Pituitary-Gonadal Function after Renal Transplantation

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Dear Sir,

In a recent report in Nephron, Nieszporek et al. [1] studied the pituitary-gonadal axis after renal transplantation in 24 patients (18 males and 6 females). They were divided into two groups according to the immunosuppressive therapy they received. In spite of diminished testosterone levels, basal LH levels were normal in both groups and showed a blunted response to its releasing hormone (Gn-RH or luteinizing hormone) only in the ciclosporin group. In both groups, basal FSH levels and their response to the releasing hormone were significantly higher than in the controls. The authors concluded that after renal transplantation, pituitary secretion of gonadotropin was abnormal, being influenced by the type and duration of the immunosuppressive therapy. We carried out a similar study in 8 males, 9.3 ± 2.1 months after successful renal transplantation ($\text{Cr} < 150 \text{ mmol/l}$). They were receiving conventional azathioprine/prednisone immunosuppression. In our study, basal plasma testosterone, LH, FSH, prolactin (PRL) and β -estradiol levels as well as the response of LH and FSH to its releasing hormone were measured and compared with the same assays made in 9 healthy males. Statistical analysis was performed using the unpaired Student's t test.

Basal FSH and LH levels were higher in the transplanted patients than in the controls, whereas basal plasma testosterone and PRL levels were similar in both groups. On the other hand, basal estradiol levels were significantly lower after transplantation (table 1). In addition, LH and FSH response to Gn-RH were significantly higher in the transplanted patients (table 2). Results are expressed as mean $\pm$ SD.

Discrepancies between the results obtained by Nieszporek et al. [1] and our data could be explained by the fact that we performed our study only in males in order to avoid the physiological variation in gonadotropin secretion in females. The dose of immunosuppressive drugs,

Table 1. Basal plasma LH, FSH, testosterone, prolactin and estradiol levels in the transplanted patients (T) and controls (C)

Table 2. LH and FSH response to $100 \mu\text{g}$ Gn-RH in the transplanted patients (T) and controls (C)

the age of our patients (34.7 ± 13 years old) and the time after transplantation were similar in both studies. Stimulation tests were performed in our patients at 4 p.m. Since the diurnal variation of LH and FSH levels is undetectable in the majority of male adults (and this secretion seems to be pulsatile, varying greatly from one individual to another [2]), we do not think that the time variation could explain these differences.

Therefore, our results strongly suggest that a partial primary testicular failure seems to occur after renal transplantation. Pituitary hypersecretion for gonadotropin is the consequence, because testosterone and estradiol lev-

344

Benito/Martín-Malo/Castillo/Aljama

els [3] fail to activate the negative feedback control mechanism for the secretion of both gonadotropins. Uremic damage to the testes before transplantation as well as corticoid treatment which can inhibit steroid production [2] could be responsible for the low response of the testes to increased gonadotropin levels.

Smith KD, Tcholakian RK, Chowdhury M, et al: Rapid oscillations in plasma levels of testosterone, LH and FSH in men. *Fertil Steril* 1974;25:965–975.

Marshall JC, Case GD, Volk TW, et al: Selective inhibition of follicle-stimulating hormone secretion by estradiol. Mechanism for modulation of gonadotropin response to low-dose pulses of gonadotropin-releasing hormone. *J Clin Invest* 1983; 71: 248–258.

References

Nieszporek T, Grzeszczak W, Kokot F, et al: Influence of type of immunosuppressive therapy on secretion of somatotropin and function of the pituitary-adrenal and pituitary-gonadal axis in patients with a kidney transplant. *Nephron* 1989; 53:65–69.

Book Reviews

5. Bengmark (ed.)

The Peritoneum and Peritoneal Access

Butterworth, Guildford 1988 XII+ 376 pp.; E75.00 ISBN 0–7236–07672

The peritoneum and peritoneal access is a scholarly source in which everything of importance on the peritoneum has been collected in one multiauthor volume. Thus it includes several chapters of interest to nephrologists – including the following: Pathology of the peritoneum by J.W. Dobbie; Peritoneum and peritoneal pharmacology by J. Rubin; Peritoneal catheters by R. Khanna and D.G. Oreopoulos; CAPD by R. Khanna and D.G. Oreopoulos; and Peritoneum: the nephrologist's view – a comparison of PD and hemodialysis by Z. Gluck and K.D. Nolph. The book is a gold mine of references, and all who engage in peritoneal dialysis should have a copy.

Per Carlsson, Hans-Göran Tiselius (eds.) Extracorporeal Shock Wave Lithotripsy

Medical, Technical, Economic and Policy Implications

Health Service Studies, vol. 2

Linköping Collaborating Centre, Linköping 1989

128 pp.; US\$25.00

ISBN 91–7870–489–8

This is a short, soft-backed book produced in Europe and is the result of a conference on Extracorporeal Shock Wave Lithotripsy held in Sweden. There are authors from Sweden, Britain, USA, Federal Republic of Germany, The Netherlands, and Denmark (WHO). The

articles are short, easy to read, and adequately illustrated. It is a useful book to read, if you are in nephrology training and need to have an up-to-date knowledge of the subject.

Announcement

International Symposium on Transplant Monitoring

March 3–8, 1991, Jerusalem, Israel

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