Normalization of Elevated Prolactin Levels in Hemodialysis Patients on Erythropoietin

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Dear Sir,

Sexual function is frequently restricted in patients maintained by hemodialysis [1, 2]. This alteration seems to be caused by both psychological [1] as well as hormonal factors [3, 4]. Especially elevated prolactin levels have been made responsible for reduced libido and sexual activity [5, 6]. Moreover, sexual activity of dialysis patients has been found to correlate with the degree of anemia [2].

Winearls et al. [7] and Eschbach et al. [8] were the first to describe successful treatment of renal anemia with recombinant human erythropoietin (r-HuEPO). More recently, Bommer et al. [9] reported that correction of anemia with r-HuEPO in patients on hemodialysis was associated with improvement of sexual function in 3 out of 6 males treated. However, up to now it is unknown as to whether ameliorated well-being or more specific mechanisms, such as correction of sex hormone disturbances, contribute to the improved sexual behaviour.

For these reasons, we determined plasma prolactin levels in hemodialysis patients (9 females, 7 males) treated with r-HuEPO for correction of their anemia. Erythropoietin was obtained from Amgen/Ortho/Cilag. Plasma prolactin concentrations were assessed by a radioimmunoassay using a double antibody technique as outlined previously [10].

During 4 months of r-HuEPO treatment, hematocrit values rose from 24 ± 1 to $36 \pm 0.2\%$.

Hemoglobin increased from 7.3 ± 0.3 to 11.3 ± 0.2 g/100 ml. As can be

Table I. Change of plasma prolactin concentrations (ng/ml) in patients maintained by hemodialysis prior to and after 16 weeks of treatment with r-huEPO

Females (n = 9)		Males (n = 7)	
pre	16 weeks	pre	16 weeks
66.9 ± 9.3	9.6 ± 2.6	39.5 ± 10.5	10.3 ± 1.0
$p < 0.001$		$p < 0.001$	

Significance of differences was determined by a paired t test. All data are given as mean $\pm$ SE. seen in table I, elevated plasma prolactin concentrations decreased significantly during therapy both in male and female patients. After 16 weeks of r-HuEPO, plasma prolactin levels were normalized in all patients treated. This was associated with improved sexual performance in 4 out of 7 male patients and 5 females started to menstruate again during r-HuEPO treatment.

It is conceivable that improved sexual function in these patients was due to the reduction of plasma prolactin levels. This observation corresponds well to findings reported by Bommer et al. [4] that reduction of prolactin values by bromocriptine treatment restored sexual function in male dialysis patients. Up to now, however, it remains unclear whether normalization of prolactin values during r-HuEPO therapy is due to the correction of anemia or reflects a specific effect of the hormone itself.

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