

# Response to Letter to the Editor Appeared in (Khan and Karim Ain-Shams Journal of Anesthesiology (2023) 15:78 <https://doi.org/10.1186/s42077-023-00378-8>)

Letter

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## ABSTRACT

We thank the authors for their knowledgeable comments on our study. We would like to clarify why clonidine was considered better than dexmedetomidine as an intrathecal adjuvant in our study.

In the study, the mean onset of sensory block was less than a minute earlier and duration of sensory and motor block was 43-47 min longer in patients when dexmedetomidine was used as an adjuvant over clonidine. Similar results were seen in a meta analysis by Zang *C et al.* where they observed a sensory onset of 40 sec early and an extended duration of stable sensory block of 10.8 min, 22.3 min prolonged duration of overall sensory block, and 38.6 min prolonged need for analgesic requirements where dexmedetomidine was used over clonidine as an adjuvant to local anesthetics.<sup>[1]</sup> Thus the use of a drug which is 2-3 dollars expensive (drug cost is around 2 dollars more and 1 dollar is the average cost of diluting agent) is debatable especially in third world country like ours when the mean prolongation of duration of analgesia as observed by different researchers is around 11 min to 43 min only and the mean difference in sensory onset time is less than a minute. This cost will be over and above the cost of analgesic drug which will be used in any case after 20-40 min in such scenario.<sup>[2, 3, 4]</sup>

**Key Words:** Analgesia, anesthesia, bupivacaine, hysterectomy.

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## INTRODUCTION

We thank the authors for their knowledgeable comments on our study. We would like to clarify why clonidine was considered better than dexmedetomidine as an intrathecal adjuvant in our study.<sup>[1,2]</sup>

In the study, the mean onset of sensory block was less than a minute earlier and duration of sensory and motor block was 43-47 min longer in patients when dexmedetomidine was used as an adjuvant over clonidine. Similar results were seen in a meta analysis by Zang *C et al.* where they observed a sensory onset of 40 sec early and an extended duration of stable sensory block of 10.8 min, 22.3 min prolonged duration of overall sensory block, and 38.6 min prolonged need for analgesic requirements where dexmedetomidine was used over clonidine as an adjuvant to local anesthetics.<sup>[3]</sup> Thus the use of a drug which is 2-3 dollars expensive (drug cost is around 2 dollars more and 1 dollar is the average cost of diluting agent) is debatable especially in third world country like ours when the mean prolongation of duration of analgesia as observed by different researchers is around 11 min to 43 min only and the mean difference in sensory onset time is less than a minute. This cost will be over and above the

cost of analgesic drug which will be used in any case after 20-40 min in such scenario.<sup>[4,5,6]</sup>

The adverse effects observed with the use of these drugs in our study were statistically insignificant, as also reported by Jaung *et al.* in their metaanalysis of 14 studies.<sup>[7]</sup> The most common reported adverse effects in other studies are bradycardia and hypotension but usually these were mainly related to its intravenous use as infusion in the elderly and in patients with pre-existent cardiac disease. Bradycardia due to dexmedetomidine is resistant to atropine and higher doses are needed, otherwise fatal cardiac arrest can occur.<sup>[8,9]</sup>

It is observed, that while the adjuvant drugs are to be diluted before mixing with local anaesthetics, the dilution errors, variability in obtained concentration and risk of bacterial contamination remains. The above dilution risks were theoretically presumed to be lower in clonidine group of the study as Dexmedetomidine 5µgm formulation used was obtained from 100 µgm available concentration and was subsequently diluted, where as undiluted Clonidine 30µgm (0.2 ml) was directly taken with a 1 ml syringe.<sup>[10,11]</sup>

Till date the FDA and Drug Controller General of India (DCGI) have not approved the intrathecal or epidural off-label use of dexmedetomidine, where as Clonidine has undergone more safety checks as it has been approved by FDA for epidural use. Thus in summary, at present clonidine appears to have better safety profile and cost effectiveness over dexmedetomidine for use as intrathecal adjuvant in third world countries like ours.<sup>[5,12]</sup>

## ABBREVIATIONS

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FDA- The United States Food and Drug administration

DCGI- Drug Controller General of India

µgm- Microgram

## CONFLICT OF INTEREST

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There are no conflicts of interest.

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