

# Impact of varicocelectomy on gonadal and erectile functions in men with hypogonadism and infertility.

Zohdy W, Ghazi S, Arafa M.

Department of Andrology, Faculty of Medicine, Cairo University, Cairo, Egypt. wzohdy62@hotmail.com

## Abstract

### **INTRODUCTION:**

Previous reports linked varicocele in infertile males with Leydig cell dysfunction and hypogonadism.

### **AIM:**

The aim of this study was to determine the impact of varicocelectomy on serum total testosterone (TT) level and erectile function in men with infertility and clinical varicocele.

### **METHODS:**

This study included 141 heterosexual infertile men diagnosed to have clinical varicocele. They were divided into two groups: group 1 (103 men), who had microsurgical varicocelectomy, and group 2 (38 patients), who decided to pursue assisted reproduction procedures. All participants completed the International Index of Erectile Function (IIEF)-5 questionnaire and underwent semen analysis. Serum levels of follicle stimulating hormone (FSH), luteinizing hormone (LH), prolactin, and TT were measured both at recruitment time and 6 months later.

### **MAIN OUTCOME MEASURE:**

Changes in serum TT and IIEF-5 following varicocelectomy.

### **RESULTS:**

In group 1, the mean TT level increased significantly post-varicocelectomy ( $379.1 \pm 205.8$  to  $450.1 \pm 170.2$  ng/dL,  $P < 0.0001$ ). No similar change was found in group 2. Out of the 49 patients in group 1 with hypogonadism at baseline assessment (TT < 300 ng/dL), 37 (75.5%) exhibited a postoperative normalization of TT. However, only 3/15 hypogonadal men (20%) in group 2 had normal testosterone levels at the second visit. IIEF-5 scores improved significantly postoperatively in patients with hypogonadism ( $17.1 \pm 2.6$  to  $19.7 \pm 1.8$ ,  $P < 0.001$ ). Neither operating vein diameter  $3.6 \pm 0.57$  mm nor testicular size  $10.46 \pm 3.3$  mL correlated with the mean change in TT ( $71.1 \pm 101.2$  ng/dL) ( $r = 0.162$ ,  $P = 0.183$  and  $r = -0.077$ ,  $P = 0.536$ , respectively).

### **CONCLUSIONS:**

Varicocele is associated with hypogonadism in some infertile patients. Varicocelectomy significantly improves serum testosterone in infertile men, especially those with hypogonadism. This improvement in TT level may be reflected in the IIEF score.

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