HOT TOPIC

CAN WE SAFELY ADMINISTER CAUDAL CLONIDINE IN DAY CASE ANAESTHESIA?

SUMMARY OF KEY POINTS:

- Clonidine is a commonly added adjunct to caudal injections, due to its prolongation of duration of analgesia
- Clonidine has been shown to have comparable efficacy when compared with multiple other adjuncts, often with a favourable side effect profile
- Concerns exist over the sedating effect of clonidine, raising the question of whether it is appropriate for use in the day case setting

REVIEW OF EVIDENCE

Clonidine, initially introduced in the 1960s as an antihypertensive drug has gained popularity as an anaesthetic adjunct due to its potent analgesic and sedating effects, and for its favourable emergence properties.[i] The mixed alpha agonist produces analgesia with minimal respiratory depression through its activation of pre and post synaptic α-2 adrenoceptors, reducing transmission within the central and peripheral nervous system, and inhibiting nociceptive pathways through the activation of descending noradrenergic pathways.

Clonidine can be administered by multiple routes, through oral, intravenous administration, or as an additive to caudal injections.

The efficacy of adding clonidine to caudal injections has been proven to be equivalent to many other potential caudal adjuncts. Usha et al.[ii] compared clonidine with fentanyl, finding comparable analgesic and cardiovascular effects between both groups but found significantly lower respiratory depression, vomiting bradycardia in the clonidine group.

Comparing clonidine with and dexmedetomidine, El-Hennawy et al.[iii] found that both drugs produced significant prolongation of analgesic effect with equivocal haemodynamic effect and side-effect profiles. Akin et al. further evaluated the effect of caudally administered clonidine, which was shown to have comparable efficacy when directly compared with intravenous administration[iv].

The addition of clonidine to caudal injections has developed a robust body of evidence, for the safe prolongation of analgesia[v], with a two to four times prolongation of the duration of analgesic effect[vi], however, its use in the day-case setting remains controversial due to concerns over sedation.[vii]

Several studies have evaluated the use of clonidine in the day case setting, recognising the dose dependent sedation effects, where doses of 1 to 2 mcg/kg are associated with prolongation of caudal blockade without significant sedation[viii].

One difficulty with the evaluation of sedation in children in the post-operative period is the conflation of sedation with adequate analgesia. Lee et al. [ix] stated that the assessment of children who were sleeping soundly post-operatively due to adequate post operative analgesia could be misconstrued as sedation.

In summary Clonidine has been shown to significantly prolong the duration of a single shot caudal injection. It is safe and efficacious when compared to alternative adjuncts. While dose dependent sedation may be seen with high doses, by restricting dosing to one to two mcg/kg, these effects are avoided.

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