A STUDY ON HORMONAL LEVELS OF SUBFERTILE MEN WITH IDIOPATHIC NON-OBSTRUCTIVE AZOOSPERMIA OR OLIGOSPERMIA

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Introduction

Infertility affects approximately 15% of married couples and 50% of them are due to male factors. Idiopathic non-obstructive azoospermia (INOA) or idiopathic non-obstructive oligospermia (INOO) is a condition affecting males who are suffering from subfertility. Measurements of testosterone, follicle stimulating hormone (FSH), luteinizing hormone (LH) and prolactin are useful in the assessment of pituitary gonadal function of these subfertile men.

Objectives

The objectives of this study were to analyze serum testosterone, FSH, LH and prolactin concentrations in a group of subfertile men with INOA or INOO and compare those findings with a group of healthy fertile men.

Materials and Methods

Men with primary subfertility due to absence of sperms without obstruction to vas deferens and ejaculatory ducts are considered as INOA. Subfertility with sperm count less than 20 millions without obstruction to vas deferens and ejaculatory ducts are considered as INOO. Clinical history was taken from all subjects and physical examination was performed. All subjects and control had their semen analysed. Scrotal and transrectal ultrasound scans (TRUS) were performed to exclude the obstruction to vas deferens, seminal vesicles and ejaculatory ducts in the subfertile group. Serum testosterone concentration was measured using radio immuno assay (RIA) technique and FSH, LH, and

prolactin concentrations were measured using the immuno radio metric assay (IRMA) technique. Married males in a comparative age group (20-45 years) who have one or more children were selected as the control group.

Results

There were 30 subfertile men with INOA or INOO in the study group and 30 fertile men in the control group. Mean age of the study group and the control group was 35 ± 2.1 years and 34 ± 1.5 years respectively. Three subfertile men had a family history of subfertility and 8 patients had a history of mumps in the past.

Mean seminal volume of subfertile group and control group was 2.4ml and 3.3ml respectively. There was a significant difference between the mean seminal volume of the study group and the control group ($P< 0.000$). Mean liquefaction time of semen in the subfertile group and control group was 35 minutes and 25 minute respectively and P^H was 7.4 ± 0.8 and 7.5 ± 0.1 respectively. Among subfertile men 17 had azoospermia and 13 had oligospermia. Out of 13 subfertile men with oligospermia, 12 had less than 50% active motile sperms and 1 had more than 50% active motile sperms.

Mean concentration of serum testosterone, FSH, LH and prolactin in subfertile group was 10.51 ± 7.1nmol/l, 26.64 ± 25.9IU/l, 8.99 ± 5.2 IU/l and 170.7 ± 79.3mIU/l respectively. The mean concentration of serum testosterone, FSH, LH, and prolactin in control group was 15.86 ± 4.6 nmol/l, 4.62 ± 2.1 IU/l, 5.64 ± 3.9 IU/l and 167 ± 66.7mIU/l respectively. 50% of subfertile group had low testosterone concentrations. This study group showed significantly low serum testosterone concentration compared with the serum testosterone concentration in the control group ($P<0.001$). 73% of subfertile men had high FSH concentrations and 23% subfertile men had high LH concentrations. FSH concentration and LH concentration were significantly higher in subfertile group compared to the control group (FSH $P<0.000$, LH $P<0.007$). 86% of INOA and INOO men showed abnormalities in serum testosterone, FSH and LH concentrations. However there was no significant difference in prolactin concentrations between the study group and the control group ($P<0.846$).

Conclusion

Subfertile men with INOA and INOO showed testosterone deficiency and high FSH and LH concentrations indicative of hypergonadotropic hypogonadism.