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***Abstract:***

*Background:* The aim of this study was to investigate the current practice of sedation, analgesia, and neuromuscular blockade in critically ill children in pediatric intensive care units (PICUs) in the UK and to identify areas that merit further study. *Methods:* Data were gathered in a prospective observational study of 338 critically ill children in 20 UK PICUs. *Results:* There is considerable variation in clinical practice. A total of 24 different sedative and analgesic agents were used during the study. The most commonly used sedative and analgesic agents were midazolam and morphine. Four different neuromuscular blockers (NMBs) were used, most commonly vecuronium. There were differences in treatment between cardiac and noncardiac children, but there were a greater number of infants and neonates in the cardiac group. NMBs were used in 30% of mechanically ventilated patients. Withdrawal symptoms were reported in 13% of ventilated patients, relatively early in their stay; weaning sedative agents ('tapering') was apparently of no benefit. The use of clonidine in this setting was noted. Physical restraints were used in 7.4%. Propofol was used but in only 2.6% of patients, all over the age of 4 years, and not exceeding  $2 \text{ mg}\cdot\text{kg}^{-1}\cdot\text{h}^{-1}$ . No side effects attributable to 'propofol syndrome' were noted. *Conclusions:* There is considerable heterogeneity of sedation techniques. NMBs are used in a large portion of this population. Withdrawal symptoms were associated with higher doses of sedation and greater lengths of stay and were not ameliorated by withdrawing sedation gradually ('tapering').

***Commentary:***

We generally limit ourselves to procedural sedation in this newsletter, but this paper interested us from the standpoint of showing what collaborative groups can do in pointing out current practice. Clearly there is some selection bias in the choice of the PICUs that were studied. On the other hand, the data on the high frequency of use of muscle relaxants and the heterogeneity of practice is compelling, and we suggest there would be similar findings if studied in the USA. As a sedation service we are commonly asked to consult on patients in the ICU who have been on medications for a long time and (either) need more behavior control or are experiencing withdrawal. The fact that weaning of agents did not appear to change the frequency of withdrawal is food for thought and clearly needs more evaluation since it is a staple of our practice. Interestingly, some have reported that dexmedetomidine (paper #3 above) can be helpful with patients withdrawing from opioids and benzodiazepines, although definitive data is lacking at this point.