qCON publication list.
Introduction.

The qCON development used a database where including data from patients anaesthetized with the most common anaesthetics, both volatile and TIVA. The reference was Auditory Evoked Potentials, which has an anatomically identifiable origin, and has been considered the “holy grail” for monitoring depth of anaesthesia.

The essential element in the qCON algorithms is the Adaptive Neuro Fuzzy Inference System (ANFIS). The ANFIS combines inputs derived from the EEG to form the final index of hypnotic effect. ANFIS is a fuzzy logic model tuned with a backpropagation algorithm known from artificial neural networks.

One of the landmark studies in this list was published by Chan et al 2005 who showed (using a predecessor to the qCON) that too deep anaesthesia causes increased time to wake up, increased cardiac morbidities and increased time to wound healing. Therefore a qCON monitor is essential to ensure that too deep anaesthesia does not occur over prolonged periods.

Another important finding was done by Valencia and Henneberg (ESA 2013) which showed that peroperative anaesthesia affects the morphine consumption post operatively. A qCON larger than 55 for more than 5 % of the total anaesthesia time caused a morphine increase to 0.23 mg/kg versus 0.17 mg/kg with the PCA pump.

Valencia JF, Henneberg SW
Peroperative depth of anaesthesia, assessed with the qCON may reduce the postoperative opioid

<table>
<thead>
<tr>
<th>Group High</th>
<th>Group Low</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of patients</td>
<td>12</td>
</tr>
<tr>
<td>qCON &gt; 55</td>
<td>&gt; 5% of registration time</td>
</tr>
</tbody>
</table>

![Graph showing morphine consumption](image-url)
Publications


6 Pineda P, Jensen EW, Valencia JF, Jospin M. Monitoring Hypnotic Effect with qCON During General Anaesthesia, Society for Technology in Anaesthesia (STA), A43, Orlando, January 2014


8 Valencia JF, Henneberg SW Perioperative depth of anaesthesia, assessed with the qCON may reduce the postoperative opioid requirements. Eur J Anest, ESA Barcelona, 2013


10 Valencia JF, Borrat X, Gambus PL Validation of a New Index, qCON, for Assessment of the Level of Consciousness During Sedation. Anesthesiology A 640, ASA Washington 2012


14 Chan MT, Gin T, Law B, Liu KK
Quality of Recovery after AEP-Guided Anesthesia. Results of a Randomized Trial Anaesthesia and Intensive Care, The Chinese University of Hong Kong, A48, Anesthesiology 2005.


