THE EFFECT OF MIANSERIN AND TRAZODONE ON BODY WEIGHT AND SERUM TRYPTOPHAN IN DIETARY-OBESE RATS

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Disturbances of appetite and rapid changes in body weight are common sequelae of depressive illness. In a recent report, Harris & Harper (1980) further suggested that the antidepressant drug Mianserin was itself capable of disturbing appetite. We have therefore examined the effect of two antidepressant drugs, Mianserin and Trazodone, on body weight in rats made obese by exposure to a varied diet (Kirby et al 1978). At the same time, since the central neurotransmitter 5-hydroxytryptamine is clearly implicated in the control of both mood and appetite, the serum levels of the precursor, tryptophan (TRY) have also been examined.

For each drug, 3 groups of 6 female Wistar rats were allowed free access for 4 weeks to a diet of chocolate, luncheon meat, Rice Krispies and biscuit, in addition to Oxoid 41B pellets and water. One of these groups received a single daily dose of drug p.o. during the first two weeks, and a second group were given the drug during weeks 3 & 4. The third group received no drug. For each drug a similar design was used in a further 3 groups of rats receiving only oxoid 41B pellets and water. All animals were weighed daily; after 4 weeks they were killed, and serum TRY (free and total) was assayed by HPLC.

The mean increase in body weight of animals fed the varied diet over those fed only pellets was 85g±9.8g after 4 weeks. There were no differences in body weight attributable to drug treatment. However, as can be seen from Table 1, showing the results in animals receiving drug during weeks 3 & 4, both Mianserin and Trazodone increased total TRY in pellet-fed and diet-fed animals. Free TRY was unaffected by Trazodone, but was lowered by Mianserin. Whatever the cause of this effect, it is readily reversed, since in animals receiving drug during weeks 1 & 2 no differences in serum TRY were observed at week 4.

Table 1.

Effect of Mianserin and Trazodone on serum TRY

	Mianserin (3mg kg^{-1})		Trazodone (10 mg kg^{-1})	
	Total TRY (µg/ml)	Free TRY	Total TRY (µg/ml)	Free TRY
Pellet-fed	17.9±0.6	4.6±0.3	17.6±0.8	4.4±0.3
Pellet-fed & drug	22.0±0.9*	3.5±0.6	24.4±1.1*	5.7±1.6
Diet-fed	18.2±0.5	4.65±0.1	19.6±0.6	4.2±0.2
Diet-fed & drug	22.1±0.9	2.7±0.4	21.25±1.1	5.2±0.4

mean s.e.m. * difference from corresponding control $p < 0.01$

B. Harris & M. Harper (1980). Lancet I, 590.
M.J. Kirby, S.A. Pleece & P.H. Redfern (1978). Br. J. Pharmac. 64, 442P.

0022-3573/82/120103P-01$02.50/0