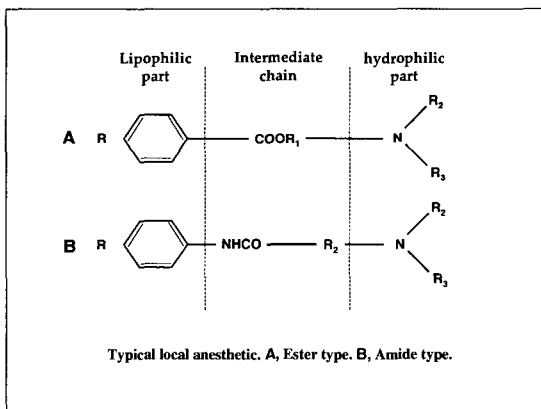
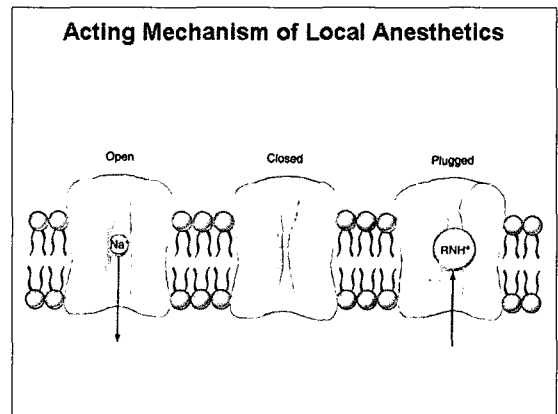
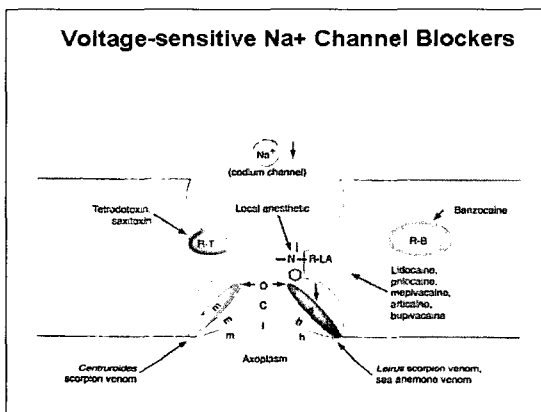


임프란트 기술을 위한 국소마취제 선택

서울대학교 치과대학 약리학교실

김 관 식



Relative Vasodilatating Effect of LA

• Articaine	1
• Bupivacaine	2.5
• Etidacaine	2.5
• Lidocaine	1
• Mepivacaine	0.8
• Prilocaine	0.5
• Tetracaine	NA

NA: not available

Contents of Local Anesthetic Cartridge

Ingredient	Function
• Local anesthetic agent	Anesthesia
• Vasoconstrictor	Decreases absorption of local anesthetic into blood, thus increases duration of anesthesia and decreases toxicity of anesthetic
• Sodium metabisulfite	Preservative of vasoconstrictor
• Methylparaban	Preservative to increase shelf life; bacteriostatic
• Sodium chloride	Isotonicity of solution

Acting Duration of LA

• Articaine HCl	4% + 1:100,000 epinephrine 4% + 1:200,000 epinephrine	moderate moderate
• Bupivacaine HCl	0.5% + 1:200,000 epinephrine	long
• Lidocaine HCl	2% 2% + 1:50,000 epinephrine 2% + 1:100,000 epinephrine	short moderate moderate
• Mepivacaine HCl	3% 2% + 1:20,000 levonordefrin 2% + 1:100,000 epinephrine	short moderate moderate
• Prilocaine HCl	4% 4% + 1:200,000 epinephrine	short(infiltration) moderate(block) moderate

short: less than 30 min ; moderate: about 60 min; long: more than 90 min (Deep Anesthesia)

Untoward Effects of LA

- **Central Type;**
inadvertent, accidental IV injection
- **Allergic Type**
- **Psychogenic Type;**
vasovagal syncope
- **Malignant Hyperthermia**

Prilocaine (Citanest)

- equipotent to lidocaine, but 40% less toxic
- less vasodilation than lidocaine
- inducing methemoglobinemia
- not recommended when controlling pain with acetaminophen
- reported to induce paresthesia

Mepivacaine (Carbocaine)

- least vasodilation
- recommended when use of epinephrine is contraindicated
- need for post-operative bleeding control

Bupivacaine (Marcaine)

- long acting duration: 4-9 hrs (up to 12 hrs)
- occasional delayed onset: 6-10 min
- recommended when severe post-operative pain is predicted
- need for post-operative bleeding control

Medical problem	Drug(s) to avoid	Type of contraindications	Alternative drug
Local anesthetic allergy	All local anesthetic in same chemical class (eg. Esters)	Absolute	Local anesthetics in differing chemical class (eg. Amides)
Malignant hyperthermia	Amides	Absolute	Esters
Atypical plasma cholinesterase	Esters	Absolute	Amides
Significant liver dysfunction	Amides	Relative	Amides or esters, but judiciously
Renal dysfunction	Esters and amides	Relative	Amides or esters, but judiciously
Significant cardiovascular disease	High vasoconstrictor concentrations	Relative	4% prilocaine plane for blocks 3% mepivacaine
Clinical hyperthyroidism	High vasoconstrictor concentrations	Relative	4% prilocaine plane for blocks 3% mepivacaine
Idiopathic or congenital methemoglobinemia	Prilocaine	Relative	Other amides