Benchmarking Intensive Care Physiotherapy Staffing in Australian Tertiary Hospitals

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Asia Pacific Critical Care
2008 Congress
Celebration of Intensive Care
Past Present and Future
Sydney Convention & Exhibition Centre
Darling Harbour, Australia
30 October - 2 November 2008
Congress Guide
<table>
<thead>
<tr>
<th>Hospital ≤ 500 beds</th>
<th>Hospital &gt; 500 beds</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean (SD)</td>
<td>Mean (SD)</td>
</tr>
<tr>
<td>Current Beds/FTE</td>
<td>12.4 (3.7)</td>
</tr>
<tr>
<td>Workdays</td>
<td>20 (2.5)</td>
</tr>
<tr>
<td>Weekend FTE</td>
<td>11 (2.8)</td>
</tr>
<tr>
<td>Workdays</td>
<td>11 (2.8)</td>
</tr>
<tr>
<td>Weekends</td>
<td>12 (2.8)</td>
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</tbody>
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(30 = Standard Deviation; 0 = Occasions of Service)

The overall difference between current and ideal beds-to-FTE ratios was statistically significant (F(1,0.05)). The average staffing level on weekends was lower than on weekdays in both hospital groups. Hospitals with > 500 beds tended to use more nurses.

Conclusions: Respondents indicated a desire for higher physiotherapy staff levels. The physiotherapy workforce in larger tertiary hospitals varies from that of smaller tertiary hospitals in Australia and would benefit from increased staff levels. This study could be used to guide future physiotherapy staff allocation in ICU and to understand staff levels and other human resource issues.

### COMPARATIVE ANALYSIS ON THE TIMING OF TRACHEOSTOMY DURING MECHANICAL VENTILATION

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Ewha Womans University, Seoul, South Korea

Despite widespread use of tracheostomy in ICU, it is still a controversial issue to define the best timing of change from endotracheal intubation to tracheostomy under the prolonged mechanical ventilation. This study was designed to compare clinical parameters between early tracheostomy (ET) and late tracheostomy (LT).

A prospective study was done in 35 medical and 15 surgical ICU patients with observations during 28 days from tracheostomy in terms of ET group (n=25) vs LT group (n=25). The reference date between ET and LT was defined as 7th day from intubation.

The mean age was 46±16 years in ET and 63±9 years in LT. APACHE II score in each time of observation and tracheostomy were slightly higher in LT but not statistically significant. Day to day APACHE II score were not different between two groups during an observation period until 7th day from tracheostomy.

Occurrence of nosocomial infections worsening from mechanical ventilation and mortality showed no significant difference between two groups with observation period from 28 days from tracheostomy. The mortality was increased as the APACHE II score up to 7 days from tracheostomy was increased. However, there were no increase in mortality in term of time of tracheostomy and days of ventilator use before tracheostomy.

There was no clinical benefit of ET vs LT in terms of changes of severity index, nosocomial infection, duration of ventilatory support, and mortality. It suggests that the proper time of tracheostomy is better to be decided on the clinical judgment.

### ASSESSMENT OF PLASMA AND TISSUE LACTATE BY MEANS OF SUBCUTANEOUS MICRODIALYSIS DURING SEPTIC SHOCK: CASES WITH BACTEREMIA (BA) VS. NONBACTEREMIA (NON-BA).

K Matsumoto, S Fujikawa, H Takahashi, M Yanai, Y Takei

St Marianna University, Kawasaki-City, Japan

Introduction: Plasma lactate has been used as a better marker of tissue hypoperfusion in patients with sepsis. However, we hypothesized that there can be a difference between plasma and tissue lactate in septic shock. We investigated plasma and tissue lactate in patients for an assessment of difference and correlation in both groups.

Methods: Cases with septic shock were enrolled between April 2003 and March 2006 in a mixed ICU at a tertiary care hospital in Japan. Microdialysis (DAV/Microdialysis) was used for measuring tissue lactate. Plasma and tissue lactate of cases with BA and Non-BA were measured 3 times with 8-hour intervals after ICU admission. Then two groups were compared and evaluated whether plasma lactate was correlated with tissue lactate. All data were reported as medians and interquartile ranges (IQR). Mann-Whitney U test and Spearman's correlation were used for statistical analysis and P<0.05 was considered statistically significant.

Results: Fourteen cases were evaluated. No difference of APACHE II score was observed in BA and Non-BA. Tissue lactate level (mmol/L) in BA median 3.8, IQR 9.5-54) was significantly higher than in Non-BA median 1.9, IQR 1.6-9.8 (P=0.012). Tissue lactate was correlated with plasma lactate in both BA (P=0.005) and Non-BA (P=0.012).

Conclusions: Our data suggested that tissue lactate was more prominent in septic patients with BA than those with Non-BA. Tissue lactate measured by Microdialysis and plasma lactate were correlated in both BA and Non-BA groups.

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Results: Fourteen cases were evaluated. No difference of APACHE II score was observed in BA and Non-BA. Tissue lactate level (mmol/L) in BA median 3.8, IQR 1.9-5.4) was significantly higher than in Non-BA median 1.9, IQR 1.2-9.8 (P=0.012). Tissue lactate was correlated with plasma lactate in both BA (P=0.005) and Non-BA (P=0.012).

Conclusions: Our data suggested that tissue lactate was more prominent in septic patients with BA than those with Non-BA. Tissue lactate measured by Microdialysis and plasma lactate were correlated in both BA and Non-BA groups.