COULD BASAL AMH REPLACE HCG STIMULATION TEST IN PATIENTS WITH XY DISORDER OF SEX DEVELOPMENT?
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INTRODUCTION

• Traditionally, the standard endocrinological evaluation of 46, XY disorder of sex development (DSD) cases is based upon measurement of testosterone, dihydrotestosterone and androstenedione and their ratios either in mini-puberty or after Human Chorionic Gonadotropin (hCG) stimulation. More recently, there has been a growing appreciation for assessing Sertoli cell function because the most active compartment of the testis before puberty is the seminiferous tubule compartment, in which Sertoli cells proliferate and secrete hormones like anti-mullerian hormone (AMH) and inhibin B.

• Therefore, basal AMH and inhibin B measurement may be considered a diagnostic tool that gives reliable information about both the presence and function of the testes.

OBJECTIVES

• There are controversies about the value of AMH and inhibin B in the evaluation of cases with XY DSD. Therefore, this study was conducted to highlight the importance of AMH measurement and to determine whether basal AMH is able to predict prepubertal testicular function without stimulation tests or not.

SUBJECTS AND METHODS

• This study was conducted on 33 patients with XY DSD referred to our Endocrinology Clinic in Alexandria University Children’s Hospital through a year. Their age ranged from neonatal period to 13.25 years. All patients were subjected to history taking, general and genital examination, karyotyping, hormonal assessment, and abdominopelvic ultrasound. Some patients needed laparoscopy and gonadal biopsies. Hormonal assessment included basal FSH, LH, AMH, inhibin B, and testosterone measurements and hCG stimulation test by giving hCG (1500 IU/day) intra-muscular injections for three consecutive days. Spearman rank correlation coefficients were calculated between D testosterone and basal inhibin B, AMH, FSH, and LH.

RESULTS

• Using Spearman coefficient, there was statistically significant correlation between basal AMH and testosterone increment after hCG stimulation (delta change of serum testosterone). Inhibin B, FSH and LH had no statistically significant correlation with testosterone increment after hCG stimulation.

• There was statistically significant positive correlation between basal AMH and inhibin B. Thus, when serum AMH had low value, the serum inhibin B was low and vice versa in most of the cases.

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CONCLUSIONS AND RECOMMENDATIONS

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