

## **LOCAL ANAESTHESIA**

Local anaesthetics are one of the drugs you will use most often in the A&E. Be familiar with their action/dosages/side effects

Local anaesthetics work by temporarily blocking the transmission of peripheral nerve impulses by blocking membrane depolarization

Maximum safe dose of lignocaine is 3mg/kg body weight

1ml of 1% lignocaine = 10mg

Maximum safe doses (mg/kg)

Bupivacaine 2

Lignocaine 3

Prilocaine 6

Local anaesthetic is either infiltrated around the edges of wounds or given as specific peripheral nerve 'blocks'. You will be shown various techniques during your stay in A&E

It is important that you calculate the maximum dose of local anaesthetic agent you can use prior to injecting and use slightly less than this. In young children only small amounts can be used

e.g. 1 year old child  
weight approx 10 kg  
prilocaine (6mg/kg) max dose 60 mg  
prilocaine vials 4% i.e. 40 mg per ml so you can only use a maximum of 1.5 ml.  
Prilocaine vials are 2.2ml of 4% - 88mg per vial

### **Problems During Local Anaesthesia**

#### **Failed Anaesthesia**

Believe the patient if he/she says it doesn't work

#### **Incorrect timing**

Not enough time given for the onset of anaesthesia or the anaesthetic effect was allowed to wear off before procedure started

#### **Incorrect site of injection**

Local anaesthetics work poorly in infected tissues

## Complications of local anaesthetics

### Acute Systemic Toxicity

Most commonly caused by accidental intravascular injection

Can occur as a result of rapid systemic absorption

- e.g. from large surfaces
- intercostal nerve block
- mucous membrane anaesthesia

### Central Nervous System

- Early sign - numbness of tongue and mouth
- Mild toxicity - signs of CNS stimulation due to depression of inhibitory centres
  - light headedness, tinnitus, visual disturbance, slurred speech
- More Severe - progresses through muscular twitching, irrational Conversation to LOC, convulsions, coma, apnoea

### Cardiovascular Toxicity

- Initially - hypertension and tachycardia due to block of CNS Inhibitory centres
- Later - hypotension, sinus bradycardia and ventricular arrhythmias

## Treatment of Toxicity

ABC

RESUSCITATION

Goal of treatment is to reverse the hypoxia and acidosis which tends to keep the local anaesthetic ionised, thus preventing it leaving the CNS and myocardium

Ensure adequate oxygenation

Control seizures with diazepam

Give fluids if hypotensive

Consider use of **Intralipid**