PROLACTIN, ZINC AND SEXUAL ACTIVITY IN DIALYSIS PATIENTS

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Impotence may result from zinc (Zn) deficiency or prolactin excess [1, 2]. Since sexual dysfunction is a frequent complication in patients with renal failure we studied the status of Zn and prolactin in uraemic patients on regular dialysis treatment (RDT).

Plasma Zn was determined by atomic absorption spectrometry [3] and prolactin by radioimmunoassay*.

Plasma Zn levels were significantly lower and prolactin concentrations significantly higher in dialysis patients compared with transplanted patients. In 21 patients Zn levels were 84 ± 11 μg/100ml (mean ± SD) compared with 121 ± 37 for 14 post-transplant patients (p < 0.01). Prolactin levels were 997 ± 1095 μU/ml in 32 dialysis patients and 129 ± 86 in 16 patients after transplantation (p < 0.01).

We therefore tried Zn supplementation and prolactin inhibition with bromocriptine in 10 male patients on RDT, with sexual dysfunction of 14 to 65 months duration.

The sexual evaluation was carried out with an extensive interview. Each patient was given a score from 0–4 according to the following criteria; 0 = total impotence; 1 = libido but no erection; 2 = erection; 3 = successful sexual intercourse once/month; 4 = sexual intercourse once/week.

The average score in our patients was 0.7 ± 0.9. Five patients were given Zn supplementation (zinc chloride – 400 μg/L of elemental zinc dissolved in the dialysate for four to eight weeks) and five patients were given bromocriptine (2.5mg orally twice daily) for five to nine weeks. The sexual scores of all patients were re-evaluated after treatment. Patients in both groups improved; sexual activity increased from a mean score of 0.7 ± 0.9 to 2.7 ± 1.05 (p < 0.001).

Prolactin levels decreased in all cases from a mean of 1108 ± 1257 μU/ml to 300 ± 495 while testosterone increased (in eight out of ten patients) from 2.72 ± 1.8ng/ml to 3.7 ± 1.9. The sexual activity of Zn treated patients improved from a mean score of 0.6 ± 0.9 to 2.6 ± 1.1. This improvement did not differ signifi-

* Kit PROL-K manufactured by Sorin, Saluggia, Italy
cantly from the bromocriptine treated group (from 0.8 ± 1.1 to 2.8 ± 1.1). In four out of five Zn treated patients testosterone increased from 3.7 ± 2.2 to 4.7 ± 2.2.

The significant improvement of sexual score in Zn treated patients was associated with a decrease in prolactin levels from 686 ± 1015μU/ml to 374 ± 629; this prolactin lowering effect of Zn supplementation has not been previously reported. FSH and LH levels were variable in both bromocriptine and Zn treated patients. No significant untoward effects were observed in either treatment group. Three bromocriptine treated patients demonstrated a fall in mean arterial pressure, an effect previously described by Kaye [4].

From the results of this study Zn supplementation and bromocriptine therapy can be considered potentially new and interesting approaches to the treatment of sexual dysfunction in haemodialysis patients.

References

4 Kaye, SB, Shaw, KM and Ross, EJ (1976) Lancet, ii, 1176