# SWIPE Trial Electronic Supplementary Material 2

| Table S1. Detailed list of ICU admission diagnoses | | |
|---|---|---|
| **Admission diagnosis** | **20% albumin group (n = 153)** | **4-5% albumin group (n = 168)** |
| Operative admission diagnosis, n (%) | | |
| Neurological | 0 | 2 (1.2) |
| Cardiovascular | 83 (54.3) | 71 (42.3) |
| Lung | 1 (0.7) | 1 (0.6) |
| Trauma | 0 | 2 (1.2) |
| Renal | 1 (0.7) | 2 (1.2) |
| Gynecology | 0 | 1 (0.6) |
| Orthopedic | 3 (2.0) | 6 (3.6) |
| Gastrointestinal | 23 (15.0) | 32 (19.1) |
| Nonoperative admission diagnosis, n (%) | | |
| Sepsis | 17 (11.1) | 18 (10.7) |
| Cardiovascular | 9 (5.9) | 8 (4.8) |
| Neurological | 1 (0.7) | 3 (1.8) |
| Respiratory | 5 (3.3) | 6 (3.6) |
| Metabolic | 0 | 1 (0.6) |
| Hematological | 0 | 1 (0.6) |
| Renal | 1 (0.7) | 3 (1.8) |
| Skeletal | 1 (0.7) | 0 |
| Trauma | 1 (0.7) | 1 (0.6) |
| Gastrointestinal | 7 (4.6) | 10 (6.0) |

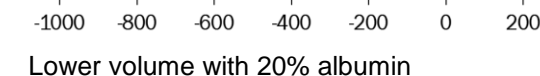| Table S2. Number (%) of patients with missing baseline data | | |
|---|---|---|
| **Characteristic** | **20% albumin group (n = 153)** | **4-5% albumin group (n = 168)** |
| Height | 22 (14.4%) | 31 (18.4%) |
| Weight | 5 (3.3%) | 9 (5.4%) |
| Body-mass index | 22 (14.4%) | 31 (18.4%) |
| Baseline creatinine | 4 (2.6%) | 5 (3.0%) |
| Baseline urea | 6 (3.9%) | 5 (3.0%) |
| Urea level on randomization | 1 (0.7%) | 1 (0.6%) |
| Hemoglobin level on randomization | 3 (2.0%) | 8 (4.8%) |
| Sodium level on randomization | 3 (2.0%) | 13 (7.7%) |
| Chloride level on randomization | 3 (2.0%) | 13 (7.7%) |
| Creatinine level on randomization | xx | xx |
| Lactate on randomization | 4 (2.6%) | 13 (7.7%) |
| Mean arterial pressure on randomization | 9 (5.9%) | 3 (1.8%) |
| Central venous pressure on randomization | 35 (22.9%) | 57 (33.9%) |


| Table S3. Transfusion of red blood cells, plasma and platelets during the first 48 hours after randomization | | | |
|---|---|---|---|
| **Variable** | **20% albumin group (n = 153)** | **4-5% albumin group (n = 168)** | **P Value** |
| Red blood cell transfusion, n (%) | 37 (24.2) | 43 (25.6) | 0.77 |
| Median (IQR) number of units | 2 (1, 2) | 1 (1, 3) | 0.92 |
| Plasma, n (%) | 6 (3.9) | 10 (6.0) | 0.40 |
| Median (IQR) number of units | 3 (2, 3) | 3 (2, 4) | 0.78 |
| Platelets, n (%) | 11 (7.2) | 12 (7.1) | 0.99 |
| Median (IQR) number of units | 1 (1, 2) | 1 (1, 2) | 0.47 |

| Variable | 20% albumin group (n = 153) | 4-5% albumin group (n = 168) |
|---|---|---|
| **Table S4**. Patients receiving non-study fluids for resuscitation during the first 48 hours after randomization | | |
| Compound sodium lactate, n (%) | 18 (11.8) | 9 (5.4) |
| Median (IQR) ml | 500 (270, 1000) | 750 (250, 1000) |
| PlasmaLyte, n (%) | 4 (2.6) | 2 (1.2) |
| Median (IQR) ml | 375 (250, 688) | 160 (115, 205) |
| 0.9% saline, n (%) | 5 (3.3) | 3 (1.8) |
| Median (IQR) ml | 250 (250, 500) | 250 (225, 1125) |
| Gelofusine, n (%) | 0 | 1 (0.6) |
| Median (IQR) ml | 0 | 500 |
| 4-5% albumin, n (%) | 8 (5.2) | - |
| Median (IQR) ml | 500 (438, 850) | - |
| 20% albumin, n (%) | - | 5 (3.0) |
| Median (IQR) ml | - | 100 (100, 100) |

**Table S5. Volume of resuscitation fluid during the first 48 hours after randomization in subgroups**

| Subgroup | 20% (n = 153) | 4-5% (n = 168) | Median Difference, ml (95% CI)* | P Value for heterogeneity |
|---|---|---|---|---|
| | *no. of patients* | | | |
| Operative admission | | | | 0.33 |
| Yes | 111 | 117 | -600 (-803 to -397) | |
| No | 42 | 51 | -450 (-785 to -115) | |
| Cardiovascular surgery | | | | 0.53 |
| Yes | 83 | 71 | -600 (-808 to -392) | |
| No | 70 | 97 | -700 (-898 to -502) | |
| Sepsis | | | | 0.054 |
| Yes | 17 | 18 | -200 (-551 to 151) | |
| No | 136 | 150 | -700 (-845 to -555) | |
| Admitted from ED | | | | 0.76 |
| Yes | 16 | 22 | -700 (-1096 to -304) | |
| No | 137 | 146 | -600 (-801 to -399) | |
| Vasopressor | | | | 0.07 |
| Yes | 56 | 64 | -650 (-755 to -545) | |
| No | 97 | 104 | -450 (-600 to -300) | |
| Mechanical ventilation | | | | 0.005 |
| Yes | 101 | 111 | -700 (-869 to -531) | |
| No | 52 | 57 | -450 (-571 to -329) | |

Axis: -1000  -800  -600  -400  -200  0  200

Lower volume with 20% albumin

*Difference between the 20% albumin group and the 4-5% albumin group on median regression analysis

**Table S6**. Per-protocol analysis of primary and secondary outcomes in the first 48 hours after randomization

| Outcome | 20% albumin group (n = 144) | 4-5% albumin group (n = 160) | 20% albumin vs. 4-5% albumin (95% CI) | P Value* |
|---|---|---|---|---|
| Median (IQR) volume of resuscitation fluid, ml | 300 (200, 500) | 935 (500, 1250) | -670 (-800 to -540) | <0.001 |
| Median (IQR) volume of study fluid, ml | 300 (200, 400) | 750 (500, 1250) | -450 (-546 to -354) | <0.001 |
| Median (IQR) total fluid input, ml | 3374 (2110, 4832) | 4243 (2634, 5847) | -877 (-1714 to -40) | 0.04 |
| Median (IQR) total fluid output, ml | 2948 (1813, 4393) | 3341 (2163, 4781) | -400 (-945 to 145) | 0.15 |
| Median (IQR) total urine output, ml | 2155 (1205, 3422) | 2407 (1439, 3663) | -188 (-743 to 367) | 0.51 |
| Mean (SD) cumulative fluid balance, ml | 345 (1781) | 982 (2046) | -637 (-1072 to -201) | 0.004 |
| Median (IQR) maximum noradrenaline infusion rate, µg/min | 2 (0, 7) | 3 (0, 10) | -1 (-3 to 1) | 0.33 |
| Mean (SD) maximum albumin level, g/L | 35 (6.1) | 32 (5.3) | 2.3 (1.0 to 3.6) | 0.001 |
| Mean (SD) maximum chloride level, mmol/L | 106 (4.4) | 107 (4.7) | -1.4 (-2.4 to -0.4) | 0.009 |
| Mean (SD) maximum sodium level, mmol/L | 140 (3.7) | 141 (4.3) | -0.9 (-1.8 to 0.03) | 0.057 |
| Median (IQR) maximum creatinine level, µmol/L | 96 (75, 132) | 98 (77, 151) | -3.0 (-17.6 to 11.6) | 0.69 |
| Median (IQR) maximum change in creatinine from baseline, % (n=306) | 11 (-1, 32) | 11 (-6, 35) | -0.3 (-8.3 to 7.7) | 0.94 |
| *P value derived using mean or median regression. | | | | |

**Table S7**. Sensitivity analysis of primary and secondary outcomes in the first 48 hours after randomization excluding patients who received non-study fluids for resuscitation

| Outcome | 20% albumin group (n = 120) | 4-5% albumin group (n = 147) | 20% albumin vs. 4-5% albumin (95% CI) | P Value* |
|---|---|---|---|---|
| Median (IQR) volume of resuscitation fluid, ml | 200 (200, 400) | 750 (500, 1250) | -550 (-689 to -411) | <0.001 |
| Median (IQR) volume of study fluid, ml | 200 (200, 400) | 750 (500, 1250) | -550 (-689 to -411) | <0.001 |
| Median (IQR) total fluid input, ml | 3353 (2039, 4832) | 4127 (2574, 5812) | -758 (-1698 to 182) | 0.11 |
| Median (IQR) total fluid output, ml | 2855 (1813, 4420) | 3355 (2150, 4771) | -490 (-1047 to 67) | 0.08 |
| Median (IQR) total urine output, ml | 2070 (1205, 3435) | 2423 (1425, 3590) | -348 (-953 to 257) | 0.26 |
| Mean (SD) cumulative fluid balance, ml | 277 (1842) | 848 (1959) | -571 (-1033 to -110) | 0.02 |
| Median (IQR) maximum noradrenaline infusion rate, μg/min | 2 (0, 7) | 3 (0, 9) | -1 (-3 to 1) | 0.34 |
| Mean (SD) maximum albumin level, g/L | 34 (5.9) | 32 (5.5) | 1.7 (0.4 to 3.1) | 0.01 |
| Mean (SD) maximum chloride level, mmol/L | 106 (4.5) | 107 (4.8) | -1.5 (-2.6 to -0.3) | 0.01 |
| Mean (SD) maximum sodium level, mmol/L | 140 (3.8) | 141 (4.4) | -0.9 (-1.9 to 0.1) | 0.07 |
| Median (IQR) maximum creatinine level, μmol/L | 96 (73, 132) | 100 (78, 152) | -4 (-18 to 10) | 0.56 |
| Median (IQR) maximum change in creatinine from baseline, % (n=306) | 10 (-2, 32) | 11 (-6, 34) | -1 (-9 to 7) | 0.81 |
| *P value derived using mean or median regression. | | | | |

| | Before imputation | | | After imputation | | |
|---|---|---|---|---|---|---|
| **Table S8**. Number of available data at baseline and the following 4 hours before and after imputation of missing data at hour 1-3. | | | | | | |
| **Variable** | **20% (n)** | **4-5% (n)** | **P Value[a]** | **20% (n)** | **4-5% (n)** | **P Value[a]** |
| Hemoglobin | | | 0.810 | | | 0.927 |
|    Baseline | 150 | 160 | | 150 | 160 | |
|    1 h after randomisation | 70 | 82 | | 141 | 151 | |
|    2 h after randomisation | 72 | 75 | | 139 | 146 | |
|    3 h after randomisation | 53 | 57 | | 123 | 133 | |
|    4 h after randomisation | 106 | 117 | | 106 | 117 | |
| Creatinine | | | 0.078 | | | 0.012 |
|    Baseline | 142 | 153 | | 142 | 153 | |
|    1 h after randomisation | 50 | 60 | | 106 | 101 | |
|    2 h after randomisation | 55 | 54 | | 106 | 102 | |
|    3 h after randomisation | 46 | 35 | | 101 | 98 | |
|    4 h after randomisation | 85 | 91 | | 85 | 91 | |
| [a]The P values for the between group comparison represent the interaction between group and time in the repeated-measures analysis of variance analysis | | | | | | |