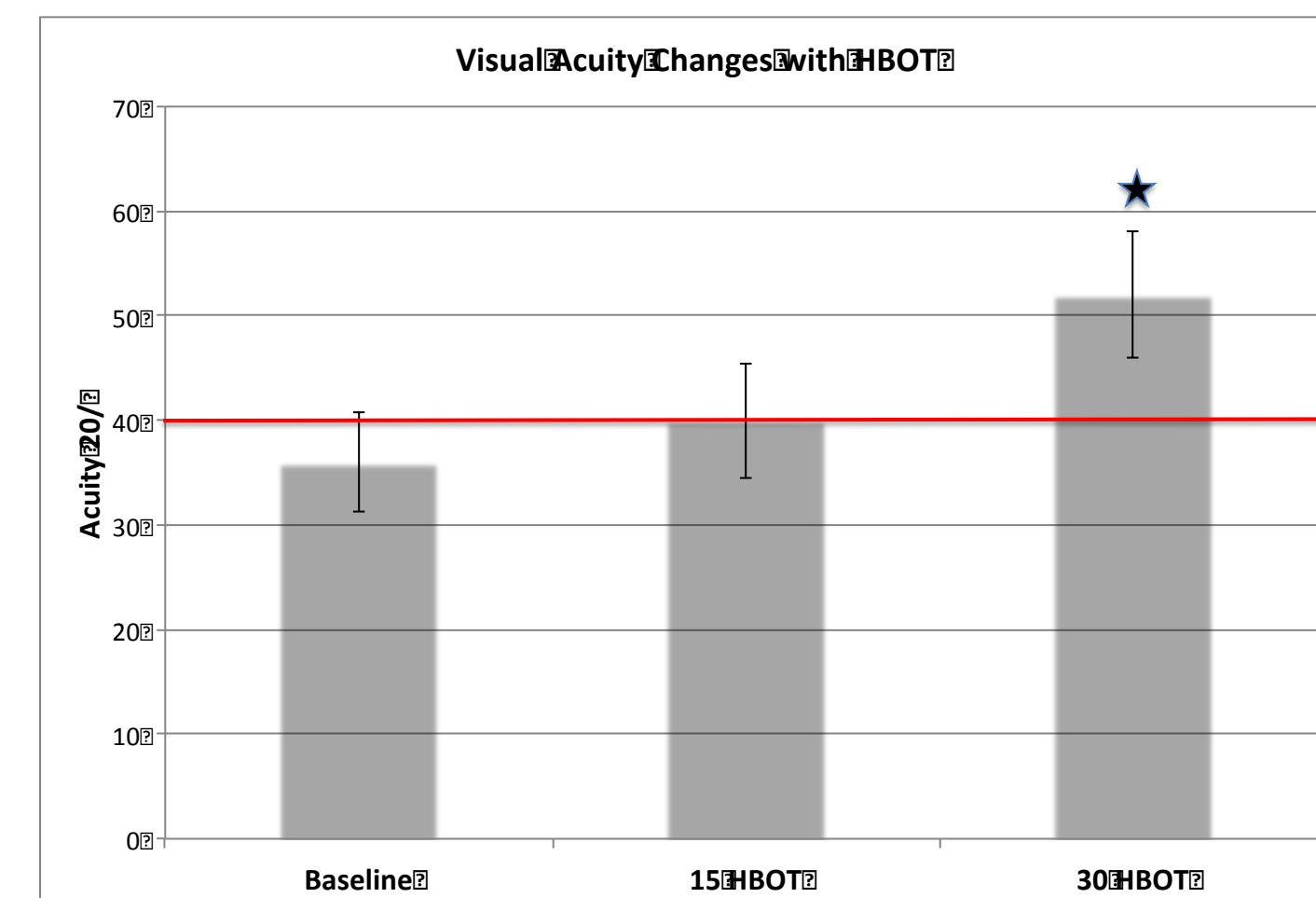
Hyperbaric Oxygen Treatments (HBOT) trigger visual changes. These can compromise safety in jobs/situations requiring good visual acuity (driving). We measured the visual changes during HBOT and assessed the ability of adjustable glasses to correct them.

MATERIALS & METHODS

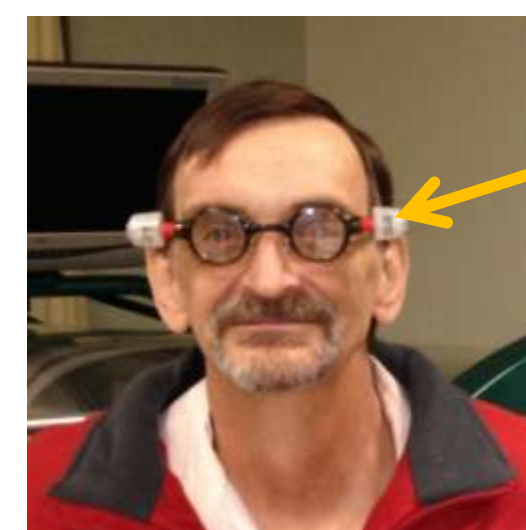
Visual acuity and refractive error (using the Snellen chart and Nidex AR-310A autorefractor respectively) were measured on all patients expected to complete more than 10 HBOTs. Testing was done prior to starting HBOT and again after 15, 30 and 40 treatments. Patients who reported visual changes that interfered with their daily lives were offered adjustable lens glasses (Adlens-Hemisphere) and later completed a questionnaire about their experiences with them.

RESULTS

Visual acuity and refraction data were collected on 26 patients. Eleven had complete baseline, 15 and 30 day data on at least 1 eye. Patients became more myopic. Significant changes were detectable after 15 HBOTs. Eight out of 18 patients who completed at least 15 HBOTs reported visual changes.



★=p<0.05 compared to baseline



Permission to use image obtained

The model tested (Hemisphere) had prominent adjusting knobs that were not removed.

Many states require a visual acuity of 20/40 or better to receive a drivers license.

Responses to questionnaire about use of the adjustable lens glasses. Average answers in red

Mean answers to questionnaire about their experience with Adlens glasses.

How many weeks did you use the Adlens glasses? **5.5** weeks

Were the Adlens glasses helpful?

Not at all helpful 0 1 2 3 4 5 6 7 8 9 10 Very helpful

Please rate your agreement with the following statements, where 1 indicates strong disagreement and 10 indicated strong agreement.

It was able to adjust the lenses to correct my vision. **7**

The Adlens glasses were comfortable. **1.5**

The Adlens glasses caused headaches. **1**

The Adlens glasses were fashionable. **5**

How often did you wear the Adlens glasses?

2 every day

1 1 to 3 days a week

2 4 to 6 days a week

Approximately how many times a day did you adjust the lenses on your Adlens glasses? **2**

Were the glasses easy to adjust? **Yes**

RESULTS (con't)

4 patients opted to use the adjustable glasses
3 to improve distance vision (driving, watching TV)
1 for reading and computer work.
The glasses corrected the visual changes.
The major drawbacks were comfort and aesthetics
(see questionnaire results at left)



Subsequent version of adjustable glasses (Adlens Emergensee, left) does not have the prominent adjustment knobs

SUMMARY / CONCLUSIONS

Visual changes occur commonly with HBO treatments, although many patients are either not aware of them or feel they are not significant enough to require action. Adjustable lens glasses correct vision in this setting, which can be very important for patients in jobs/situations requiring good visual acuity. The major complaints about the glasses were over comfort and appearance.

Acknowledgement: We appreciate the support from Adlens, Inc. who provided the glasses and autorefractor for the study