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- P 'phenol' hydroxy'tryptophan' /Sigma-Chem./ 'serotonin'
 5-methoxy der. 'psychostimulant' 'quinoline' antidepressant
 /Miles-Ames/ quipazine 'LSD' /Spofa/ etc. induced 'reflex-drug'
 stereotypy modification by 'brain' lesion rat congress /XXVI/
 /XXXII/ /E/
 Pol.J.Pharmacol.Pharm. 31, No.4, 413-23 /1979/
 Vetulani J, Byrska B, Reichenberg K /Krakow,Pol./
Head Twitches Produced by Serotonergic Drugs and Opiates
 after Lesion of the Mesostriatal Serotonergic System of the Rat

Head twitches produced by serotonergic drugs and opiates after lesion of the mesostriatal serotonergic system of the rat were studied.

Head twitches and body shakes produced by 50 mg/kg 5-HTP (Sigma-Chem.) in male Wistar rats (250g) receiving 30 min earlier 12.5 mg/kg benserazide (Roche) were significantly less frequent in rats having a successful electrolytic lesion of the dorsal raphe nucleus. The frequency of head twitches was directly proportional to the level of serotonin in the prosencephalon, and the correlation between these 2 parameters was significant. 5-Methoxytryptamine (Sigma-Chem.) 1 mg/kg given to rats pretreated with 20 mg/kg tranylcypromine 30 min earlier did not produce apparent changes in the body posture during the 1st 2 hr, and produced evident but not frequent episodes of head twitches. The frequency of these episodes was similar in lesioned and sham-operated rats. The treatment was very toxic, as 80% of sham-operated rats did not survive the period of 24 hr. Lesions of the dorsal raphe nucleus offered a significant protection against the lethal action of 5-methoxytryptamine.

Head twitches and body shakes (resembling wriggling) were more frequent in sham-operated than lesioned rats using quipazine (Miles) 5 mg/kg. The correlation between the inhibition of shaking frequency and the degree of the lesion (assessed from the depression of prosencephalic serotonin) was significant. The frequency of LSD (Spofa) 50 ug/kg induced head twitches (limited only to the head) was significantly depressed by the lesion of the dorsal raphe nucleus. All lesions were successful and levels of serotonin in the forebrain were 85-240 ng/g. The correlation of serotonin level with shaking frequency was insignificant. Head twitches produced by codeine (Polfa) 5 mg/kg or by 2.5 mg/kg apocodeine were similar in rats with and without lesions of the dorsal raphe nucleus, and there existed no correlation between the prosencephalic level of serotonin and shaking frequency.

6 Fig. 41 Ref.

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