Psychoneuroendocrinology, 1975, Vol. 1, pp. 203–205. Pergamon Press. Printed in Great Britain

SHORT COMMUNICATION

A PRELIMINARY STUDY OF PSYCHONEUROENDOCRINE RELATIONSHIPS IN PSYCHOGENIC IMPOTENCE

J. J. LEGROS, J. SERVAIS and C. MORMONT

Depts. of Pathology and Psychiatry, Institut de Medecine, University of Liège, Boulevard Piercot, 23, B 4000, Liège, Belgium

INTRODUCTION

IN A PREVIOUS study we have shown that psychogenic impotence is associated with a mild disturbance of the pituitary–gonadal axis (Legros, Palem, Franchimont & Servais, 1973). However, the results obtained showed that there were considerable variations in the individual neuroendocrine values; this led us to postulate that there is more than one single disorder in this disease. It is well known that both in animals and in man, excess exogenous or endogenous steroid leads to various psychological disturbances (Malleson, 1953; Hubble, 1963; Gabrilove, 1966; Hamburg, 1966; Persky, 1966; Kind, 1967; Ladisich & Baumann, 1971). Therefore in this preliminary study we have divided neuroendocrine status into three different groups and we have tried to ascertain if there is a relationship between androgen levels and psychological distress.

METHOD

Sixty-seven impotent men (20–60 yr) were studied in a multidisciplinary way by an endocrinologist, a psychiatrist and a psychologist.

(a) Endocrine methods have been described elsewhere (Legros *et al.*, 1973). The following arbitrary criteria were used to group the endocrine status: I_a—Low plasma testosterone levels (< 500 ng/100 ml) and low or normal LH levels (< 15 mUI/ml). I_b—Low plasma testosterone levels (< 500 ng/100 ml) and normal or high LH levels (> 15 mUI/ml). II—Normal or high plasma testosterone levels (> 500 ng/100) ml and low, normal or high LH levels.

(b) Six psychological parameters were checked by psychological testing (MMPI, TAT, and Rorschach) and by psychiatric interview. These were: (1) castration anxiety, (2) libido, (3) depression, (4) regression, (5) general anxiety, (6) homosexuality. The results of both tests and psychiatric interview were recorded on a scale (0, +, ++, +++, ++++), according to the magnitude of the disturbance. For this preliminary report these different categories have been re-grouped into the following two: '0 and +' and also '++, +++ and ++++.'

Statistical comparisons between the results of the different categories were made by the χ^2 method.

RESULTS

The results are summarized in Table I. The figures represent the number of cases in each group having a score of '0 and +' and '++, +++, ++++,' and the percentage of cases in the mild and severe categories is also noted. In the last column, p values show that only in one case, namely, depression, was there a significant difference between groups. Group I_a and I_b have been combined for this comparison.

TABLE I. NUMBER OF CASES OF PSYCHOGENIC IMPOTENCE WITH MILD OR SEVERE PSYCHOLOGICAL DISTURBANCE IN THREE ENDOCRINE GROUPS (see text)

	0 and +	++, +++ and ++++	p
(1) Castration feeling			
Group Ia	20 (64·6%)	11 (35·4%)	$p > 0{\cdot}5$
b	11 (64·7%)	6 (35·3%)	
Group II	12 (63·1%)	7 (36·9%)	
(2) Libido			
Group Ia	16 (51·6%)	15 (48·4%)	$p > 0{\cdot}5$
b	8 (47·0%)	9 (53·0%)	
Group II	9 (47·3%)	10 (52·7%)	
(3) Depression			
Group Ia	14 (45·1%)	17 (64·9%)	$p < 0{\cdot}05$
b	9 (53·0%)	8 (47·0%)	
Group II	5 (27·8%)	13 (72·2%)	
(4) Regression			
Group Ia	13 (41·9%)	18 (58·1%)	$p > 0{\cdot}5$
b	6 (35·2%)	11 (64·8%)	
Group II	8 (42·1%)	11 (57·9%)	
(5) Anxiety			
Group Ia	15 (48·3%)	16 (51·7%)	$0{\cdot}05 < p < 0{\cdot}1$
b	9 (53·0%)	8 (47·0%)	
Group II	5 (26·3%)	14 (73·7%)	
(6) Homosexuality			
Group Ia	25 (80·6%)	6 (19·4%)	$p > 0{\cdot}5$
b	12 (70·5%)	5 (29·5%)	
Group II	12 (63·1%)	7 (36·9%)	

DISCUSSION

The role of androgens in the pathogenesis of psychogenic impotence is still under discussion. Late castration produces variable effects in men which seem to be essentially related to the psychological impact of the surgical act. Furthermore, exogenous testosterone is very ineffective in the treatment of impotence itself, although it does have an overall effect on general behaviour. In animals, however, coitus seems to be more under endocrine than under sympathetic neural control (Larsson & Swedin, 1971). Furthermore, exogenous pituitary–gonadal hormones have a positive effect on the sexual behaviour of the boar (Ellendorf, Roth & Smidt, 1970), and exogenous oestrogens always lead to a decrease of libido in man.

Therefore, it would be logical to find some correlations between testosterone blood levels and sexual behaviour; one can see that such a relationship does not exist under our working conditions. Nevertheless, there is a small difference as far as depression and anxiety are concerned; the group with normal or high plasma testosterone levels being more troubled

than the group in which plasma testosterone was low. These last results are difficult to interpret and slightly contradict previous data; it is known, indeed, that there is an increase of the pituitary–adrenal function during the anxious phase of depressive states (Hullin, Bailey, McDonald, Dransfield & Milne, 1967). To our knowledge, testosterone metabolism has not been studied in such circumstances although it is known that androgenic function decreases in man under stressful conditions (Rose, Bourne, Poe, Mougey, Collins & Mason, 1969). Our psychoneuroendrocrine data are, however, based only on plasma levels that do not necessarily accurately reflect hormone secretion. Furthermore, there are numerous other difficulties in interpreting our results associated with the inherent difficulties of clinical psychoendocrine research to which Mason (1968) has drawn attention.

J. J. Legros is a research fellow of the Belgian F.N.R.S.

REFERENCES

ELLENDORF, F., ROTH, E. & SMIDT, D. (1970) *J. Reprod. Fertil.* **21**(2), 347.
GABRILOVE, J. L. (1966) In *Endocrines and the Central Nervous System*, R. Levine (Ed.), p. 419. Williams & Wilkins, New York.
HAMBURG, D. A. (1966) In *Endocrines and the Central Nervous System*, R. Levine (Ed.), p. 251. Williams & Wilkins, New York.
HUBBLE, D. (1963) *Lancet* **II**, 209.
HULLIN, R. P., BAILEY, A. D., MCDONALD, R., DRANSFIELD, G. A. & MILNE, H. B. (1967) *Br. J. Psychiat.* **113**, 593.
KIND, H. T. (1967) In *Clinical Neuroendocrinology*, E. Bajusj (Ed.), p. 368. Karger, Basel.
LADISICH, W. & BAUMANN, P. (1971) *Neuroendocrinology* **7**, 16.
LARSSON, K. & SWEDIN, G. (1971) *Physiol. Behav.* 6(3), 251.
LEGROS, J. J., PALEM, M., FRANCHIMONT, P. & SERVAIS, J. (1973) *Endocrinologia experimentalis* **7**, 59.
MALLESON, J. (1953) *Lancet* **II**, 158.
MASON, J. W. (1968) *Psychosom. Med.* XXX 5(II), 576.
PERSKY, H. (1966) In *Endocrines and the Central Nervous System*, R. Levine (Ed.), p. 266. Williams & Wilkins, New York.
ROSE, R. M., BOURNE, P. G., POE, R. O., MOUGEY, E. H., COLLINS, D. R. & MASON, J. W. (1969) *Psychosom. Med.* XXXI **5**, 418.