Apnea-Sat Alert

Identification of Apnea and Oxygen Desaturation During Capnography/Oximetry Monitoring

Apnea and oxygen desaturation are common occurrences for many hospitalized patients. Studies have shown that as many as 88 percent of hospitalized patients may be at risk of recurrent apneas.\textsuperscript{1,2} It is generally agreed that only a small minority of these patients are identified and treated.\textsuperscript{3} Apnea syndromes may be caused or exacerbated by acute conditions, comorbidities, sleep disruption or medications (e.g., postoperative opioids).\textsuperscript{4}

In addition, a significant percentage of COPD,\textsuperscript{5} heart failure,\textsuperscript{6} and neuromuscular patients,\textsuperscript{7} as well as patients with other conditions\textsuperscript{4} may experience profound and repetitive oxygen desaturation events as a result of apnea, nocturnal hypoventilation, periodic breathing and worsening of ventilation-perfusion mismatching.

A study of patients experiencing cardiac arrest on the general care floor found that 84 percent had documented observations of clinical deterioration or new complaints within eight hours of arrest.\textsuperscript{8} Respiratory alterations preceding arrest was the most common antecedent (38 percent) and respiratory alterations were a component of 39 percent of multiple disturbances, which led to 27 percent of arrests. A retrospective multi-center study of 14,720 cardiopulmonary arrests showed that 44 percent were respiratory related and more than 35 percent occurred on the general care floor.\textsuperscript{9} Many clinical organizations, such as APSF, IHI, Joint Commission and ISMP, now recommend continuous electronic respiratory monitoring.\textsuperscript{10-13} Capnography and pulse oximetry are specifically cited as recommended methods of continuously monitoring adequacy of ventilation and oxygenation, respectively.

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Apnea-Sat Alert was developed to improve patient safety by simplifying identification of ventilation and oxygenation disorders without the need for additional equipment or changes to clinical workflow. The Apnea-Sat Alert is a software algorithm that tracks and reports apneas per hour (A/hr). The algorithm also tracks and reports the oxygen desaturation index (ODI), which is based on pulse oximetry data. The Apnea-Sat Alert adds A/hr and ODI calculations to the Capnostream\textsuperscript{5} 20p patient monitor in real time on the monitor home screen. Additionally, A/hr

Apnea and Oxygen Desaturation Report

Apnea and Oxygen Desaturation Display

Asterisk indicates apnea count has exceeded set threshold during the last 12 hours and clinician should view trend data.
References


