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DEXAMETHASONE SUPPRESSION TEST FOR MAJOR DEPRESSION

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SUMMARY

Overnight post dexamethasone plasma cortisol levels were estimated in thirty patients of major depression and 30 controls. The cut-off point after which post dexamethasone plasma cortisol level could be considered abnormal, in patients of major depression, has been worked out at 15 μg/dl in the present study. The results are discussed.

Introduction

Researches in endocrinology have greatly increased our knowledge about psychibiolgy of depression. The post dexamethasone plasma cortisol levels have been consistently found abnormal in patients of depression by Carroll et al (1970, 1981) and Brown et al (1979). The pioneer workers in this field have observed that abnormal post dexamethasone plasma cortisol level is highly specific for endogenous depression while others refute it as specific biological marker for depression (Amsterdom et al 1982, Rabkin et al 1983). The subject, therefore, still remains controversial.

The present study was, therefore, conducted with an attempt to evaluate the role of dexamethasone suppression test as a diagnostic test for depression.

Material and Methods

After screening 3,253 out patients in the department of psychiatry K.G.'s Medical College and G. M. & Associated Hospitals Lucknow on prefixed inclusion/exclusion criteria, 35 patients were selected for present study, diagnosed to be suffering from major depression (Spitzer et al 1978) and were hospitalised. They were further classified according to ICD-9 (WHO 1977) and severity of depression was rated on Hamilton rating scale for depression. Five patients dropped out from the study due to various reasons.

Complete physical examination was followed by laboratory investigations to rule out systemic disorders. An equal number of age and sex matched control subjects were selected fulfilling the prefixed selection criteria.

Blood for plasma cortisol determination was obtained at 4 P.M. and 11 P.M. on the day following oral administration of 1 mg of dexamethasone at 11 P.M. and plasma cortisol was analysed by the Mattingley's Method (Mattingley 1962) at Industrial Toxicology Research Centre, Lucknow.

Results

The mean plasma cortisol levels (μg/dl) for 30 depressed patients and 30 controls were 18.08 (±5.98) and 11.34 (±2.52) respectively. ($t = 4.81$, d.f. = 58; $p < 0.001$).

Table

Sensitivity, Specificity and Positive Predictive Value of Dexamethasone Supression Test at Different Criterion (μg/dl)

Criterion levels	13	14	15	16	17
Sensitivity	80%	63%	57%	53%	50%
Specificity	60%	70%	83%	87%	93%
Positive Predictive	67%	68%	77%	80%	88%

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The above table shows that if the cutoff values of post dexamethasone plasma cortisol level is increased the sensitivity decreases whereas the specificity and predictive value increases. It is clear that, going above the criteria level of 15 μg/dl sensitivity still decrease but there is very little increase in predictive value. Hence for the present study the most suitable criteria level is 15 μg/dl.

Discussion

In the present study the plasma cortisol criterion level of 15 μg/dl gave the overall sensitivity of 57 %, specificity of 83 % and positivity predictive value of 77 %. Flurometric method of assaying plasma cortisol in DST gives higher cut off point as compared to radio immunoassay and competitive protein binding assay methods (Carroll and Davies 1970) which could be due to measurement of total cortisol activity by flurometric method. Our observation are consistent with other studies (Brown and Shuey 1980, Holsboer 1980, Carroll et al 1981a).

Thus our results indicate that with 1 mg. dose of dexamethasone, with blood sampling at 4 P.M. and 11 P.M. and with plasma cortisol criterion level of 15 μg/dl, DST has moderately high sensitivity, specificity and positive predictive value for major depression.

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