**SUPPLEMENTAL DIGITAL CONTENT 1**

**Figure 1. Schematic of study design.** Key: Tx=Transfusion, CPB=Cardiopulmonary Bypass, BAL=Bronchoalveolar Lavage.

**Table 1. Sensitivity Analysis: Experiment 1.**

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| **Per protocol analysis** | **Mean (±SE)** | **Difference (95% CI)** |
| **Outcome** | **Sham****(n=7)** | **D14 Tx (n=4)** | **D42 Tx (n=7)** | **D14 Tx *vs* Sham** | **D42 Tx *vs* Sham** | **D42 Tx** *vs* **D14 Tx** |
| **‡Lung Compliance (ml/cmH2O)** |  |  |  |  |  |  |
| Baseline | 39.14 (1.90) | 45.00 (2.89) | 36.29 (2.08) | 5.86(-3.21 to 14.92) | -2.86(-10.59 to 4.87) | -8.71(-17.78 to 0.35) |
| 1.5 Hours | 37.85 | 39.50 | 33.57 | 1.65 | -4.28 | -5.93 |
| 24 Hours | 40.71 | 42.50 | 33.71 | 1.79 | -7.00 | -8.79 |
| Pooled over time | 39.44 (0.49) | 36.48 (0.74) | 36.08 (0.53) | -2.96\*(-5.38 to -0.54) | -3.36**†**(-5.31 to -1.42) | -0.40(-3.06 to 2.26) |

**‡** Least squares means, adjusted for baseline Lung Compliance estimated at 39.33. The test for an interaction between treatment and time was p=0.370 for Lung Compliance. Data from post intervention time points was therefore pooled to estimate the overall effect for these outcomes. **\*** P<0.05, **†** P<0.01. CI = confidence interval (after Bonferroni adjustment), SE = standard error, Tx = Transfusion.

Pairwise comparisons (after Bonferroni adjustment) for Lung Compliance; D14 Tx *vs*. sham, p=0.02, D42 Tx *vs*. sham, p<0.01, D42 Tx *vs*. D14 Tx p=1.00. Test for overall treatment effect for Lung Compliance p<0.01.

**Table 2. Sensitivity Analysis: Experiment 1.**

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| **Intention to treat analysis** | **Mean (±SE)** | **Difference (95% CI)** |
| **Outcome** | **Sham****(n=7)** | **D14 Tx (n=6)** | **D42 Tx****(n=7)** | **D14 Tx *vs* Sham** | **D42 Tx *vs* Sham** | **D42 Tx *vs* D14 Tx** |
| **‡Lung Compliance (ml/cmH2O)** |  |  |  |  |  |  |
| Baseline | 39.14 (1.90) | 45.83 (1.94) | 36.29 (2.08) | 6.69(-0.87 to 14.24) | -2.86(-10.11 to 4.40) | -9.55\*(-17.11 to -1.99) |
| 1.5 Hours | 37.85 | 38.60 | 33.57 | 0.75 | -4.28 | -5.03 |
| 24 Hours | 40.71 | 42.50 | 33.71 | 1.79 | -7.00 | -8.79 |
| Pooled over time | 39.44 (0.49) | 36.48 (0.74) | 36.08 (0.53) | -2.96\*(-5.38 to -0.54) | -3.36**†**(-5.31 to -1.42) | -0.40(-3.06 to 2.26) |

**‡** Least squares means, adjusted for baseline Lung Compliance estimated at 39.33. The test for an interaction between treatment and time was p=0.370 for Lung Compliance. Data from post intervention time points was therefore pooled to estimate the overall effect for these outcomes. **\*** P<0.05, **†** P<0.01. CI = confidence interval (after Bonferroni adjustment), SE = standard error, Tx = Transfusion.

Pairwise comparisons (after Bonferroni adjustment) for Lung Compliance; D14 Tx *vs*. sham, p=0.02, D42 Tx *vs*. sham, p<0.01, D42 Tx *vs*. D14 Tx p=1.000. Test for overall treatment effect for Lung Compliance p<0.01.

**Table 3. Sensitivity Analysis: Experiment 2.**

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| **Per protocol analysis** | **Mean (±SE)** | **Difference (95% CI)** |
| **Outcome** | **Sham****(n=7)** | **CPB** **(n=7)** | **CPB + D42 Tx (n=7)** | **CPB vs Sham** | **CPB + D42 Tx *vs* Sham** | **CPB + D42 Tx *vs*** **CPB** |
| **‡Lung Compliance (ml/cmH2O)** |  |  |  |  |  |  |
| Baseline | 39.14 (1.90) | 48.00 (3.60) | 43.43 (1.23) | 8.86(-0.30 to 18.02) | 4.29(-4.87 to 13.44) | -4.57(-13.73 to 4.59) |
| 1.5 Hours | 37.86 (1.67) | 41.42 (3.87) | 37.57 (1.99) | -5.39\*(-10.07 to -0.71) | -4.62\*(-8.80 to -0.44) | 0.77(-3.43 to 4.97) |
| 24 Hours | 40.71 (1.58) | 45.29 (3.70) | 37.57 (1.25) | -3.67(-7.44 to 0.11) | -7.13**†**(-10.50 to -3.76) | -3.46\*(-6.85 to -0.08) |

**‡** Least squares means, adjusted for baseline Lung Compliance estimated at 43.52. The test for an interaction between treatment and time was p=0.009. Data from post intervention time points was therefore reported individually. **\*** P<0.05, **†** P<0.01. CI = confidence interval (after Bonferroni adjustment), SE = standard error, CPB = Cardiopulmonary Bypass, Tx = Transfusion.

Pairwise comparisons (after Bonferroni adjustment) for Lung Compliance at 1.5hrs; CPB *vs*. sham, p=0.02, CPB + D42 Tx *vs*. sham, p=0.03, CPB + D42 Tx *vs*. CPB, p=1.000. Test for overall treatment effect for Lung Compliance p=0.01.

Pairwise comparisons (after Bonferroni adjustment) for Lung Compliance at 24hrs; CPB *vs*. sham, p=0.06, CPB + D42 Tx *vs*. sham, p<0.01, CPB + D42 Tx *vs*. CPB, p=0.04. Test for overall treatment effect for Lung Compliance p<0.01.

**Table 4. Sensitivity Analysis: Experiment 2.**

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| **Intention to treat analysis** | **Mean (±SE)** | **Difference (95% CI)** |
| **Outcome** | **Sham****(n=7)** | **CPB** **(n=7)** | **CPB + D42 Tx (n=9)** | **CPB vs Sham** | **CPB + D42 Tx *vs* Sham** | **CPB + D42 Tx *vs*** **CPB** |
| **‡Lung Compliance (ml/cmH2O)** |  |  |  |  |  |  |
| Baseline | 39.14 (1.90) | 48.00 (3.60) | 39.78 (2.64) | 8.86(-1.94 to 19.66) | 0.63(-9.55 to 10.82) | -8.22(-18.41 to 1.96) |
| 1.5 Hours | 37.86 (1.67) | 41.42 (3.87) | 34.22 (3.04) | -5.34\*(-10.38 to -0.30) | -4.27(-8.56 to 0.01) | 1.07(-3.67 to 5.80) |
| 24 Hours | 40.71 (1.58) | 45.29 (3.70) | 37.57 (1.25) | -3.67(-7.44 to 0.11) | -7.13**†**(-10.50 to -3.76) | -3.46\*(-6.85 to -0.08) |

**‡** Least squares means, adjusted for baseline Lung Compliance estimated at 43.52. The test for an interaction between treatment and time was p=0.009. Data from post intervention time points was therefore reported individually. **\*** P<0.05, **†** P<0.01. CI = confidence interval (after Bonferroni adjustment), SE = standard error, CPB = Cardiopulmonary Bypass, Tx = Transfusion.

Pairwise comparisons (after Bonferroni adjustment) for Lung Compliance at 1.5hrs; CPB *vs*. sham, p=0.04, CPB + D42 Tx *vs*. sham, p=0.05, CPB + D42 Tx *vs*. CPB, p=1.000. Test for overall treatment effect for Lung Compliance p=0.02.

Pairwise comparisons (after Bonferroni adjustment) for Lung Compliance at 24hrs; CPB *vs*. sham, p=0.06, CPB + D42 Tx *vs*. sham, p<0.01, CPB + D42 Tx *vs*. CPB, p=0.04. Test for overall treatment effect for Lung Compliance p<0.01.