

Sedation in Adults Receiving Mechanical Ventilation: Physiological and Comfort Outcomes.

Grap M.J., Munro C.L., Wetzel P.A., Best A.M., Ketchum J.M., Hamilton V.A., Arief N.Y., Pickler R., Sessler C.N. *Am J Crit Care*. 2012 May;21(3):e53-e64.

Objective

To describe the relationships among sedation, stability in physiological status, and comfort during a 24-hour period in patients receiving mechanical ventilation.

Methods

Data from 169 patients monitored continuously for 24 hours were recorded at least every 12 seconds, including sedation levels, physiological status (heart rate, respiratory rate, oxygen saturation by pulse oximetry), and comfort (movement of arms and legs as measured by actigraphy). Generalized linear mixed-effect models were used to estimate the distribution of time spent at various heart and respiratory rates and oxygen saturation and actigraphy intervals overall and as a function of level of sedation and to compare the percentage of time in these intervals between the sedation states.

Results

Patients were from various intensive care units: medical respiratory (52%), surgical trauma (35%), and cardiac surgery (13%). They spent 42% of the time in deep sedation, 38% in mild/moderate sedation, and 20% awake/alert. Distributions of physiological measures did not differ during levels of sedation (deep, mild/moderate, or awake/alert: heart rate, $P = .44$; respirations, $P = .32$; oxygen saturation, $P = .51$). Actigraphy findings differed with level of sedation (arm, $P < .001$; leg, $P = .01$), with less movement associated with greater levels of sedation, even though patients spent the vast majority of time with no arm movement or leg movement.

Conclusions

Level of sedation most likely does not affect the stability of physiological status but does have an effect on comfort.