

## **Accuracy of Respiratory Rate Monitoring using a Non-Invasive Acoustic Method after General Anaesthesia.**

Mimoz O., Benard T., Gaucher A., Frasca D., Debaene B. *Br J Anaesth.* 2012 May;108(5):872-5.

### **Background**

Respiratory rate should be monitored continuously in the post-anaesthesia care unit (PACU) to avoid any delay in the detection of respiratory depression. Capnometry is the standard of care but in extubated patients requires a nasal cannula or a face mask that may be poorly tolerated or can be dislodged, leading to errors in data acquisition and false alarms. The value of a new non-invasive acoustic monitor in this setting has not been fully investigated.

### **Methods**

Adult patients admitted to the PACU after general anaesthesia were included. After tracheal extubation, an adhesive sensor with an integrated acoustic transducer (RRa™) was placed on the patient's throat and connected to its monitor while the patient breathed through a face mask with a carbon dioxide sampling port (Capnomask™) connected to a capnometer. Both the acoustic monitor and the capnometer were connected to a computer to record one pair of data per second for up to 60 min.

### **Results**

Fifty-two patients, mean (range) age 54 (22-84) yr and BMI 26 (19-39) kg m<sup>-2</sup>, were studied. Compared with capnometry, the bias and limits of agreement of the acoustic method were 0 (-1.4-1.4) bpm. The acoustic sensor was well tolerated while the face mask was removed by eight patients, leading to study discontinuation in two patients.

### **Conclusions**

In extubated patients, continuous assessment of respiration rate with an acoustic monitor correlated well with capnometry.