

Evaluating the Effect and Distribution of Exon-1 Integrity for Androgen Receptor Gene in Idiopathic Male Infertility Groups in Iraq

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Abstract : Infertility is a major health problem which affects approximately 22% of married couples in reproductive age. Androgens (testosterone and dihydrotestosterone) from another side are essential for male fertility and the maintenance of spermatogenesis, and to determine the expression of male phenotype, and their actions are mediated by single androgen receptor (AR).

So any mutation that disrupts (AR) functions completely or partially results in androgen insensitivity syndrome with impaired spermatogenesis and even XY genotype.

In the present study, male patients with infertility divided as (non-obstructive azoospermia, oligo and oligoasthenozoospermia) were studied in order to investigate the molecular genetics and molecular analysis for androgen receptor gene alteration, as a reason of male infertility in Iraq.

In the present study 100 patients (39 azoospermia, 16 Oligo and 45 oligoasthenozoospermia) were examined, and 30 normal men were subjected for detection of androgen receptor gene alteration using molecular analysis by polymerase chain reaction (PCR) for exons (1) of androgen receptor gene.

The results show deleted exons (1) as detection by PCR in the groups of infertile men but control group.

The Androgen receptor (AR) gene deletion was considered in most infertile groups as compared with control group, and in exons (1) the highest percentage of deletion was registered in oligoasthenozoospermic patients 40% from wild exon in a highly significant differences ($P < 0.01$), but azoospermic patients wasn't deleted in exon (1).

The patients with deleted exon 1, registered decrease in sperm (morphology, motility, progressive motility) and grades (A and B) of sperm motility, while grade (D) was increased as compared with the wild exon (1) in a highly significant differences ($P < 0.01$).

The results demonstrated the necessity of the exons (1) presence and integrity of the AR function and spermatogenesis process.

Keywords : Infertility, Androgen receptor, oligoasthenozoospermia, exons (1), spermatogenesis.