ANTHROPOMETRIC STUDY REVEALED : ANDROGYNY SCORE AS AN IMPORTANT TOOL IN EARLY DIAGNOSIS OF SCHIZOPHRENIA

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ABSTRACT

Anthropometry has become an important tool in the study of genetic disorders, particularly as a diagnostic aid for the clinical geneticists. However, many practicing physicians do not do anthropometry of patients for either unknown or unavailability of appropriate measurements and concerned data. Further development of multivariate approaches will enhance the application of anthropometry as a mean of identifying, classifying and documenting the natural history of many polygenic and heterogenous disorders. The cooperation among Physicians, Geneticists and Anthropologists for assessment of patients and collection of data is essential for early diagnosis of heterogenous disorders like Schizophrenia which is characterized by perturbation of language, perception, thinking, social activity and its prevalence is increasingly worldwide problem because of its more benign course specially in females and no characteristic pathogonomic features .

This study was done on 57 patients of varying age of Schizophrenia diagnosed by Consultant Psychiatrist on the basis of diagnostic criteria (DSM-IVTR criteria)[1] from Department of Psychiatry, S. N. Medical College, Agra and Institute of Mental Health, Agra .

The study revealed highly significant decreased Androgyny score i.e. more femininity in Schizophrenic male patients with and without positive family history of schizophrenia , whereas in Schizophrenic female patients in both groups the increased value of Androgyny score was insignificant.

KEYWORDS - Anthropometry, Androgyny Score, Femininity, Bi-acromial Diameter, Schizophrenia

INTRODUCTION

Anthropometry has become an important tool in the study of genetic disorders, particularly as a diagnostic aid for the clinical geneticists. However, many practicing physicians do not do anthropometry of patients because of several reasons like unavailability of appropriate measurements and concerned data. The cooperation among Physicians, Geneticists, and Anthropologists for assessment of patients and collection of data is essential for early diagnosis of heterogenous disorders like Schizophrenia. DSM-IV-TR[1] (2000) states that Schizophrenia is a group of illnesses, characterized by perturbation of language, perception, thinking & social activity, but there are no pathogonomic features. Syndrome begins in late adolescence, has insidious onset, progressive in nature and present in low socio-economic family and increasingly worldwide problem because it often runs a more benign course especially in females.

Heterogeneous nature of schizophrenia has also been responsible for the often conflicting findings of different investigations, shown by Genetic linkage studies in schizophrenia. Rey and Coppen[2] (1959)

Anthropometric studies have shown that schizophrenics differ markedly from normal subjects with regard to the Biacromial Diameter and the Androgyny Score, while Biiliac Diameter shows no significant deviation. The Androgyny Score is measure of relative maleness and femaleness of a body build Tanner JM[3] (1951). The androgyny score is a discriminant function from measurements of the bi-acromial and bi-iliac diameters of groups of normal men and women. The relative proportions of these two diameters have for many years been known to differ in males from those in females. The androgyny score enables the most effective differentiation to be made between the sexes Rey and coppen[2] (1959). Groups of both male and female schizophrenic

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patients were found to have much lower Androgyny score (i.e. more feminine character) and a smaller Biacromial diameter than group of normal subjects Cowie V. et.al[4] (1960). But Kelsey FD[5](1965) found that women schizophrenic patients showed lower androgyny score but of lesser degree as that of previous studies but he did not found any significant difference in schizophrenic male patients and controls.

Thus This study was done to calculate Androgyny score in Schizophrenic patients with and without family history of schizophrenia and normal males and females and also to find out whether this study could be used as an early Diagnostic tool in diagnosis of schizophrenia.

MATERIALS AND METHODS

57 Patients (33 males and 24 females) of schizophrenic patients well diagnosed on basis of DSM-IV-TR criteria by Consultant Psychiatrist of S.N. Medical college, Agra and Institute of Mental Health, Agra and 58 Controls (28males and 30 females) were taken for this study and datas were analysed statistically by using student t test.

SELECTION OF CASES- The Cases, both males and females, 18 to 60 years of age of Agra region, were having no chronic Physical illness or Psychiatric illness other than schizophrenia and also having no any congenital or Hereditary disorders . The Migrants from other regions or states were excluded to avoid Geographical bias.

SELECTION OF CONTROLS- Controls were taken on the same criteria, in addition it was specifically observed that the controls were not the blood relatives of schizophrenic patients. The very purpose of this exclusion criteria was to avoid the possibility of anthropometric measurements being affected by illness under study.

ANTHROPOMETRIC STUDY was done by measuring with Sliding Anthropometer by taking Diameter between Tips of Acromian Process of Scapula i.e. Biacromial Diameter = a cms

Diameter between Anterior Superior Iliac Spine i.e. Bi Iliac Diameter = b cms

Androgyny Score was calculated by formula -

ANDROGYNY SCORE = 3a b

After selection of cases and controls the following groups were made for further

SM= Schizophrenic Male patients

SMF= Schizophrenic Male patients with positive family history of schizophrenia

SF=Schizophrenic Female patients

SFF=Schizophrenic Female patients with positive family history of schizophrenia

CM = Control Males CF= Control Female

OBSERVATIONS AND DISCUSSION

GROUPS	BIACROMIAL DIAMETER (CMS) (a)		BIILIAC DIAMETER (CMS) (b)	
	MEAN	SD	MEAN	SD
SM	30.57	1.51	24.57	1.36
SMF	29.52	1.49	24.26	1.27
SF	26.66	1.99	24.73	1.81
SFF	27.36	2.37	25.48	1.78
CM	32.64	1.23	25.55	1.16
CF	25.91	1.62	24.51	1.03

TABLE I : Showing Mean and Standard Deviation(SD) of Biacromial Diameter and Biiliac Diameter of Schizophrenic cases and controls:-

GROUPS	MEAN	S.D.	S.E. of MEAN (S.E.)
SM	67.14	4.96	1.139
SMF	64.30	4.43	1.185
SF	55.25	4.89	1.223
SFF	56.67	5.75	1.134
CM	72.37	3.30	0.621
CF	53.22	4.76	1.061

Table- II :Showing Mean and Standard Deviation (SD) of Androgyny score in Schizophrenic patients and controls:-

Subject	Comparison	't' Value	'p' Value	Significance
SM	SMF	0.699	P>0.05	Insignificant
SM	CM	4.348	P<0.01	Highly Significant
SMF	CM	6.654	P<0.01	Highly Significant
SF	SFF	0.653	P>0.05	Insignificant
SF	CF	1.092	P>0.05	Insignificant
SFF	CF	1.575	P>0.05	Insignificant

Table:- III Showing Significance 't' value of Androgyny Score in Schizophrenic cases and controls:-

Androgyny score was found significantly highly lower in Schizophrenic male patients of both groups with and without positive family history of schizophrenia. Ferriman et al6(1957)[6], Cowie et al4(1960)[4], Ray JH &Coppen AJ(1959)[2] , Tanner JM(1951)[3] also found significantly lower androgyny score in males and females schizophrenic patients but they have not mentioned whether patients were having positive family history of schizophrenia or not. For this reason, we have made two groups with and without positive family history of schizophrenia to elaborate the prevalence of genetic or hereditary descendents and found that both the groups of schizophrenic patients were having lower androgyny score i.e. having more feminine characters as compared to controls. Martha Sajatovic et al(2005)[7] found that both men and women with schizophrenia have lower masculine characters as compared with persons without schizophrenia.

RESULT

This Study has shown that Androgyny score was found to be lower in Schizophrenic male patients with positive family history of schizophrenia (SMF) as compared to Schizophrenic male patients (SM) without positive family history and this was highly significant finding in both groups when they are compared to Controls. Thus there are more femininity in schizophrenic male patients in both groups with and without positive family history of schizophrenia as compared to controls. Thus reduced Androgyny Score or more Femininity in males is an alarming anthropometric finding in schizophrenia. Hence the Androgyny Score can be used as a tool in early diagnosis of Schizophrenia especially in the families where there is positive family history of schizophrenia.

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