What is the place of Clonidine: Systemic review and metanalysis of randomized controlled trials (RCT)

Del Gaudio A. MD,. Abbate G MD, Erra A MD

Casa Sollievo della Sofferenza San Giovanni Rotondo Italy

A2-agonists such as Clonidine produce both :post-operative sedation and ansiolysis. The potential advantage of its use during anesthesia are: improved intraoperative haemodynamic stability and attenuated sympato-adrenal responses, moreover it determines reduction of requirement of intravenous anesthetic drugs and less of post-operative pain.

These aspect are linked to the central role of synergism in Total intravenous anesthesia (TIVA) practice, with the possibility to increase the effects of the drugs reducing their haemodynamic impact. In this situation Clonidine becomes an ancient drug with new prospectives in the field of the “so called” additive drugs. The use in the clinical practice of dexmedetomidine has not changed this indication. Dexmedetomidine has a pharmaco kinethic and pharmacodynamic profile that guarantees an alternative role in the hypnothic drugs field, but it can not be used in synergism with others hypnothic drugs. So we are talking about two drugs of the same family (α2-receptor agonists) that are totally different in respect their mechanism of action.

Clonidine can be considered in aesthetic practice the drug of choice in pre-anesthesia scenario in this situation its use is very closed to the ideal drug: it does not determine sedation nor respiratory depression; several studies have shown reduced changes in hearth rate (HR) and medium arterial pressure (MAP) in patients receiving clonidine , without having adverse effects on respiratory rate. We are convinced that oral or intramuscular administration of clonidine 2µg/kg given the evening before and 2 hours before surgery reduces changes in HR and MAP and overall reduces the requirement for perioperative anesthetics and analgesics without adverse effects.

Another important aspect is the reduction of stress linked to the reduced outflow of adrenergic hormones. There is also the possibility to integrate anesthesia with Clonidine infusion (300 µg/50 ml: 2ml/hr) during surgery further reducing the amount of hypnothics and analgesics.

The administration is also very important because reduces the effects linked to the rapid metabolization of remifentanil by plasmatic esterasis reducing shivers in the awake patient.

All these aspects make Clonidine like an ancient/new drug still very useful in anesthetic practice.

Bibliography

1. Maze M, Segal IS, Bloor BC. Clonidine and other alpha2 adrenergic agonists: strategies for the rational use of these novel

anesthetic agents. J Clin Anesth 1988;1:146 –57.

2. Yotsui T. Clonidine premedication prevents sympathetic hyperactivity but does not prevent hypothalamo-pituitary-adrenocortical responses in patients undergoing laparoscopic cholecystectomy. J Anesth 2001;15:78–82.

3. Sanchez Munoz , De Kock , Forget. What is the place of clonidine in anesthesia? Systematic review and meta-analyses of randomized controlled trials. J Clin Anesth. 2017 May;38:140-153.