Follow-Up Data and Machine Learning [Improve Mortality Predictions for Patients with Mechanical Circulatory Support](https://www.ahajournals.org/doi/pdf/10.1161/CIRCGEN.119.002877)

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**MAIN RESULTS**

Table 1: Patient characteristics selected for inclusion in the final mortality risk prediction model.

|  | | | **Hazard ratio (95% CI)** | |
| --- | --- | --- | --- | --- |
| **label** | **Number (%) missing values** | **Mean (SD) or Number (%)** | **Unadjusted** | **Adjusted** |
| *Pre-implant variables* | | | | |
| Patient age, years | 0 (0.00%) | 57.0 (12.9) | 1.35 (1.30, 1.41) | 1.25 (1.20, 1.30) |
| *Week 1 variables* | | | | |
| BUN, md/dL | 121 (0.96%) | 30.2 (20.8) | 1.30 (1.26, 1.33) | 1.07 (1.03, 1.10) |
| *Month 1 variables* | | | | |
| Total bilirubin, mg/dL | 2,669 (21%) | 1.19 (2.69) | 1.32 (1.30, 1.35) | 1.17 (1.14, 1.20) |
| BUN, mg/dL | 320 (2.5%) | 22.9 (16.9) | 1.31 (1.29, 1.34) | 1.13 (1.09, 1.16) |
| Platelet count | 338 (2.7%) | 296 (108) | 0.66 (0.63, 0.68) | 0.85 (0.82, 0.89) |
| Intubated | 180 (1.4%) | 1119 (8.97%) | 3.76 (3.43, 4.13) | 1.40 (1.23, 1.59) |
| Right heart failure, INO | 139 (1.1%) | 2102 (16.8%) | 2.49 (2.30, 2.71) | 1.31 (1.18, 1.44) |
| Followup status: outpatient | 103 (0.81%) | 7230 (57.6%) | 0.44 (0.41, 0.48) | 0.77 (0.71, 0.84) |
| White blood cell count | 335 (2.6%) | 9.24 (4.16) | 1.21 (1.19, 1.23) | 1.11 (1.09, 1.14) |
| SGOT | 2,704 (21%) | 41.0 (149) | 1.09 (1.08, 1.10) | 1.01 (0.99, 1.04) |
| LDH | 2,721 (21%) | 399 (305) | 1.11 (1.09, 1.14) | 1.06 (1.03, 1.09) |
| Albumin, g/dL | 3,011 (24%) | 3.21 (0.63) | 0.74 (0.71, 0.76) | 0.94 (0.91, 0.98) |
| On dialysis | 201 (1.6%) | 771 (6.19%) | 3.73 (3.36, 4.14) | 1.16 (1.02, 1.33) |
| Respiratory adverse event count | 0 (0.00%) | 0.14 (0.41) | 1.34 (1.31, 1.37) | 1.05 (1.01, 1.09) |
| Days w/out respiratory adverse event | 0 (0.00%) | 0.96 (0.17) | 0.78 (0.76, 0.81) | 0.96 (0.93, 1.00) |

Figure 1: Benchmark comparison of the reference and xgboost modeling algorithms.



**SUPPLEMENT**

Figure S1: Benchmark comparison of the empirical proportional hazards and xgboost modeling algorithms.

