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The Frequency of Androgen Excess in a Cross of Egyptian Wonen With Polycystic Ovary Syndrome

thesis
submitted for
partial fulfillment of Master degree
in
Obstetrics & Gynecology

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Abbreviations

PCOS polycystic ovary syndrome

T testosterone A Androstendione

E1 oestrone E2 oestradiol

LH leutinizing hormone

FSH follicle stimulating hormone DHEA dehydroepiandrosterone

DHEAS dehydroepiandrosterone sulfate

IGFBP-1 Insulin –lik growth factor binding protein -1

NCAH nonclassical adrenal hyperplasia

ESHRE European Society of Human Reproduction and Embryology

ASRM American Society for Reproductive Medicine

DM Diabetes Mellitus

IRS insulin receptor substrate IGF insulin like growth factor

IR insulin resistance

GnRH gonadotrophin releasing hormone SHBG sex hormone binding globulin ACTH adrenocorticotrophic hormone HSD hydroxysteroid dehydrogenase

EGF epidermal growth factor TGF transforming growth factor

GH growth hormone 5αR 5 alpha reductase

VNTR Variable number of tandem repeats

NCEP National Cholesterol Education Program

LDL low density lipoprotein HDL high density lipoprotein

CAH congenital adrenal hyperplasia NIH National Institute of Health

BMI Body Mass Index

OCP oral contraceptive pills
DHT dihydrotestosterone

3αAG 3 alpha androstandiol glucuronide

FAI Free Androgen Index

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Introduction A Aim of the Work

INTRODUCTION

Polycystic ovary syndrome (PCOS) is one of the major causes of adolescent hyperandrogenism and menstrual disorders. It was first described in 1935, by Stein and Leventhal as a hormonal syndrome found in anovulatory women who also had enlarged multicystic ovaries and hirsutism. They established their hypothesis after noticing that some of their patient recovered their normal menstruating cycles after ovarian biopsies. (Zawadzki et al., 1992)

In April 1990, The National Institute of Health in the United States (NIH) suggested that the diagnosis of PCOS rested on two main features:

- 1- Hyperandrogenism (either biochemical or clinical)
- 2- Chronic oligoanovulation

Clinical signs such as hirsutism are considered sufficient evidence of hyperandrogenism even in the face of apparently normal androgen level (*Balen et al.*, 1999).

In 1999, Kondal et al., defined PCOS according to the following criteria of the Japan Society Of Obstetrics and Gynecology:

Amenorrhea or oligoamenorrhea with or without hirsutism, high plasma level of Luteinizing homone (LH), bilateral normal or enlarged ovaries with multiple small cysts as assessed by transvaginal ultrasonography (*Chang et al.*, 2005)

Later, Balen et al. specified the ultrasonic finding of PCOS to include:

- Presence of more than 10 cysts (2-8mm in diameter) scattered around or through an echodense thickened central stroma in addition to the presence of one of the following criteria:
 - Oligo/amenorrhea with positive progesterone withdrawal bleeding. .
 - Hirsutism/acne, obesity.
 - Raised LH/FSH ratio > 2
 - Raised circulating androgens (Carmina et al., 2006)

Most recently, an expert conference sponsored by the European society of Human Reproduction and Embryology (ESHRE) and the American Society for Reproductive Medicine (ASRM) held in Rotterdam in May 2003, proposed new criteria