Purpose: Dexmedetomidine (Precedex) is an α2 agonist sedative and analgesic used in the critical care setting. Currently, the drug is only approved for short-term usage (<24 hours), but it is sometimes preferred over other sedatives due to the lack of respiratory depression. A medication use evaluation (MUE) was completed at this small community hospital to assess the usage of dexmedetomidine in 2013. Since then, new practitioners have expressed greater preference for this agent and a follow-up MUE is being conducted to reassess the appropriateness of use, including in longer durations which may increase safety risks and financial burden.

Methods: This study was approved by the appropriate ethics committee or institutional review board and informed consent was waived. A retrospective analysis of dexmedetomidine usage will be conducted using the hospital’s electronic medical record (EMR) system to identify all patients who received the agent in 2014. Data will be gathered on the indication for use, duration of infusion time, effectiveness, and adverse events. These data will be analyzed for appropriateness of indication, duration of therapy, the average duration of treatment amongst outlier patients, and any adverse events experienced. Off-label uses (including longer infusion times) will be evaluated for appropriateness based on existing scientific literature.

Results

- Infusion duration: 0-4 hours (2 infusions), 4-8 hours, 8-12 hours, 12-16 hours, 16-20 hours, 20-24 hours.
- Adverse events: hypotension, anaphylaxis, arrhythmia.

Duration of use (in hours):
- None: 0 hours
- Hypotension: 4.5 hours
- None: 9 hours
- Restless, agitated, prop restarted: 9.5 hours
- None: 11 hours
- Restless, agitated, prop restarted: 12 hours
- None: 14 hours
- Hypotension: 15 hours
- None: 16 hours
- None: 23 hours
- Hypotension: 48 hours

Number of orders by prescriber:
- A: 15
- B: 1
- C: 2
- D: 2
- E: 1

Discussions

- There was not a strong correlation between longer duration of use and increased adverse events.
- Use of dexmedetomidine varied greatly amongst prescribers as expected.
- Only two cases of nine in 2014 had durations of use greater than 24 hours and only one of these led to noticeable side effects (hypotension).

Conclusions

- Further studies are needed to evaluate the effects of long-term usage of dexmedetomidine.
- Most cases of use were within the FDA recommendations, but there may be room for further prescriber education in order to ensure the safe use of dexmedetomidine.

Disclosures

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