ONLINE SUPPLEMENTAL MATERIAL

Supplemental Methods

Cell-free plasma Hb levels and spectral deconvolution of species

The plasma samples showed significant non-Hb related background signal and a partial background correction was carried out as follows. To correct for light scattering, the absorbance values between 675 nm and700 nm from each spectrum were used to calculate a straight line which was extrapolated to the whole spectral range and subtracted from the experimental spectrum. With the correction, significant background absorbance remained evident in the 450 - 550 nm range and therefore, only the 550-700 nm range was used for least squares analysis.

NO consumption

In brief, 0.01mM DETANONOate, a NO donor with a half-life of 56 h at 25°C, was equilibrated in an anaerobic purge vessel flushed with helium running into a NO chemiluminescence analyzer (Sievers, Boulder CO). When the NO concentration achieved a steady state, samples of supernatant from the stored blood units were injected into the solution and the instantaneous decrease in NO concentration was quantified.

Supplemental Figure Legends

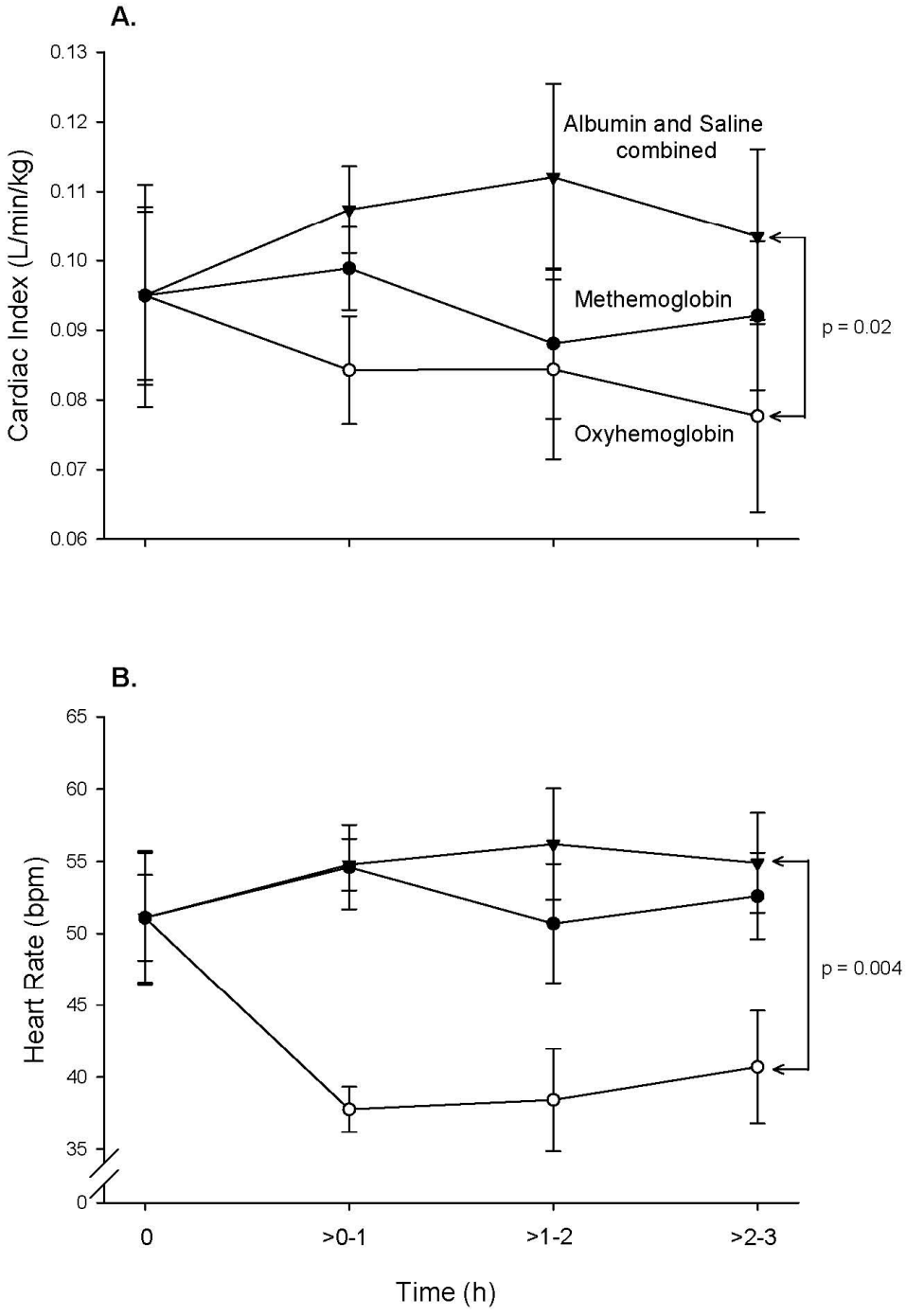
Supplemental Figure 1: The format is similar to Figure 1 except now mean (± SE) changes in CI (panel A) and heart rate (panel B) are shown.

Supplemental Figure 2: The format is similar to Figure 4 except instead during infusion (oxyHb, Panel A, and metHb, Panel B), the data post-infusion are shown (1-3 h).

Supplemental Figure 3: The format is similar to Figure 6 except now instead of oxyHb formed *in vivo* by reducing infused metHb, the metHb formed *in vivo* by oxidizing infused oxyHb is plotted from 0-3 h (Panels A-E).

Supplemental Figure 4: The format is similar to Figure 1 except now mean (± SE) changes in complete blood counts (panels A-D), electrolytes (panels E-H) and arterial blood gases (panels I-K) are shown. There were no significant differences throughout comparing treatment groups in all the panels (all, p=ns).

Supplemental figure 1



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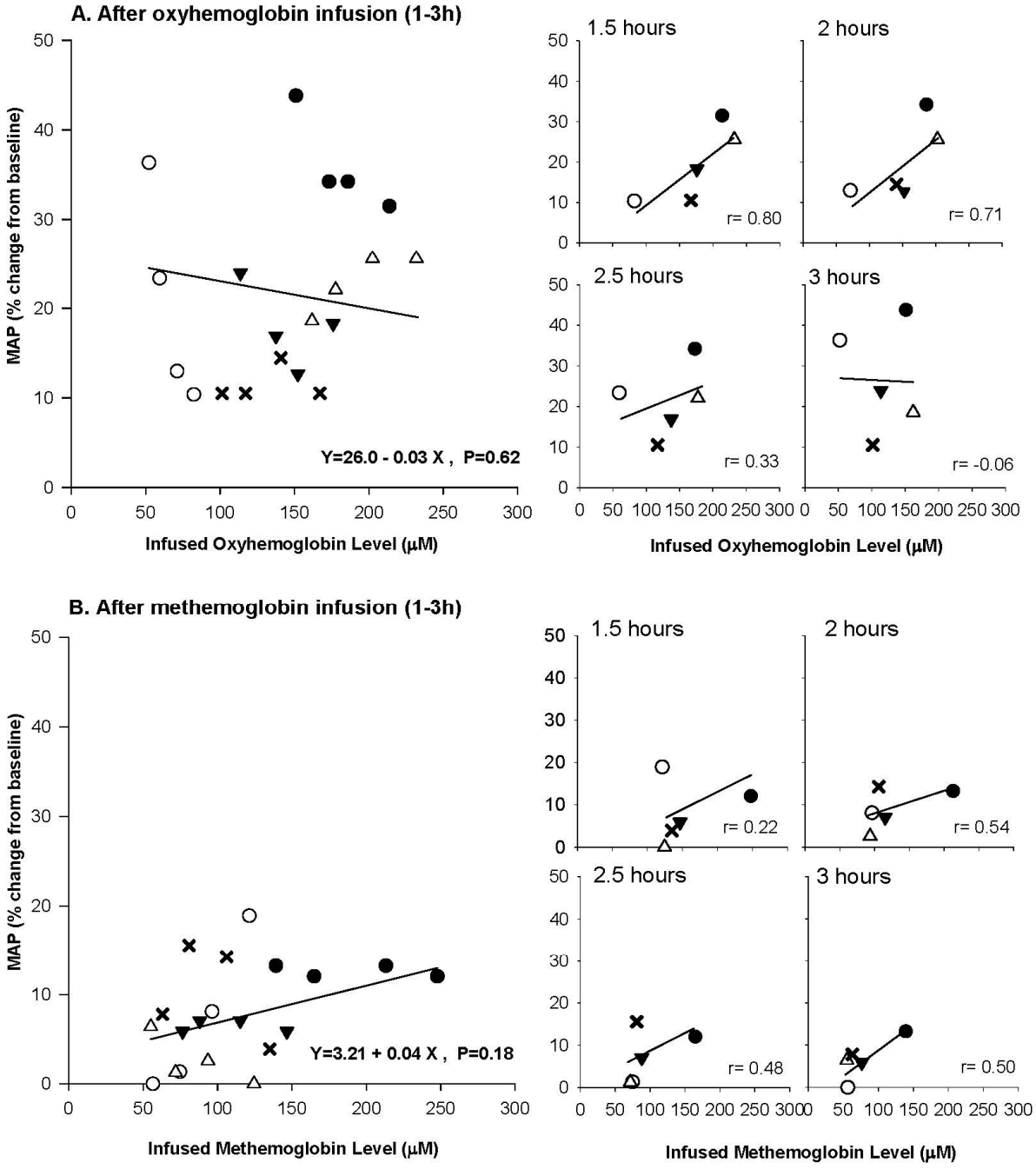
Supplemental Figure 2.



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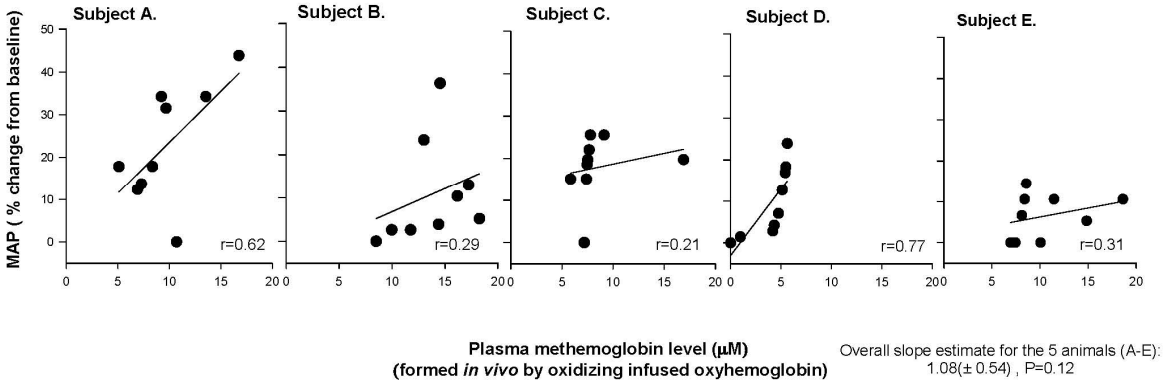
Supplemental Figure 3.



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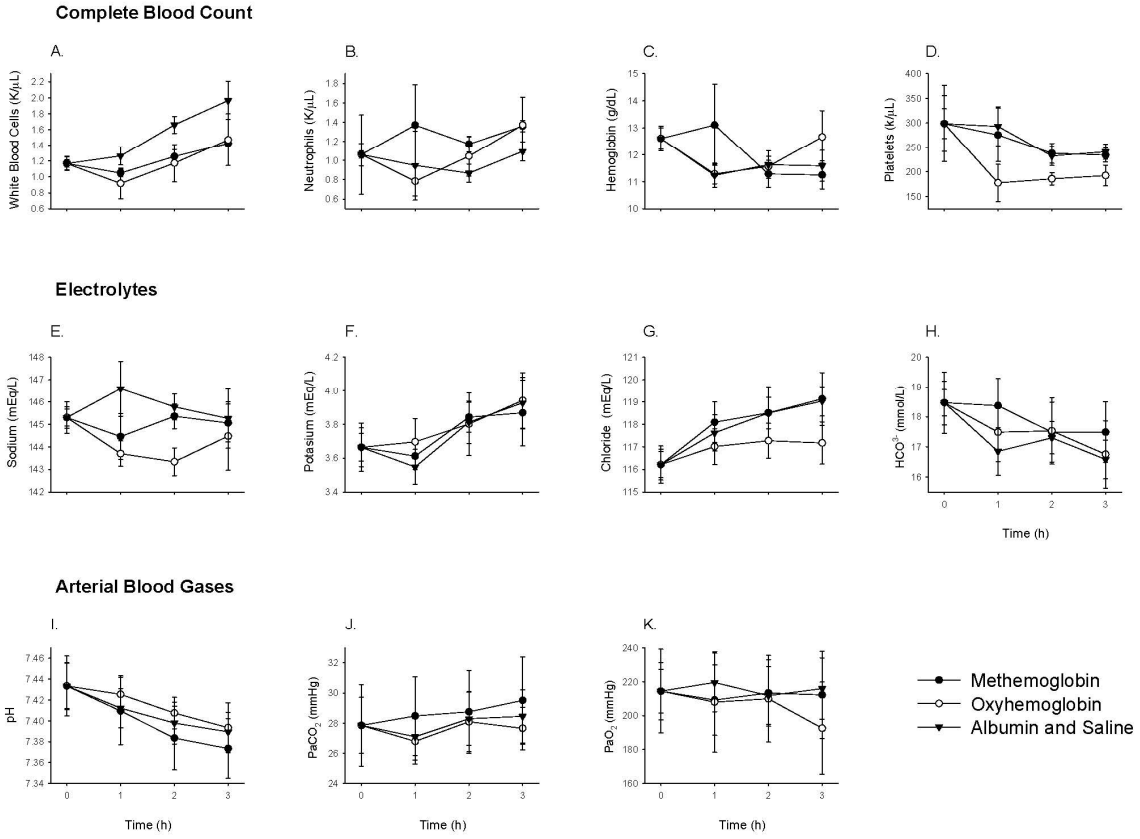
Supplemental figure 4



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