

THE JOURNAL OF THE EGYPTIAN
PUBLIC HEALTH ASSOCIATION
INTERNATIONAL CONF.HUMAN GENETICS

Volume LXVI Suppl. 1991

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AND TURNER (XO) SYNDROME

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Reprinted from

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ABSTRACT

The aim of the present investigation was to analyze craniofacial morphology in adults with Turner Syndrome (XO) and K.F. Syndrome (XXY), to compare the morphology in patients with 45,XO karyotypes to normal females (XX) and patients with 47,XXY to normal males (XY). A comparison between two Turner patients with the female standards for Egyptian adults and for K.F. patients with the male standards for the Egyptian adults is made.

For each subject, the cephalogram was obtained with the head positioned in a cephalostat and oriented to the Frankfurt Horizontal plane. Various linear and angular measurements have been obtained:

- (a) Skeletal measurements (SNA, SNB for the anterior inclination angle at Sella-Nasion plane; ANB for the facial profile angle; SN-MP, SN-PP, PP-MP, SGO, NMe and ANSMe for the vertical linear measurements).
- (b) Dental measurements in Turner Syndrome showed negative deviation from the normal females while K.F. patients showed positive deviation from normal males. The dental angular were insignificant in Turner and K.F. patients. The dental linear showed positive deviation from normal females in Turner patients and K.F. patients.

These data suggest that the absence of an X-chromosome causes more marked underdevelopment of the mandible, then the upper face and lastly the teeth while the presence of an extra X-chromosome causes changes in the opposite direction.

The results of this research add more evidence to the effect of X-chromosome dosage on quantitative traits similar to what was previously noted regarding dermatoglyphics.

INTRODUCTION

The introduction of the clinical use of the cephalometric analysis was by Broadbent1 in 1931. It is an attempt to utilize linear and geometric measurements to portray the form or growth of the face in a manner that more readily provides comparisons to known standards of idealized norms.

Walker & Kowalski (1971); Watnick (1972); Harris (1975) demonstrated the polygenic inheritance of the craniofacial skeleton.

The size, shape and position of individual cranial components are interrelated in varying degrees (Kjaer, 1990).