Daily weanscreen in mechanically ventilated patients, effects on sedation, analgesics and duration.

Authors: J. van Rosmalen, F. van Beers, A. van Hees, P. Van Berkom, P. Vos, J.A.H. van Oers
St. Elisabeth Hospital, ICU, Tilburg, Netherlands

Introduction
The duration of mechanical ventilation (MV-duration) should be limited as much as possible to avoid complications.

Objectives
The aim of the study was to find out the impact of the implementation of a daily weanscreen on MV-duration.

Setting
A 20-bed mixed medical- (neuro-) surgical Intensive Care Unit of a teaching hospital.

Methods
In 2009 the sedation goal was prescribed each day by the intensivist. In 2010 we introduced a four-interventions weanscreen protocol, including:

1. Daily Spontaneous Awakening Trial (SAT)
2. Rapid Shallow Breathing Index (RSBI)
3. Spontaneous Breathing Trial (SBT)
4. MD enumerates reason to continue.

From January to December 2010 we assessed all ventilated patients every day from Monday till Friday. The subsequent four steps of the weanscreen protocol were carried out by a ventilation practitioner (RN) to promote extubation. The amount of sedatives per year was divided by the number of ventilated patients, resulting in an average dose midazolam/propofol/morphine per patient. The MV-duration was evaluated and compared with 2009.

Results
The 672 patients in 2010 were compared to 594 patients in 2009. SAPS II was the same in both cohorts. Together with a small increase in the use of propofol we observed a substantial reduction in the use of midazolam and morphine. No significant difference was found in the MV-duration (Mann-Witney U test).

<table>
<thead>
<tr>
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<th>2009</th>
<th>2010</th>
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<tbody>
<tr>
<td>Patients</td>
<td>594</td>
<td>672</td>
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<tr>
<td>SAPS II (mean)</td>
<td>50</td>
<td>50</td>
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<tr>
<td>MV-duration hours [median + IQR]</td>
<td>42 (15-132)</td>
<td>38 (15-135)</td>
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<tr>
<td>Midazolam (mg/patient)</td>
<td>51.7</td>
<td>39.3</td>
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<td>Propofol (mg/patient)</td>
<td>2626</td>
<td>2795</td>
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<tr>
<td>Morphine (mg/patient)</td>
<td>251</td>
<td>200</td>
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Conclusions
In our population we succeeded in a reduction in the use of midazolam and morphine with a daily four-component weanscreen. Surprisingly, no significant difference was found in the MV-duration. This study has been unable to demonstrate that combining four evidence-based interventions impacts MV-duration. A possible explanation for this is the heterogeneity of our cohort and the already short MV-duration.

References: