**Supplemental Digital Content 4, Supplemental Table 4.** Multivariable logistic regression analysis, with ARDS as the dependent variable, for (a) driving pressure; (b) plateau pressure; (c) compliance; (d) mechanical power; and (e) PEEP.

1. **Driving Pressure**

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| --- | --- | --- | --- |
| **Variables** | **aOR** | **95% CI** | ***P*-value** |
| Age  | 0.99 | 0.98 - 1.00 | 0.039 |
| Race | 0.44 | 0.29 - 0.65 | <0.001 |
| Cirrhosis | 2.86 | 1.60 - 5.13 | <0.001 |
| Sepsis | 2.05 | 1.39 - 3.01 | <0.001 |
| Fluid balance day 1 | 1.01 | 1.00 - 1.02 | 0.060 |
| Arterial pH | 0.01 | 0.001 - 0.05 | <0.001 |
| PaO2:FiO2 | 0.99 | 0.98 - 0.99 | <0.001 |
| Driving pressure | 1.08 | 1.04 - 1.12 | <0.001 |

Removed from model for non-significance: gender (p = 0.42), BMI (p = 0.32), immunosuppression (p = 0.16), APACHE II (p = 0.75), lactate (p = 0.54).

PaO2: partial pressure of arterial oxygen; FiO2: fraction of inspired oxygen; APACHE: acute physiology and chronic health evaluation

1. **Plateau Pressure**

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| **Variables** | **aOR** | **95% CI** | ***P*-value** |
| Age  | 0.99 | 0.98 - 1.001 | 0.063 |
| Race | 0.40 | 0.27 - 0.60 | <0.001 |
| BMI | 0.98 | 0.96 - 0.99 | 0.043 |
| Cirrhosis | 2.94 | 1.63 - 5.31 | <0.001 |
| Sepsis | 2.04 | 1.38 - 3.01 | <0.001 |
| Arterial pH | 0.01 | 0.001 - 0.05 | <0.001 |
| PaO2:FiO2 | 0.99 | 0.98 - 0.993 | <0.001 |
| Plateau pressure | 1.12 | 1.08 - 1.17 | <0.001 |

Removed from model for non-significance: gender (p = 0.32), immunosuppression (p= 0.30), APACHE II (p= 0.57), lactate (p = 0.45), fluid balance day 1 (p= 0.15).

PaO2: partial pressure of arterial oxygen; FiO2: fraction of inspired oxygen; APACHE: acute physiology and chronic health evaluation

1. **Compliance**

|  |  |  |  |
| --- | --- | --- | --- |
| **Variables** | **aOR** | **95% CI** | ***P*-value** |
| Age | 0.99 | 0.98 - 0.99 | 0.039 |
| Race | 0.44 | 0.29 - 0.65 | <0.001 |
| Cirrhosis | 2.86 | 1.60 - 5.13 | 0.001 |
| Sepsis | 2.05 | 1.39 - 3.01 | <0.001 |
| Arterial pH | 0.01 | 0.001 - 0.05 | <0.001 |
| Fluid balance day 1 | 1.01 | 1.00 - 1.02 | 0.060 |
| PaO2:FiO2 | 0.99 | 0.988 - 0.993 | <0.001 |
| Compliance | 1.08 | 1.04 - 1.12 | <0.001 |

Removed from model for non-significance: gender (p = 0.42), immunosuppression (p = 0.16), BMI (p = 0.32), APACHE II (p = 0.75), lactate (p = 0.54).

PaO2: partial pressure of arterial oxygen; FiO2: fraction of inspired oxygen; APACHE: acute physiology and chronic health evaluation

1. **Mechanical Power**

|  |  |  |  |
| --- | --- | --- | --- |
| **Variables** | **aOR** | **95% CI** | ***P*-value** |
| Age | 0.99 | 0.98 - 1.000 | 0.042 |
| Race | 0.43 | 0.30 - 0.62 | <0.001 |
| Cirrhosis | 2.58 | 1.51 - 4.40 | <0.001 |
| Sepsis | 2.31 | 1.61 - 3.31 | <0.001 |
| Arterial pH | 0.001 | 0.001 - 0.002 | <0.001 |
| Mechanical power  | 1.03 | 1.00 - 1.06 | 0.029 |

Removed from model for non-significance: gender (p = 0.32), immunosuppression (p = 0.10), BMI (p = 0.29), APACHE II (p = 0.99), lactate (p = 0.48), fluid balance day 1 (p=0.12).

PaO2: partial pressure of arterial oxygen; FiO2: fraction of inspired oxygen; APACHE: acute physiology and chronic health evaluation

1. **PEEP**

|  |  |  |  |
| --- | --- | --- | --- |
| **Variables** | **aOR** | **95% CI** | ***P*-value** |
| Race | 0.47 | 0.32 - 0.70 | <0.001 |
| Cirrhosis | 2.82 | 1.56 - 5.10 | 0.001 |
| Sepsis | 1.99 | 1.35 - 2.93 | <0.001 |
| Arterial pH | 0.002 | 0.001 - 0.012 | 0.083 |
| PaO2:FiO2 | 0.99 | 0.98 - 0.994 | <0.001 |
| PEEP | 1.31 | 1.19 - 1.45 | <0.001 |

Removed from model for non-significance: age (p= 0.12), gender (p = 0.81), immunosuppression (p = 0.42), BMI (p = 0.11), APACHE II (p = 0.45), lactate (p = 0.24), fluid balance day 1 (p= 0.22).

PaO2: partial pressure of arterial oxygen; FiO2: fraction of inspired oxygen; APACHE: acute physiology and chronic health evaluation