EXPERIMENT 9

Title: Analgesic drugs (II).

Aim: To demonstrate the analgesic effect of opioid and non-opioid analgesics using acetic acid induced abdominal writhing model in mice.

Principle: Acetic acid causes inflammatory pain as a result of capillary permeability due to increase in level of endogenous substances in the peritoneum caused by the administration of the irritant. The rising levels of these endogenous substances such as prostanoids, bradykinin, serotonin and histamine produce localized inflammatory responses and stimulate pain nerve endings resulting in painful episodes characterized by retraction of abdomen and stretching of hind limbs.

Procedure:

1. Mice are treated in a manner similar to experiment 8 by following the procedure steps 1 and 2.
2. Thirty minutes after treatment, administer 0.2 ml of dilute acetic acid (0.7%) to each mouse intraperitoneally.
3. Place each mouse in a transparent chamber.
4. After 5 minutes, count the number of abdominal twists or stretches (writhing) for another 5 minutes.

Observation:

Group	Treatment	Number of Abdominal writhing
1	Distilled water	
2	Acetaminophen	
3	Diclofenac	
4	Tramadol	
5	Pentazocine	

Activity:

1. Discuss your results
2. Represent your results in a histogram.

Quiz:

1. Which of these drugs are more sensitive to this test?
2. List 5 other opioids that can be used in pain management
3. Briefly discuss the pharmacological property(s) of opioids that make them liable for abuse?
4. What are the risks of abuse of Opioids?