SIRA EN PACIENTES QUEMADOS

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Residente de Medicina Interna
EDITORIAL

Happy 50th birthday ARDS!

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ACUTE RESPIRATORY DISTRESS
IN ADULTS

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Despite decades of research, the optimal way to apply PEEP remains a matter of debate. What is no longer a matter of debate is the fact that lung-protective ventilatory strategies can improve outcomes in ARDS patients, and likely in patients without ARDS.

The seminal contribution in this regard is the ARDSNet study [13] which demonstrated a 9% absolute mortality reduction by applying a low tidal volume, lung-protective strategy with limitation of plateau pressures. Over the past decade there have been a number of positive clinical trials [13–17], all of which are based on minimizing VILI (e.g., use of neuromuscular blocking agents [16] and prone ventilation [17]). This contrasts with the past 50 years during which there have been no positive clinical trials of pharmacological agents aimed at the underlying basic mechanisms of lung injury or repair [18]. This likely relates in part to the importance of VILI, but perhaps more importantly to the fact that the definitions of ARDS that we have had are all physiologically based, and hence may not identify the correct targets for pharmacological therapies—again pointing out the importance in identifying suitable biomarkers.

As intensivists, it is incumbent on us to consider not only our patients' short-term outcomes but also the long-term consequences. In this respect, another major advance over the past 20 years has been our increased understanding of the long-term physiology and quality of life of surviving ARDS, as well the psychological stresses on the family members and caregivers of ARDS survivors [19].

Clinicians have long recognized that not all patients with ARDS are alike. It now seems clear that the pathogenesis of most diseases is influenced by the host...
<table>
<thead>
<tr>
<th></th>
<th>Murray, 1988&lt;sup&gt;2&lt;/sup&gt;</th>
<th>AECC, 1994&lt;sup&gt;3&lt;/sup&gt;</th>
<th>Ferguson, 2005&lt;sup&gt;4&lt;/sup&gt;</th>
<th>Berlin, 2012&lt;sup&gt;5&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Onset</strong></td>
<td>Acute or chronic, not specified</td>
<td>Acute, not specified</td>
<td>Within 72 h</td>
<td>New or worsening within 1 week</td>
</tr>
<tr>
<td><strong>Risk factor</strong></td>
<td>Required</td>
<td>Not required</td>
<td>Required</td>
<td>Not required</td>
</tr>
<tr>
<td><strong>Oxygenation (mm Hg)</strong></td>
<td>PaO&lt;sub&gt;2&lt;/sub&gt;/FiO&lt;sub&gt;2&lt;/sub&gt; &gt;300 (0) PaO&lt;sub&gt;2&lt;/sub&gt;/FiO&lt;sub&gt;2&lt;/sub&gt; 225–299 (1) PaO&lt;sub&gt;2&lt;/sub&gt;/FiO&lt;sub&gt;2&lt;/sub&gt; 175–224 (2) PaO&lt;sub&gt;2&lt;/sub&gt;/FiO&lt;sub&gt;2&lt;/sub&gt; 100–174 (3) PaO&lt;sub&gt;2&lt;/sub&gt;/FiO&lt;sub&gt;2&lt;/sub&gt; &lt;100 (4)</td>
<td>Acute lung injury: PaO&lt;sub&gt;2&lt;/sub&gt;/FiO&lt;sub&gt;2&lt;/sub&gt; &lt;300 Acute respiratory distress syndrome: PaO&lt;sub&gt;2&lt;/sub&gt;/FiO&lt;sub&gt;2&lt;/sub&gt; ≤200</td>
<td>PaO&lt;sub&gt;2&lt;/sub&gt;/FiO&lt;sub&gt;2&lt;/sub&gt; &lt;200</td>
<td>Mild: PaO&lt;sub&gt;2&lt;/sub&gt; 200–300 Moderate: PaO&lt;sub&gt;2&lt;/sub&gt; 100–199 Severe: PaO&lt;sub&gt;2&lt;/sub&gt; &lt;100</td>
</tr>
<tr>
<td><strong>PEEP (cm H&lt;sub&gt;2&lt;/sub&gt;O)</strong></td>
<td>≤5 (0) 6–8 (1) 9–11 (2) 12–14 (3) ≥15 (4)</td>
<td>Not specified</td>
<td>≥10</td>
<td>Minimum PEEP of 5 required</td>
</tr>
<tr>
<td><strong>Infiltrates on chest radiograph</strong></td>
<td>No quadrants (0) One quadrant (1) Two quadrants (2) Three quadrants (3) Four quadrants (4)</td>
<td>Bilateral infiltrates on a frontal chest radiograph</td>
<td>Bilateral airspace disease involving two or more quadrants on a frontal chest radiograph</td>
<td>Bilateral infiltrates involving two or more quadrants on a frontal chest radiograph or CT</td>
</tr>
<tr>
<td><strong>Heart failure</strong></td>
<td>Pulmonary artery wedge pressure ≤17 mm Hg Absence of left atrial hypertension</td>
<td>No clinical evidence of congestive heart failure (based on pulmonary artery catheter with or without echocardiogram)</td>
<td>Left ventricular failure insufficient to solely account for clinical state</td>
<td></td>
</tr>
<tr>
<td><strong>Static compliance (mL/cm H&lt;sub&gt;2&lt;/sub&gt;O)</strong></td>
<td>≥80 (0) 60–79 (1) 40–59 (2) 20–39 (3) ≤19 (4)</td>
<td>Not specified</td>
<td>Static compliance &lt;50 (with patient sedated, tidal volume 8 mL/kg ideal bodyweight, PEEP ≥10)</td>
<td>Removed</td>
</tr>
<tr>
<td><strong>Severity</strong></td>
<td>Mild Moderate Severe</td>
<td>Based on oxygenation criteria</td>
<td>--</td>
<td>Based on oxygenation criteria</td>
</tr>
<tr>
<td><strong>Specificity for diffuse alveolar damage</strong></td>
<td>Autopsy: 74%&lt;sup&gt;6&lt;/sup&gt; (lung injury score ≥2.5) Biopsy: 29%,&lt;sup&gt;9&lt;/sup&gt; 70%,&lt;sup&gt;9&lt;/sup&gt; 47%,&lt;sup&gt;11&lt;/sup&gt; 40%&lt;sup&gt;12&lt;/sup&gt;</td>
<td>Autopsy: 30%&lt;sup&gt;,6&lt;/sup&gt; 50%&lt;sup&gt;,7&lt;/sup&gt; 66%&lt;sup&gt;,8&lt;/sup&gt;</td>
<td>Autopsy: 69%&lt;sup&gt;6&lt;/sup&gt;</td>
<td>Autopsy: 45%&lt;sup&gt;,13&lt;/sup&gt; Biopsy: 58%&lt;sup&gt;,14&lt;/sup&gt;</td>
</tr>
</tbody>
</table>
The new definition for acute lung injury and acute respiratory distress syndrome: is there room for improvement?

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www.co-criticalcare.com

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Number 1
February 2013
Adapted with permission from [15].

Table 1. Lung Injury Score

<table>
<thead>
<tr>
<th>Score</th>
<th>chest X-ray, number of quadrants</th>
<th>Oxygenation, P/F ratio</th>
<th>PEEP, cm H₂O</th>
<th>Lung compliance, ml/cm H₂O</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>None</td>
<td>≥300</td>
<td>≤5</td>
<td>≥80</td>
</tr>
<tr>
<td>1</td>
<td>1</td>
<td>225–299</td>
<td>6–8</td>
<td>60–79</td>
</tr>
<tr>
<td>2</td>
<td>2</td>
<td>175–224</td>
<td>9–11</td>
<td>40–59</td>
</tr>
<tr>
<td>3</td>
<td>3</td>
<td>100–174</td>
<td>12–14</td>
<td>20–39</td>
</tr>
<tr>
<td>4</td>
<td>4</td>
<td>&lt;100</td>
<td>≥15</td>
<td>≤19</td>
</tr>
</tbody>
</table>

Score

Adapted with permission from [2].

PEEP, positive end-expiratory pressure.

Table 2. Criteria for acute lung injury (ALI) and acute respiratory distress syndrome (ARDS)

<table>
<thead>
<tr>
<th>Timing</th>
<th>Oxygenation, P/F ratio</th>
<th>Frontal chest X-ray</th>
<th>Pulmonary artery wedge pressure</th>
</tr>
</thead>
<tbody>
<tr>
<td>ALI</td>
<td>Acute onset</td>
<td>≤300 mmHg</td>
<td>Bilateral infiltrates</td>
</tr>
<tr>
<td>ARDS</td>
<td>≤200 mmHg</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
edema because of increased permeability of the alveolar–capillary membrane, and clinically characterized by decreased oxygenation because of increased venous admixture, decreased lung compliance, increased physiological dead space, and bilateral radiographic opacities [better characterized as increased lung weight and decreased aeration on computed tomography (CT) evaluation].

The first step of the revision was to agree on a draft definition that addressed the limitations of the AECC definition, yet maintained compatibility with it. The proposed definition comprised three mutually exclusive categories of hypoxemia: mild (200 mmHg < \( P/F \) \( < \) 300 mmHg), moderate (100 mmHg < \( P/F \) \( < \) 200 mmHg), and severe (\( P/F \) \( < \) 100 mmHg), and inclusion of four ancillary variables to restrict the definition of severe ARDS: high radiographic score (3–4 quadrants), low respiratory system compliance (\( < \) 40 ml/cm H\(_2\)O), PEEP (\( < \) 10 cm H\(_2\)O), and corrected minute ventilation (\( < \) 10 l/min).

This draft definition was subsequently tested on 4188 patients with ARDS from 4 multicenter clinical datasets and 269 patients from 3 single-center datasets containing physiologic information. The use of the four ancillary variables decreased by half (from 28 to 14%) the number of patients classified as severe ARDS, but did not add prediction power for mortality (mortality of the more restricted sample = 45 vs. 45% when considering the simpler definition). Therefore, the panel removed the ancillary variables from the definition.

The final Berlin definition (Table 3) clarified several aspects of the AECC definition, while retaining its ease of use and still improving the predictive ability for death. More specifically, the Berlin definition created a criterion of acuteness of disease onset, reclassified the oxygenation criterion, included a minimum PEEP value for the diagnosis, redefined the exclusion criterion based on the presence of hydrostatic edema, and reformulated the radiologic criterion.

### Table 3. The Berlin definition of the acute respiratory distress syndrome (ARDS)

<table>
<thead>
<tr>
<th>ARDS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Timing</strong></td>
</tr>
<tr>
<td>Within 1 week of a known clinical insult or worsening respiratory symptoms</td>
</tr>
<tr>
<td><strong>Chest imaging</strong></td>
</tr>
<tr>
<td>Bilateral opacities – not fully explained by effusions, lobar/lung collapse, or nodules</td>
</tr>
<tr>
<td><strong>Origin of edema</strong></td>
</tr>
<tr>
<td>Not of cardiac origin or fluid overload. Objective assessment required in the absence of risk factors for ARDS</td>
</tr>
<tr>
<td><strong>Oxygenation (P/F ratio) (mmHg)</strong></td>
</tr>
<tr>
<td><strong>Mild</strong></td>
</tr>
<tr>
<td>(200–300) with PEEP or CPAP ( \geq ) 5 cm H(_2)O</td>
</tr>
<tr>
<td><strong>Moderate</strong></td>
</tr>
<tr>
<td>(100–200) with PEEP ( \geq ) 5 cm H(_2)O</td>
</tr>
<tr>
<td><strong>Severe</strong></td>
</tr>
<tr>
<td>( \leq ) 100 with PEEP ( \geq ) 5 cm H(_2)O</td>
</tr>
</tbody>
</table>

Adapted with permission from [15].

CPAP, continuous positive airway pressure; PEEP, positive end-expiratory pressure.
The definition of ARDS revisited: 20 years later

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A comparison of ARDS definitions:

**Acute Lung Injury**
- P/F ≤ 300 mmHg

**ARDS**
- P/F ≤ 200 mmHg

**Mild ARDS**
- 200 < PaO$_2$/FiO$_2$ ≤ 300 mmHg
- PEEP/CPAP ≥ 5 cm H$_2$O

**Moderate ARDS**
- 100 < PaO$_2$/FiO$_2$ ≤ 200 mmHg
- PEEP ≥ 5 cm H$_2$O

**Severe ARDS**
- PaO$_2$/FiO$_2$ < 100 mmHg
- PEEP ≥ 5 cm H$_2$O
The Acute Respiratory Distress Syndrome (ARDS) in mechanically ventilated burn patients: An analysis of risk factors, clinical features, and outcomes using the Berlin ARDS definition

Robert Cartotto *, Zeyu Li, Steven Hanna, Stefania Spano, Donna Wood, Karen Chung, Fernando Camacho

Ross Tilley Burn Centre, Toronto, Canada
OBJETIVO

• Aplicar los criterios de Berlín en pacientes quemados

• Población civil

• Determinar:
  • Severidad
  • Incidencia, tiempo de aparición, etiología
  • Factores de riesgo, días de ventilación mecánica, Mortalidad
Retrospectivo
1/01/2007 a 1/06/2014

INCLUSIÓN
Todos los pacientes con VM > 48 horas
Pacientes quemados

EXCLUSIÓN
No quemados
SCTQ <1%
Sin lesiones por inhalación
VM <48 hrs
Muerte
Mejoría >24 horas de admisión
• Determinación de líquidos a las 24 y 48 horas

• Líquidos previos al ingreso

• Media de PaO2/FiO2, cada 24 horas
Potenciales agresores
(“Factores de riesgo”)

- Quemadura
- Lesión por inhalación
- Sepsis
- Neumonía asociada a ventilador
- Broncoasporación
Radiografía de tórax

- Hipoxemia, 7 días, asociado a FR
- Expertos en pacientes críticos
- Cegados
- Consistente o no con SIRA
Ventilación Mecánica

- **Vt 6-8 ml/ kg/ predicho**
- Asistido- Controlado - Volumen
- **Presión plateau < 30 cmH20**
- PaO2 55-88 mmHg
- Saturación 88-95%
- pH 7.30-7.45
• Reanimación inicial: Parkland

• Gasto urinario 0-5 ml/

• **Administración de albúmina (5%), después de 8 horas, en >30% SCTQ**

• Cirugía 5 a 7 días

• Transfusión, valores de Hb < 7 g/dL
RESULTADOS

• 48 años (35-60), 24% mujeres

• SCTQ **28%** (18-40)

• Total del espesor de la SCTQ **12.3 %**

• **39** pacientes (24%) > 40% SCTQ
RESULTADOS

- **Todos** los pacientes: Fibrobroncoscopia

- **Lesión por inhalación 61%**
  - Sin asociación con SCTQ
  - Mayor requerimientos de volumen a las 24 y 48 horas
RESULTADOS

• VM 17 días

• Estancia 34 días

• Mortalidad 14.2 %
Desarrollo de SIRA

• 70 pacientes (43%)
• Día 3
• 86% en la primera semana
Quemadura 19%

Lesión por inhalación 47%

NAV 24%

Sepsis 9%

Broncoaspiración 1%
Table 1 – Comparison of subjects that did not develop ARDS with subjects that did develop ARDS.

<table>
<thead>
<tr>
<th></th>
<th>No ARDS, n = 92</th>
<th>ARDS, n = 70</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Median age (Q1–Q3), years</td>
<td>45 (30.0–60.0)</td>
<td>49.5 (39.8–60.3)</td>
<td>0.245&lt;sup&gt;a&lt;/sup&gt;</td>
</tr>
<tr>
<td>Female gender, n (%)</td>
<td>25 (27.2)</td>
<td>14 (20.0)</td>
<td>0.290&lt;sup&gt;b&lt;/sup&gt;</td>
</tr>
<tr>
<td>Median % TBSA burn (Q1–Q3)</td>
<td>24.8 (17.1–35)</td>
<td>30.5 (23.1–47)</td>
<td>0.007&lt;sup&gt;a&lt;/sup&gt;</td>
</tr>
<tr>
<td>Median % BSA full thickness burn (Q1–Q3)</td>
<td>7 (0.0–22.1)</td>
<td>20.5 (5.4–35.5)</td>
<td>0.001&lt;sup&gt;a&lt;/sup&gt;</td>
</tr>
<tr>
<td>Inhalation injury n (%)</td>
<td>53 (57.6)</td>
<td>47 (67.1)</td>
<td>0.216&lt;sup&gt;b&lt;/sup&gt;</td>
</tr>
<tr>
<td>Median 24 h fluids (Q1–Q3), ml/kg/%burn</td>
<td>6.6 (4.8–8.4)</td>
<td>6.3 (5.0–8.6)</td>
<td>0.810&lt;sup&gt;a&lt;/sup&gt;</td>
</tr>
<tr>
<td>Median 48 h fluids (Q1–Q3), ml/kg/%burn</td>
<td>9.4 (7.1–15.1)</td>
<td>9.8 (7.6–12.2)</td>
<td>0.816&lt;sup&gt;a&lt;/sup&gt;</td>
</tr>
<tr>
<td>Median duration ventilation in survivors (Q1–Q3), days</td>
<td>15.5 (8.3–23.0)</td>
<td>21 (13.0–34.0)</td>
<td>0.001&lt;sup&gt;a&lt;/sup&gt;</td>
</tr>
<tr>
<td>Median ventilator-free days/1st 30 days (Q1–Q3)</td>
<td>13 (3.3–20.0)</td>
<td>6 (0.0–16.0)</td>
<td>0.002&lt;sup&gt;a&lt;/sup&gt;</td>
</tr>
<tr>
<td>Mortality, n (%)</td>
<td>12 (13)</td>
<td>11 (15.7)</td>
<td>0.629&lt;sup&gt;b&lt;/sup&gt;</td>
</tr>
</tbody>
</table>

<sup>a</sup> p value using Mann–Whitney Test.
<sup>b</sup> p value using X² test.
• SIRA, % SCTQ mayor y mayor espesor

• **No** hubo diferencia significativa entre los pacientes que presentaron lesión por inhalación y que los que presentaron SIRA y los que no presentaron SIRA

• Sin diferencia en la reanimación de volumen
Table 2 – Comparison of subjects that did not develop ARDS with subjects that developed mild, moderate, or severe ARDS.

<table>
<thead>
<tr>
<th></th>
<th>No ARDS, n = 92</th>
<th>Mild ARDS, n = 23</th>
<th>Moderate ARDS, n = 43</th>
<th>Severe ARDS, n = 4</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Median age (Q1–Q3), years</td>
<td>45 (30.0–60.0)</td>
<td>50 (46.0–59.0)</td>
<td>49 (36–61)</td>
<td>47.5 (41.8–51.5)</td>
<td>0.523&lt;sup&gt;a&lt;/sup&gt;</td>
</tr>
<tr>
<td>Female gender, n (%)</td>
<td>25 (27.2)</td>
<td>5 (21.7)</td>
<td>7 (16.3)</td>
<td>2 (50.0)</td>
<td>0.291&lt;sup&gt;b&lt;/sup&gt;</td>
</tr>
<tr>
<td>Median % TBSA burn (Q1–Q3)</td>
<td>24.8 (17.1–35.0)</td>
<td>28.5 (23.5–47.0)</td>
<td>31 (22.0–45.0)</td>
<td>32.5 (25.0–38.6)</td>
<td>0.083&lt;sup&gt;a&lt;/sup&gt;</td>
</tr>
<tr>
<td>Median % TBSA full thickness burn (Q1–Q3)</td>
<td>7 (0.0–22.1)</td>
<td>6.5 (0.75–30.0)</td>
<td>24 (9.0–38.0)</td>
<td>24.5(18.9–27.4)</td>
<td>0.003&lt;sup&gt;a&lt;/sup&gt;</td>
</tr>
<tr>
<td>Inhalation injury, n (%)</td>
<td>53 (57.6)</td>
<td>15 (65.2)</td>
<td>30 (69.8)</td>
<td>1 (25.0)</td>
<td>0.237&lt;sup&gt;b&lt;/sup&gt;</td>
</tr>
<tr>
<td>Median 24 h fluids (Q1–Q3), ml/kg/%burn</td>
<td>6.6 (4.8–8.4)</td>
<td>5.1 (4.0–7.3)</td>
<td>6.7 (5.5–9.3)</td>
<td>6.7 (6.2–7.3)</td>
<td>0.219&lt;sup&gt;a&lt;/sup&gt;</td>
</tr>
<tr>
<td>Median 48 h fluids (Q1–Q3), ml/kg/%burn</td>
<td>9.4 (7.1–15.1)</td>
<td>8.7 (7.0–10.9)</td>
<td>9.9 (8.5–13.4)</td>
<td>9.2 (8.1–12.0)</td>
<td>0.565&lt;sup&gt;a&lt;/sup&gt;</td>
</tr>
<tr>
<td>Median duration ventilation in survivors (Q1–Q3), days</td>
<td>15.5 (8.3–23.0)</td>
<td>15 (12.0–34.0)</td>
<td>26 (15.8–38.8) **</td>
<td>27 (range 20.0–34.0)</td>
<td>0.001&lt;sup&gt;a&lt;/sup&gt;</td>
</tr>
<tr>
<td>Median ventilator-free days/1st 30 days (Q1–Q3)</td>
<td>13 (3.3–20.0)</td>
<td>13 (0.0–18.0)</td>
<td>3(0.0–14) **</td>
<td>0 (0.0–3.3) **</td>
<td>0.004&lt;sup&gt;a&lt;/sup&gt;</td>
</tr>
<tr>
<td>Mortality, n (%)</td>
<td>12 (13)</td>
<td>0 (0)</td>
<td>9 (20.9)</td>
<td>2 (50)</td>
<td>0.016&lt;sup&gt;b&lt;/sup&gt;</td>
</tr>
</tbody>
</table>

<sup>a</sup> p value using Kruskal–Wallis Test.

<sup>b</sup> p value using Fischer's Exact Test. The p value is not significant after adjustment for multiple comparisons.

<sup>*</sup> p < 0.05 by post hoc Conover–Inman pairwise comparisons vs. no ARDS and mild ARDS.

<sup>**</sup> p < 0.05 by post hoc Conover–Inman pairwise comparison vs. no ARDS.
**Figures 1A and 1B:**

- **Figure 1A:**
  - Estimated Probability vs. % TBSA Burn
  - Mild
  - Moderate
  - Severe

- **Figure 1B:**
  - Estimated Probability vs. % BSA Full Thickness Burn
  - Mild
  - Moderate
  - Severe
• Mediana de % SCTQ y del espesor, al aumentar, aumenta la gravedad de SIRA

• No existió asociación con edad, género, lesión por inhalación, reanimación inicial
• MAYOR MORTALIDAD MODERADO A SEVERO

• MAYOR DIAS DE ESTANCIA INTRAHOSPITALARIA

• MAYOR DIAS DE VENTILACIÓN MECÁNICA
Table 3 – Univariate logistic regression analysis examining odds ratios (OR) with 95% confidence limits for probability of death associated with age, burn size, full thickness burn size, presence of inhalation injury, moderate ARDS, and severe ARDS.

<table>
<thead>
<tr>
<th>Variable</th>
<th>OR point estimate</th>
<th>95% Wald confidence limits</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (years)</td>
<td>1.04</td>
<td>1.02–1.07</td>
<td>0.002</td>
</tr>
<tr>
<td>%TBSA burn</td>
<td>1.01</td>
<td>0.98–1.03</td>
<td>0.660</td>
</tr>
<tr>
<td>% full thickness burn</td>
<td>1.01</td>
<td>0.99–1.04</td>
<td>0.347</td>
</tr>
<tr>
<td>Inhalation injury</td>
<td>1.91</td>
<td>0.71–5.15</td>
<td>0.200</td>
</tr>
<tr>
<td>Moderate ARDS</td>
<td>1.99</td>
<td>0.79–4.99</td>
<td>0.145</td>
</tr>
<tr>
<td>Severe ARDS</td>
<td>6.52</td>
<td>0.87–48.84</td>
<td>0.07</td>
</tr>
</tbody>
</table>
DISCUSIÓN

• Incidencia 43%

• 86% en la primer semana

• Superficie corporal y espesor, fueron predictores de SIRA moderado a severo

• Lesión por inhalación, no se asocio con el desarrollo de SIRA
Mayor gravedad > DVM < DLVM
Conclusiones

• 40% de los pacientes quemados con ventilación mecánica cumplen criterios de Berlin

• Aparentemente el desarrollo de SIRA moderado y grave, se relaciona con la extensión y grado de la quemadura, no así la lesión por inhalación

• Gravedad de SIRA se asocia con mayor mortalidad
CONCLUSIONES

• Lo tradicional no es ciencia

• La quemadura por inhalación, no es equivale a SIRA

• Existe mayor riesgo en quemadura por inhalación, pero no es regla

• Uso de albúmina de manera temprana

• Reanimación inicial restrictiva, benéfica

• Medidas de protección pulmonar en todos los pacientes quemados