











Brandt R, McDonald NJ, Anderson PF, MacEachern M, Shlafer M, Sohn W, Peters MC.

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Author, Year	Publication	Methods	Subjects	Evaluation Scale	Conclusions
Scinivasian, 2009	Oral Surg	Compared maxiliary buccal infitiration of articulae and Edocaine during pulpectomy in patients with irrevenible pulpets in maxiliary posterior teeth.	N=40	ens.	For patients reporting none or mild pain during pulpectomy, the success rate of articiane (200% in 1 st premolars and 1 st molars) was significantly higher than that of lidocaine (80% for 1 st premolars and 30% for 1 st molars). This resulted in a highly significant difference.
Brunetta, 2908	Assets Prog	Compared 3 volumes of lidocaine (0.6, 0.3, and 1.2mL) for infitration anesthesia of the maxiliary carine area.	NH-25	(M	The greater volume (1.2mil) resulted in greater success rate, faster onset, and longest duration.
Sherman, 2008	LEndod	Compared infiltrations of articaine and fidocaine in patients with immemble pulpits in manifulary posterior teeth (as well as manifular posterior teeth via a Graw-Genes Nock).	N=25	was	For the maxillary infiltrations, both articaine and Idocaine exhibited high success rates of success (100%, and 89%, respectively). Articaine was as effective, but not statistically superior to lidocaine.
Milesell, 2008	(Ended	Compared the efficacy of two volumes of intocaine for maxiliary buccal infitration of lateral incisory, 1° premolars, and 1° molars.	A-96	197	The two doiles resulted in similar priset and success rate (97-30%). The larger dose did result in a statistically longer duration of anesthesia.
Cortext, 2008	/ Endod	Compared articaline given by means of buccal or buccal and lingual inflitration in manifolder 1 rd molars. This was also compared to an UAV block of the same cohort using felocative.	N=31	Let.	The two methods of articaine infibitution did not differ in terms of anesthetic efficacy (64.5 vs 67.7%). The efficacy of articaine when given by infibitution (70%) was similar to using lidocaine via IAN block (56%) for mandibulat 2° molani.
(vam), 2008	(Ended	Compared articules with lidocaine in maeilary infitrations of 1° molars and lateral incloors.	N-80	That	In manilary lateral indisons, articaine exhibited a significantly higher success rate (IRIN) when consorred with lidocaine (62N). Differences were not significant for 2 ⁺ mission (TRN vs. 21N).
Nibertson, 2007	J Amer Dent Assoc	Compared articains and lidocains when given via buccal infittration in mandibular postarior teeth, texting from first transition to extend metal	N-60	CPT	Lidocaine resulted in anesthetic success ranging from 45-67%, while articaine resulted in a range of 75-52%. Articaine did result in a significantly higher success rate for manifically before influences.
Gress, 2007	(Endoid	Compared bupivacaine and lidocaine in maniform influences lateral incides and 11 minutes	N=65	EPT .	Buginacaine had a slower oncer for the 1 st indiar and a significantly lower success rate for the lateral incloor (78

Ι	NCL	UDED	ΓF	RIA	LS
Dabarakis,	Anesth Prog	Compared mephacaine solutions at two	N=20	LPT .	There was no difference in onset between the two
2006		maxilary 1" premolars.			duration.
Meechan, 2006	Int Endod J	Compared buccal to buccal plus lingual infitrations of lidocaine for mandibular 3 ^{et} molars.	N=31	Thi	There was no difference in efficacy between the two techniques (38.7 vs 32.3%), with neither success rate exceeding 40%.
Kamaik, 2006	J Endod	Compared articalne and lidocalne for infiltration of mandibular 3 rd molans.	N=31	EPT .	Articaine (64.5%) was more effective than lidocaine (38.7%) for infitration of mandibular 1* molans.
Costa, 2005	Quintessence	Compared articaine and lidocaine for maxillary infiltration of posterior teeth.	N>20	UPT	There were no significant differences between articals and lidocaine, in terms of anesthetic success. Articals did produce significantly shorter onset and longer duration of anesthesia.
Oliverira, 2004	Br Dent I	Compared articalne to lidocalne for buccal and Ingual infiltration of maxillary canines.	N+20	EPT	Although articaine resulted in faster onset and shorter duration, differences were not statistically significant.
Yonchak, 2001	Anesth Prog	Compared efficacy of lidocaine combined with 2 different associations concentrations for mandbular buccal infittrations of anterior teeth, as well as a lingual infittration.	NH80	LPT	There were no differences in the success rates of the 3 groups, although no technique produced anesthetic success at a rate of greater than 50% for the lateral incisor.
Vahatalo, 1993	Anesth Prog	Compared articaine and lidocaine for maxillary lateral incisor infitration.	N=20	(PT	All inflitrations resulted in successful pulpal anesthesia with no significant difference between onset and duration of the two solutions.
Haas, 1991	I Canad Dent Assoc	Compared articuline to prilocaline for both maxillary and mandibular buccal infitrations of 2 nd molars.	N-20	197	Articaine resulted in higher rates of success for both arches, although differences were not statistically significant.
Haat, 1990	Anesth Prog	Compared articaine to prilocaine for both maxillary and mandibular buccal	N+20	LPT .	The two solutions provided similar success rates for pulpal anesthesia after infiltration.

Results								
ANESTHETIC SUCCESS RATES:								
ANESTHETIC	DENTAL ARCH	RANGE OF SUCCESS						
Antioning	Maxilla	65-100%						
Articaine	Mandible	63-92%						
Bupivacaine	Maxilla	64-78%						
Lidomina	Maxilla	62-100%						
Liuocame	Mandible	39-67%						
Duilonning	Maxilla	65-90%						
Prilocalite	Mandible	50-53%						

Sources of Heterogeneity DIFFERENCES IN STUDY DESIGN/ METHODOLOGY: Operators/ Evaluators Randomization, Blinding Age/ Gender of Subjects, and Sample Size Various Dosages and Delivery Techniques Different Tooth Selection and Pre-operative Pulpal Status Determination of Anesthetic Efficacy, Definition of Success

Implications For Clinical Practice

- Volume Matters !
 Articaine *similar* to other local anesthetics
 Superiority* of Articaine in 7 of 10 comparative trials

 studies.
 *Statistically significant in only 3 of these
- Due to heterogeneity of included studies, further clinical trials are

Implications for Future Research

- Optimal quality of randomized controlled trials:
 - Sufficiently blinded and randomized.
 - Proper determination of sample size.
 - Clearly defined outcomes, and description of valid

outcomes

measurements.

• Reporting of adverse events.

QUESTIONS?

needed

