



Effects of Hyperbaric Oxygen Therapy on Blood Pressure



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Introduction:

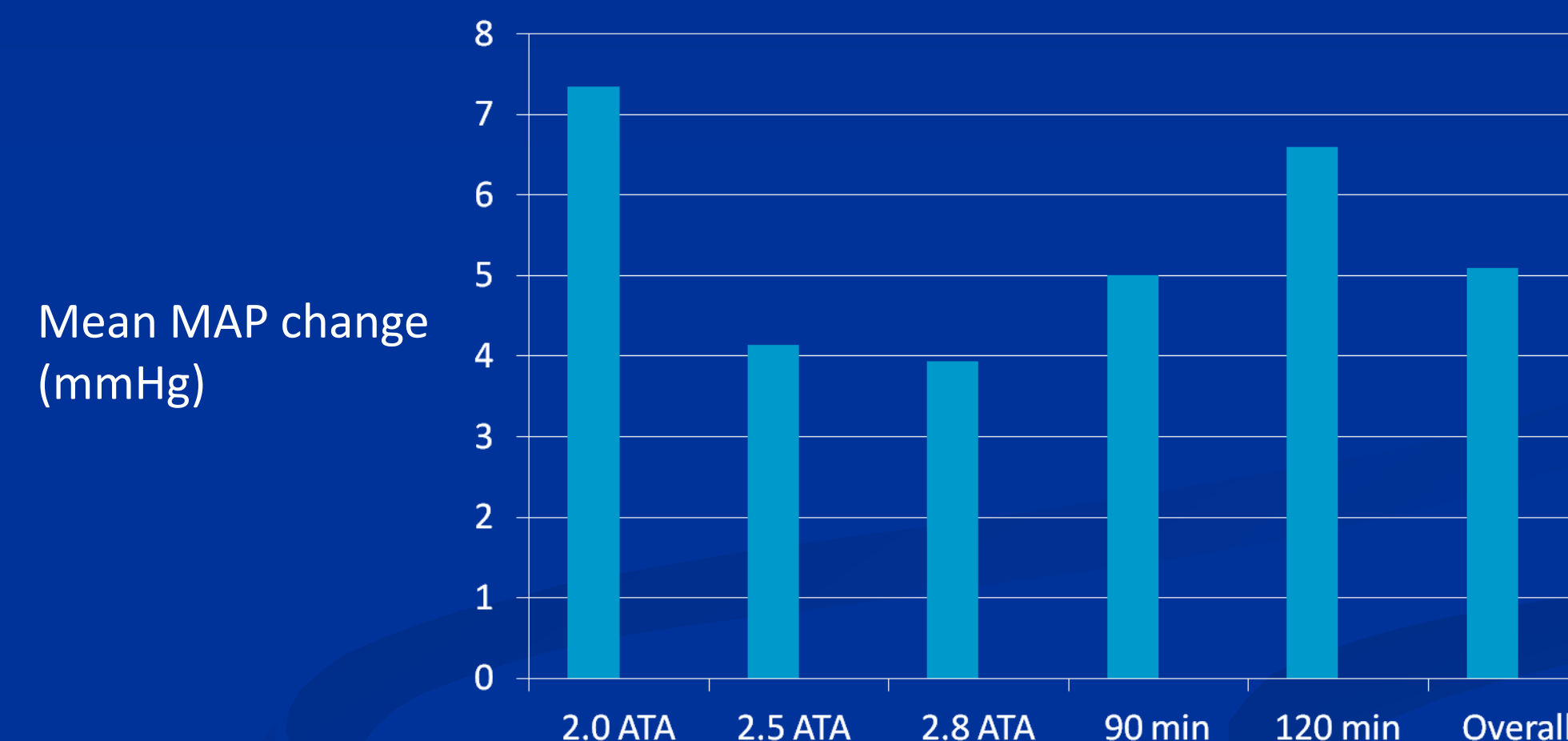
Hyperbaric oxygen (HBO) has been shown in prior studies to increase blood pressure. We sought to study the changes in blood pressure evoked by HBO.

Methods:

We completed a retrospective chart review on patients treated March 1, 2012 – December 31, 2013 from prospectively obtained QA data on pre and post systolic, diastolic, and mean arterial pressures in patients undergoing HBO therapy. We recorded blood pressure, patient demographics, co-morbidities, anti-hypertensive therapy, and HBO treatment parameters.

Results:

96 patients underwent a total of 1815 treatments. There was a mean increase in MAP of 5.09 mmHg and median increase of 5.61 mmHg. There was no significant difference in MAP change between patients with a history of hypertension and no hypertension. In the subgroup of patients with hypertension, the type of anti-hypertensive medication made no difference in MAP change. Co-morbid conditions were not associated with a change in MAP during HBO. The mean change in MAP for 90 minutes (5 mmHg) and 120 minutes (6.59 mmHg) was significant ($p=0.011$). The mean change in MAP for 2.0 ATA (7.34 mmHg) and 2.8 ATA (3.94 mmHg) was significant ($p<0.0001$). The mean change in MAP for 2.5 ATA (4.14 mmHg) was not significant when compared to the other treatment pressures.



Conclusions:

This study demonstrated an overall increase in MAP after HBO. Our data indicates a statistically significant increase in MAP for patients undergoing longer treatment for 120 minutes compared to 90 minutes. One would expect the MAP to increase with increasing treatment pressure. Interestingly, the opposite effect was observed in this study with decreased change in MAP at higher treatment pressure. The reasons for this are unclear. The current data suggests shorter treatments at higher pressure may mitigate the overall effect of HBO on MAP.