



# HYPERBARIC OXYGEN THERAPY EFFECTS ON BLOOD PRESSURE

Heyboer M, Smith G, Santiago W, Wojcik S, Department of Emergency Medicine, Division of Hyperbaric Medicine & Wound Care, Upstate Medical University, Syracuse, NY



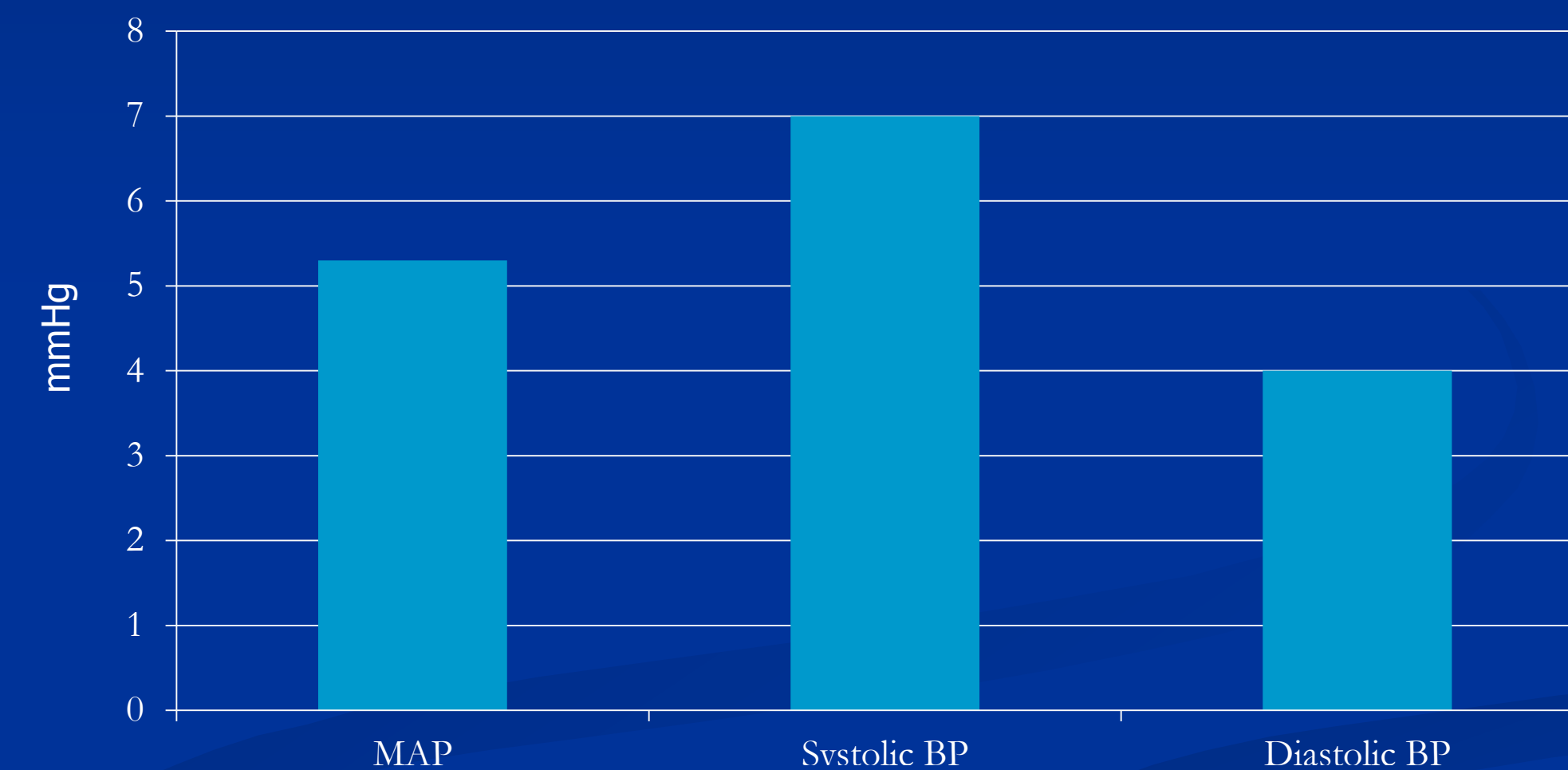
**Introduction/Background:** Previous studies suggest an increase in blood pressure with hyperbaric oxygen therapy (HBOT). We sought to further quantify blood pressure (BP) changes in patients undergoing HBO and identify risk factors.

**Materials and Methods:** Data was prospectively collected on pre and post HBOT BP changes in patients undergoing HBOT from March 2012 – December 2014. Additional data including specific anti-hypertensive therapy and HBOT treatment parameters was collected retrospectively.

**Results:** Data is reported on 145 patients who underwent a total of 2952 treatments. There was a median increase in MAP of 5.3mmHg, systolic BP of 7mmHg, and diastolic BP of 4mmHg. There was no significant difference in BP change when comparing those with hypertension (57.5%) versus those without hypertension (42.6%). When comparing treatment pressure the median MAP change was 6.3mmHg (2 ATA), 4.7mmHg (2.5 ATA), and 3.5mmHg (2.8 ATA,  $p < 0.0001$ ). Finally, there was an increase in MAP with longer treatment time which was not statistically significant (90 minute: 5mmHg vs. 120 minute: 6.3mmHg,  $p = 0.68$ ).

**Summary/Conclusions:** The results of this study demonstrate an overall increase in blood pressure in those undergoing HBOT regardless of the presence of hypertension. Among those with hypertension, angiotensin receptor blockers and beta blockers appear to extenuate this effect, while ACE inhibitors were protective. Finally, these results suggest less effect with higher pressure which seems counter intuitive and warrants further investigation.

Median Change with HBO



Patients with HTN Different Anti-hypertensive Medications

