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Comparative Evaluation Of Effectiveness of Clonidine and Adrenaline as Additives to Lignocaine for Pterygomandibular Nerve Blocks in Adult Patients: A Randomized Controlled Clinical Study †

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Abstract: Clonidine is added to lignocaine for various regional and local nerve blocks. This study was performed to evaluate the quality of anesthesia, vasoconstrictive effects, hemodynamic response, and pain control using a solution of 2% Lignocaine hydrochloride with Clonidine hydrochloride in comparison with the standard solution of 2% Lignocaine hydrochloride and Adrenaline bitartrate for pterygomandibular nerve blocks. A parallel-arm, triple-blind randomized controlled study was conducted on 152 ASA-I category subjects in the age group of 18-45 years who required surgical extraction of impacted mandibular third molars. The subjects were divided equally into 2 groups randomly by computer-generated sequence; Group 1: 2% Lignocaine hydrochloride and 1ml of Clonidine hydrochloride (150 µgm/ml) and Group 2: 2% Lignocaine hydrochloride with Adrenaline bitartrate 1: 80,000 (12.5 µgm/ml). The variables evaluated were systolic, diastolic, and mean arterial blood pressures, heart rate, blood loss, onset, depth (pain), and duration of anesthesia. There was a statistically non-significant difference seen between the 2 groups ($p>0.05$) for the onset of anesthesia, pain assessed, and blood loss, while a statistically highly significant difference was seen for cardiovascular variables (systolic, diastolic, and mean arterial blood pressures and heart rate) at various intervals with higher values for Group 2 ($p<0.001$) and for the duration of action of LA, with higher values for Group 1($p<0.001$). Clonidine as an additive to Lignocaine has proved to have onset of action, vasoconstrictive properties, and pain control, equivalent to Adrenaline. However, with better stability of hemodynamic variables and prolonged duration of action of LA with Clonidine, it can be considered as a better, safer, and more effective additive to Lignocaine than Adrenaline

Keywords: additives; local anesthetics; clonidine; Adrenaline; hemodynamic variables; pterygomandibular nerve blocks.

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Conflicts of Interest

The authors declare no conflict of interest.