

Aim: To study the effect of local anaesthetic on rabbit cornea.

Requirements

Rabbits, Rabbit holder, dropper, etc.

Drug

1% xylocaine.

Principle

Local anaesthetics are those drugs which cause reversible loss of nerve conduction and, hence, loss of sensory perception of pain when applied locally. An ideal local anaesthetics have the following characteristics.

1. They should not irritate.
2. The onset of action should be quick.
3. Duration of action should be sufficient.
4. They should be free from systemic toxicity.
5. They should be stable.

Local anaesthetics produce their effect by inhibiting sodium ions' permeability and preventing depolarisation. They displace calcium ions from their binding site. Thus, they reduce the rate and rise of action potential and block the conduction of impulses. Lignocaine is used as a surface, infiltration, nerve block and spinal anaesthesia. This experiment can detect the activity of lignocaine as a surface anaesthetic agent. Absence of corneal reflex is indicative of local anaesthetic activity,

Procedure

1. Select a Healthy Rabbit:

Choose a rabbit that is in good health for the experiment.

2. Place in the Holder Box:

Gently place the selected rabbit in a holder box or a restraining device to ensure stability during the procedure.

3. Eyelash Removal (at least 24 hours prior):

Cut off the eyelashes of the rabbit at least 24 hours before starting the experiment to prevent interference with the corneal reflex.

4. Designate Control and Experimental Eyes:

Keep the right eye as the control eye and treat the left eye for experimentation.

5. Observe Corneal Reflexes with Cotton Wick:

Use a wick of cotton to observe the corneal reflexes in both eyes. Approach the animal from its side and touch the cornea with the cotton wick.

6. Testing the Corneal Reflex:

To test the corneal reflex, approach the rabbit from the side and touch the cornea with the cotton wick. Note the response of the rabbit, especially the closure of the eye.

7. Application of Xylocaine (1%) in the Left Eye:

Put 2-3 drops of xylocaine (1%) in the left eye of the rabbit. This local anaesthetic will be used to study the effect on the corneal reflex.

8. Examine Corneal Reflex After Every Minute:

Monitor and examine the left eye's corneal reflex every minute following Xylocaine's application.

9. Report Onset and Duration of Xylocaine Action:

Record and report the onset and duration of action of xylocaine. The loss of corneal reflex in the treated eye indicates the onset of the drug's action.

10. Corneal Reflex as Indicator of Recovery:

A positive corneal reflex in the treated eye serves as an indication of the recovery of corneal sensation.

Report

On the set of actionminutes duration of actionminutes