

A decorative graphic on the left side of the slide, consisting of a network of white lines and small circles on a blue gradient background, resembling a circuit board or neural network.

LOCAL ANESTHESIA REVIEW

DR. WILLIAM SYNAN

GENERIC PROCAINE – “NOVOCAINE”: 1904 -1905

- Ester
 - Hydrolyzed quickly by plasma pseudocholinesterase
 - Produces greatest vasodilation of local anesthetics
 - Onset of action 6-10 minutes
 - $\frac{1}{2}$ life 6 minutes – short
 - Little pulpal anesthesia -15-20 minutes of soft tissue anesthesia
- *Manage accidental intra-arterial drug injections

GENERIC LIDOCAINE : 1943

- Amide
- 1948 - First local anesthetic to be marketed

Xylocaine

Alphacaine

Octocaine

Lignospan

Onset of action - rapid 2-3 minutes

$\frac{1}{2}$ life – 1.6 hours

Metabolized in liver

GENERIC LIDOCAINE (CONT.)

Lidocaine plain

Pulpal 5-10 minutes

Soft tissue 60 -120 minutes

2% Lidocaine with epinephrine Pulpal 60 min

Soft tissue 3 -5 hours

- 1: 100,000
- 1: 50,000

Allergy is extremely rare

Slightly more vasodilation than mepivacaine and prilocaine

Maximum recommended dose: MRD 300-500 mg



3% MEPIVICAINE

1961



Amide

- Carbocaine
 - Arestocaine
 - Isocaine
 - Polocaine
 - Scandonest
- 
- 

2% MEPIVICAINE

1960

2% Mepivacaine with 1:200,000 epinephrine
1: 100,000 epinephrine
1: 20,000 levonordefrin

Metabolized in liver

Slight vasodilation

Onset of action Rapid 1.5 – 2 minutes

$\frac{1}{2}$ life 1.9 hours

*The mild vasodilating effects produces longer duration of anesthesia than most other local anesthetics without vasoconstrictor

3% MEPIVICAINE

3% Mepivacaine

Pulpal 20-40 minutes

Soft tissue 2-3 hours

2% Mepivacaine with 1: 200,000 epinephrine

Pulpal 45-60 minutes

Soft tissue 2-4 hours

2% Mepivacaine with 1: 100,000 epinephrine

Pulpal 60 minutes

Soft Tissue 2-5 hours

2% Mepivacaine with 1:20,000 levonordefrin

Pulpal 60-90 minutes

Soft Tissue 3-5 hours

ALLERGY - RARE

- MRD – 300-400 mg

.5% BUPIVICAINE

1982

Amide

Metabolized in liver

- Significant vasodilation but less than procaine
- Onset of action 4 or 6-10 minutes
- $\frac{1}{2}$ life 2.7 hours

.5% Marcaine with 1:200,000 epinephrine Pulpal 90-180 minutes

Soft tissue 4-9 hours

MRD: 90 mg

Not recommended for:

- Children or mentally disabled – risk of self-mutilation
- Short Procedures

4% ARTICAINE 1978

Amide

Metabolized in both liver and plasma

- Vasodilation is similar to that of lidocaine
- Onset of action 2-3 minutes

$\frac{1}{2}$ life 1.25 hours

4% ARTICHAINE (CONT.)

4% Articaine with 1: 200,000 epinephrine	Septanest N	Pulpal 45-60 minutes
	Ultracaine A-S	Soft tissue 2-5 hours

4% Articaine with 1: 100,000 epinephrine	Septanest SP	Pulpal 60-75 minutes
	Ultracaine DS-Forte	Soft tissue 3-6 hours

MRD: 500 mg

*Methemoglobinemia is a potential side effect of large dose of articaine

Neurotoxicity