

GENETIC AND BIOCHEMICAL EVALUATION OF EARLY MENOPAUSE IN BABYLON PROVINCE

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ABSTRACT : Early menopause (PM) denotes for menopause occurring earlier to 40 years age, also premature menopause discusses menopause occurring at age 45 years, which levels below the age of normal menopause 51 years age. Untimely menopause and early menopause may be involuntary or triggered; if caused, it may exist due to medical procedures like xray or operating intervention for example removal of both ovaries. Genetic etiologies for premature ovarian failure can account for about 20% to 25% of cases. So many studies have tended to analyze the genetic material that can be related to the occurrence of the disease. This project aimed to evaluate the association of candidate genetic polymorphism in HELQ-POLQ LIKE rs4693089 with POF in one district of Iraq (province of Babylon) by enrolling Arab ancestors. The genetic variants that would be studied in this project were carefully selected according to the recent findings in this field and by employed several specialized databases. The selected variant is Helicase, POLQ-like rs4693089 and its relation with premature ovarian failure. This study include (200) females, their ages between (35-40 years) and body mass index in normal and overweight, (50) of them were with amenorrhea for 6 months and the other (150) apparently healthy as control group. The whole blood samples from study subjects were used to measure extract DNA for the study of polymorphisms in Helicase, POLQ-like gene. With regard to rs4693089, no substantial allelic association has been established, but there has been a significant association of the AA genotype with POF, the T allele is a protective recessive allele that, when present as homozygous (AA) will confer a resistant to the individual carrier ($p = 0.032$). The study concludes that gene variants rs4693089 are genetic factors that can modulate POF production in Babylon's Arab population. Though, POF and BMI family history are the highest effective disease risk factor.

Key words : Amenorrhea, premature ovarian failure, HELQ-POLQ LIKE.

INTRODUCTION

The menopause has been considered a biological natural event that affects every woman. For most women, the transition to menopause coincides with mid-life years and has been characterized as a time of multiple physiological, psychological and social changes that can affect the health of women (NAMS, 2000). Physiologically, menopause decline in estrogen was thought to rise the danger of post-menopause illnesses such as diabetes, cardiovascular disease (CVD) and disease of the bone (Paoletti *et al*, 2002).

Physiologically, the estrogen decline with menopause was believed to magnify the risk for chronic illness such as increase blood sugar, heart disease (CVD) and osteoporosis in post menopause (Paoletti *et al*, 2002). Untimely menopause discusses menopause before age of forty also early menopause denotes to cessation of mense at or before 45 years of age (Wassertheil-Smoller *et al*, 2003).

The ranges are below the common age of normal

biological time (time of fifty one years). Early biological time or premature biological time is also natural or evoked; if induced, it's going to result to medical procedures like x ray or surgery like bilateral ablation. each ranges being well below the unrelatedly of cause, girls WHO expertise steroid hormone deficiency at Associate in Nursing time well before the median age of normal biological time were currently recognized to be at exaggerated risk for early health problem and death (Rivera *et al*, 2009). Rocca, that was explore for premature or early climacteric in 2009 was the primary stage in an exceedingly causative series resulting in tissue or organ dysfunction and secretion mechanism defects (Rocca *et al*, 2009). However, Snowdon confirmed that premature or early climacteric was the results of a quicker aging mechanism resolute by genetic or non-genetic reasons together with wholly organs and tissues, together with ovaries, all over the body (Snowdon *et al*, 1999).

Many mutations causing POI were in genes involved with hormone function. Missense mutations in the AMH