

EXPERIMENT NO.: 13. A

DATE:

AIM: TO STUDY OF STEREOTYPE BEHAVIOUR IN RAT/MICE OR TO STUDY THE TAMING EFFECTS OF CHLORPROMAZINE IN RATS AND MICE OR TO STUDY THE EFFECTS OF CHLORPROMAZINE ON APOMORPHINE INDUCED COMPULSIVE BEHAVIOUR

REQUIREMENTS:

- Rats: 150-200gm
- Mice: 20-40gm
- Syringe and needles
- Clean beaker (250 ml for mice, 1000 ml for rats)

DRUGS:

- Apomorphine:
 - Dose: 2.5 mg/kg (i.p)
 - Stock solution: 0.25 mg/mL,
 - Inject: 1 mL/100 GM body weight of animal
- Chlorpromazine (0.3 mg/mL)
 - Dose: 3 mg/kg (i.p)
 - Stock solution: 0.3 mg/mL,
 - Inject: 1 mL/100 GM body weight of animal

PRINCIPLE:

Compulsive behavior is defined as purposeless activity exhibited by the animal. This purposeless activity is supposed to be identical to the behavioral disorder seen in schizophrenic patient who also shows repetitive purposeless activity. This behavioral abnormality in schizophrenia is due to the excessive neuronal activity of dopamine receptor agonist, through its dopaminergic activity inducer compulsive stereotyped in rat and mice. The stereotyped behavior induces repetitive standing (rearing), continuous sniffing (touching the nose to the wall of the container) and licking to the wall of the container. These behaviors can be easily observed and subjectively scored also.

THEORY:

Psychosis: “means out of touch with reality or unable to separate the real form and unreal form”

Schizophrenia: “It is well describe by false perception”

- Psychosis or schizophrenia is arising due to increase the dopamine level.

- There are mainly two types of dopamine receptors D1 and D2.
- In psychosis D2 receptors are mainly involved and which increases the dopamine level in brain.

PROCEDURE:

- Weigh the animal divide it in to two groups
- Each group consist three animals.
- One group act as control groups and they all receive saline
- Second group act as test group they all receive chlorpromazine (3 mg/kg).
- After 30 minutes inject apomorphine (2.5 mg/kg) in to the entire animal
- Place them individually in to separate beakers and observe the intensity of compulsive behaviour like as:

Rearing: Repetitive standing

Sniffing: Touching of nose to the wall of the container

Liking: Licking the wall of container

- Note the onset of responses at 15, 30 and 60 min after giving the apomorphine injection.

Gives the score according to severity like as:

1 – Presence of response 2 – Moderate response 3 – Sever response

OBSERVATION TABLE:

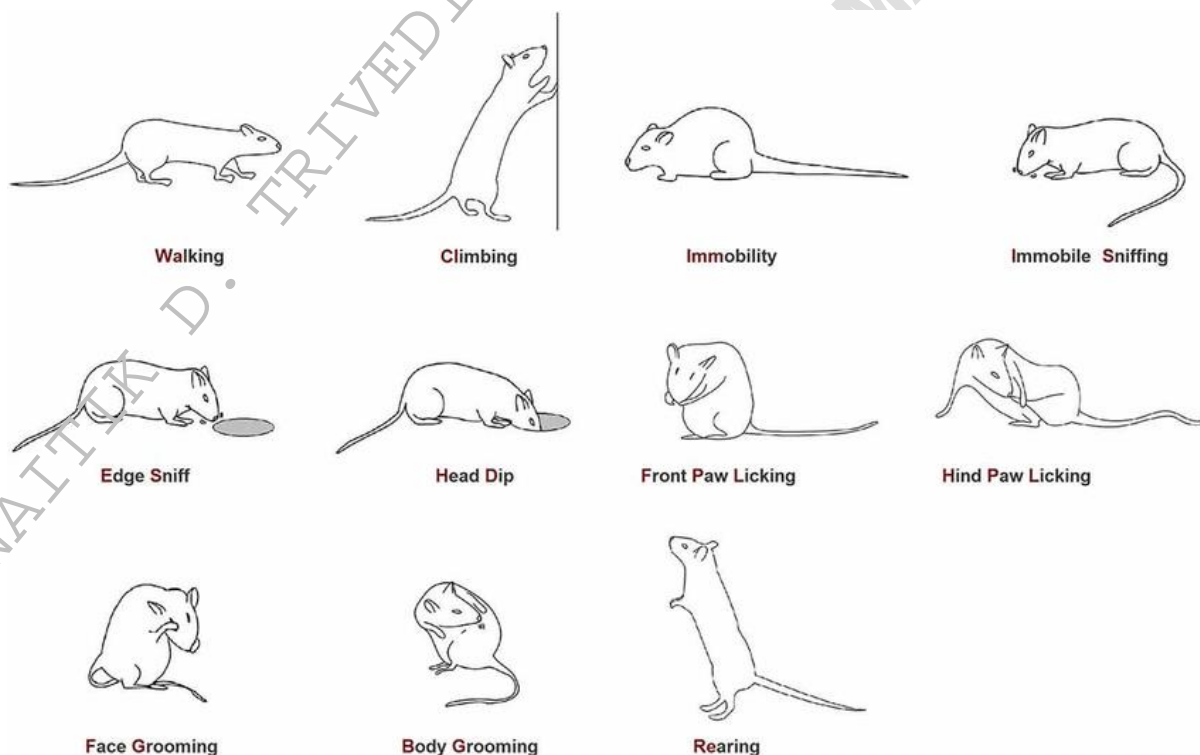
Effects	Time in minutes	Score for Group-1 Animals (Saline + Apomorphine)			Score for Group-2 Animals (Chlorpromazine + Apomorphine)		
		1	2	3	1	2	3
Rearing	15 min	2	2	2	1	1	1
	30 min	3	3	3	1	2	2
	60 min	2	2	1	1	1	1
Sniffing	15 min	3	3	3	1	3	2
	30 min	3	3	2	2	2	2
	60 min	2	2	2	1	1	1
Licking	15 min	3	2	2	1	2	2
	30 min	3	3	3	1	2	2
	60 min	1	1	1	1	1	2
Total Score		22	21	19	10	15	15

DISCUSSION:

- The rearing, sniffing and licking behavior of animal is known as compulsive behavior of animal which is identical to schizophrenia and psychosis in human.
- In the psychosis the level of dopamine gets increased and anti-psychosis drug decreases the level of dopamine is known as taming effects.
- Apomorphine increases the dopamine level while chlorpromazine decreases the dopamine level.

RESULTS:

Total score of Group-2 animals is decreased than the group-1 animals means chlorpromazine decrease the total score of Group-2 animals as compare to Group-1 animal so it gives the taming effects against the Apomorphine induced compulsive behavior.



TEACHER'S SIGNATURE