### Supplemental material 1 Univariate analysis for severe surgical NEC

| Statistics | OR (95% CI) | p-Value |
|------------|-------------|---------|
| ANC, 10^9/L at NEC onset | 3.54(1.90-6.62) | 0.783(0.682-0.899) | 0.000 |
| ΔANC | -0.03(-2.28-2.11) | 1.248(1.107-1.407) | 0.000 |

Gestational age at birth, weeks

| ≤37 | 22(14.0) | 1 |
| <37, ≥32 | 46(29.3) | 0.689(0.234-2.030) | 0.500 |
| <32, ≥28 | 65(41.4) | 1.109(0.402-2.979) | 0.861 |
| <28 | 24(15.3) | 0.721(0.209-2.482) | 0.604 |

Birth weight, g

| ≥2500 | 26(16.6) | 1 |
| <2500, ≥1500 | 55(35.0) | 0.511(0.192-1.360) | 0.179 |
| <1500, ≥1000 | 51(32.5) | 0.568(0.212-1.520) | 0.260 |
| <1000 | 25(15.9) | 1.259(0.417-3.800) | 0.683 |

Antenatal dexamethasone (n%)

| None | 21(13.4) | 0.609(0.202-1.836) | 0.379 |
| Complete course | 44(28.0) | 0.909(0.342-2.418) | 0.850 |
| Partial course | 92(58.6) | 0.632(0.325-1.231) | 0.177 |

Breast milk (n%)

| None | 80(51.0) | 0.632(0.325-1.231) | 0.177 |
| Complete course | 55(35.0) | 0.511(0.192-1.360) | 0.179 |
| Partial course | 8(5.1) | 3.507(0.805-15.283) | 0.095 |

SGA (n%)

| None | 19(12.1) | 1.503(0.565-3.996) | 0.414 |
| Complete course | 47(29.9) | 3.328(1.627-6.808) | 0.001 |
| Partial course | 31(19.7) | 3.606(1.597-8.116) | 0.002 |

Enteral feed volume before onset, ml/kg

| 100(53.7-130) | 0.994(0.987-1.001) | 0.085 |

PDA (n%)

| None | 20(12.7) | 2.159(0.802-5.814) | 0.128 |
| Complete course | 47(29.9) | 3.328(1.627-6.808) | 0.001 |
| Partial course | 31(19.7) | 3.606(1.597-8.116) | 0.002 |

Pneumatosis (n%)

| None | 43(27.4) | 0.350(0.149-0.824) | 0.016 |
| Complete course | 47(29.9) | 3.328(1.627-6.808) | 0.001 |
| Partial course | 31(19.7) | 3.606(1.597-8.116) | 0.002 |

Plt, 10^9/L

| None | 213(142-266) | 0.996(0.993-1.000) | 0.044 |
| Complete course | 41(-38-134) | 1.001(0.998-1.004) | 0.472 |
| Partial course | 21.4(3.7-74.8) | 1.002(0.997-1.007) | 0.483 |

CRP, mg/L

| None | -19.3(-75.2,-2.5) | 0.998(0.993-1.003) | 0.477 |

### Notes

*SGA* small for gestational age, PDA patent ductus arteriosus.

The complete course of antenatal steroid was defined as prenatal glucocorticoids were used 4 times. The partial course was defined as prenatal glucocorticoids were used 1-3 times.

Transfusion was defined as transfusion therapy within 48 hours before onset of NEC.

ANC Neutrophil, (ΔANC) Neutrophil difference = ANC before NEC-onset - ANC at NEC-onset.

Plt platelet, Lac lactate, CRP C-reactive protein