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Articaine improves anesthetic achievement for exodontia performed by undergraduate dental students: A clinical comparative study

Abstract:

Purpose/objectives: To assess the clinical performance of undergraduate dental students in delivering inferior alveolar nerve block (IANB) with either articaine or lidocaine, and to compare the success rate of their IANBs between articaine and lidocaine for the extraction of mandibular molar teeth.

Methods: In this clinical trial, patients were randomly distributed into 2 study groups: articaine and lidocaine groups. In each group, dental students performed IANB followed by forceps extraction of 1 mandibular molar under close supervision. The operative parameters measured included: assessment of anesthetic technique (on 10 points visual analogue scale 'VAS-10'), onset and depth of anesthesia, intra-operative pain perceived by patients and their satisfaction level (on VAS-10), and the success rate of IANB (in terms of need to additional anesthesia). Data analyses used were descriptive statistics, *t*-test, χ^2 test, and Pearson's correlation.

Results: One-hundred sixty patients were included in the final analysis, 80 in each group. The overall students' IANB technique was assessed as good (mean score 7.3). Articaine group showed significantly higher success rate of IANB (71%) compared to (55%) in lidocaine group, ($P = 0.03$). Patients also reported significantly higher satisfaction scores in the articaine group ($P = 0.04$). There were no significant difference in the onset of action and intra-operative pain level between the 2 groups.

Conclusions: Students' IANBs were generally assessed as "good." Articaine IANBs performed by undergraduate students showed significantly higher success rate than lidocaine IANBs. By using articaine, the anesthetic achievement was greater for mandibular molar extraction performed by undergraduate students