(Figure 1B) compared to the pre-sorafenib treatment: the transversal diameter of the caval and renal veins, from 32 to 22 mm and from 22 to 18 mm, respectively.

In our patient, sorafenib-induced thrombus regression suggests a role for angiogenesis in this process. Indeed, activation of intracellular signalling (phosphoinositol 3P, Ras/Raf kinase and MAP kinase) pathways mediated by the expression of tissue factor, a thrombotic key factor, has been linked to tumour progression [2,3]. Because oncogenic activation of the Ras/Raf pathway may lead to a sustained proliferative signal resulting in tumour growth and progression, inhibition of this pathway may represent an attractive approach for ICNE treatment. Furthermore, vascular endothelial growth factor (VEGF) was found to be increased after retinal vein occlusion [4] and intra-vitreal injection of bevacizumab, an anti-VEGF antibody, can improve visual acuity in those patients. In analogy to this condition, we hypothesized that in our patient, sorafenib, an orally active multi-kinase inhibitor, initially identified as a Raf kinase inhibitor, might have induced the partial resolution of venous thrombus and its extension in the renal vein, thus leading to renal function recovery.

Conflict of interest statement. None declared.

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1. Kuczyk MA, Munch T, Machtens S *et al*. The impact of extracorporal circulation on therapy-related mortality and long-term survival of patients with renal cell cancer and intracaval neoplastic extension. *World J Urol* 2002; 20: 227–231
2. Abe K, Shoji M, Chen J *et al*. Regulation of vascular endothelial growth factor production and angiogenesis by the cytoplasmic tail of tissue factor. *Proc Natl Acad Sci USA* 1999; 96: 8663–8668
3. Belting M, Dorrell MI, Sandgren S *et al*. Regulation of angiogenesis by tissue factor cytoplasmic domain signaling. *Nat Med* 2004; 10: 502–509
4. Hayashi A, Kim HC, de Juan E Jr. Alterations in protein tyrosine kinase pathways following retinal vein occlusion in the rat. *Curr Eye Res* 1999; 18: 231–239

doi: 10.1093/ndtplus/sfm004

Advance Access publication 11 December 2007

Low serum PSA levels of diabetes mellitus-caused end-stage renal disease patients

Sir,

The prevalence of cancers increases in end-stage renal disease (ESRD) patients [1]. Prostate-specific antigen (PSA) is a useful serum marker for prostate cancer, one of the most common malignant neoplasmas; the levels are often elevated in ESRD [2], which is likely to be associated with an increased prevalence of prostate cancer [1]. Diabetes mellitus (DM) (mostly type 2) is the major cause of ESRD; however, in accordance with low serum PSA levels in DM patients [3], the risk of prostate cancer is decreased in DM patients [4], while that of other cancers is increased [5]. How are the PSA levels and prostate cancer prevalence of ESRD patients caused by DM?

Table 1. Parameter comparison in patients with ESRD caused by DM or CGN

	DM	CGN
Number of patients	332	549
Age (years)[a]	$65.66 \pm 0.50^{\#}$	64.10 ± 0.43
Haemodialysis duration (years)[b]	$5.97 \pm 0.22^{*}$	11.87 ± 0.34
Serum PSA (ng/ml)[c]	$1.53 \pm 0.20^{*}$	2.09 ± 0.22
Number of patients with PSA >4 ng/ml[d]	19 (5.9%)**	47 (8.9%)
Number of patients undergone prostate biopsy[e]	6#	14
Number of prostate cancer-detected patients[f]	3#	9

Values were the means ± SE. $^{*}P \leq 0.05$. $^{**}P \leq 0.1$. # not significant.
[a]*t*-test, [b,c]Kruskal–Wallis test and [d,e,f]chi-square test were used.

To address this issue, we chose subjects of ESRD caused by DM or chronic glomerulonephritis (CGN) (as a control) receiving haemodialysis, and measured their serum PSA concentrations. The mean age, a risk factor of prostate cancer, was no different between the two groups (Table 1). The haemodialysis duration was twice as long in the CGN group (Table 1), but was unrelated to PSA levels in both groups when examined by Spearman's correlation coefficient obtained using the rank test. The PSA levels were significantly lower in the DM group compared to those in the CGN group (Table 1). This is in agreement with previous results showing that the PSA levels of DM patients were low in subjects without ESRD [4]. The PSA levels of the DM or CGN group were similar to those of healthy volunteers (1.63 ± 0.13 ng/ml) and ESRD patients (2.18 ± 0.12 ng/ml), respectively [2]. This indicates that PSA levels of ESRD DM patients are slightly lower than those of healthy volunteers, and that the PSA levels of CGN are representatives for the ESRD population. The prevalence of prostate cancer was not significantly different between the two groups, yet there is a tendency for a decreased number of patients with PSA values >4 ng/ml in the DM group, in comparison with the CGN group (Table 1). The levels of testosterone associated with increased prostate cancer risk, and those of insulin that promotes prostate cancer cell growth, are lower in DM patients [5]; these factors remain at lower levels after the patients advance to ESRD, which may explain low PSA levels in the DM group.

Our results suggest that DM is associated with decreased PSA levels, and likely of prostate cancer risk, irrespective of the complication of ESRD. These results support an inverse relationship between DM and prostate cancer.

Conflict of interest statement. None declared.

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1. Hernandez J, Thompson IM. Prostate-specific antigen: a review of the validation of the most commonly used cancer biomarker. *Cancer* 2004; 101: 894–904
2. Wada Y, Nakanishi J, Takahashi W *et al*. Mass screening for prostate cancer in hemodialysis patients: a comparative study. *BJU Int* 2006; 98: 794–797
3. Werny DM, Saraiva M, Gregg EW. Prostate-specific antigen values in diabetic and nondiabetic US men, 2001–2002. *Am J Epidemiol* 2006; 164: 978–987
4. Bonovas S, Filioussi K, Tsantes A. Diabetes mellitus and risk of prostate cancer: a meta-analysis. *Diabetologia* 2004; 47: 1071–1078
5. Kasper JS, Giovannucci E. A meta-analysis of diabetes mellitus and the risk of prostate cancer. *Cancer Epidemiol Biomarkers Prev* 2006; 15: 2056–2062

doi: 10.1093/ndtplus/sfm001

Advance Access publication 10 January 2008

Evaluation of depression, quality of life and malnutrition–inflammation scores in haemodialysis patients: a cross-sectional analysis

Sir,

Depression is the most common psychiatric illness in patients with end-stage renal disease (ESRD), and has been associated with increased risk of death, cardiovascular events and hospitalization in a substantial proportion of patients [1–3]. Impaired quality of life (QoL) has been reported in dialysis patients and is a marker of poor outcome [4]. We assessed the prevalence of depression and QoL status among a cohort of 60 chronic haemodialysis patients, between June and August 2007. Their mean age was 46.13 ± 16.55 years, with a range of 22–77 years. They consisted of 31 males and 29 females ($P = 0.91$). The duration of RRT was 67.03 ± 56.09 months. They were on three times weekly dialysis at the Kasr El-Aini Nephrology and Dialysis Centre, Cairo University Hospital. We explored the relationship between depressive symptoms and poor QoL on the one hand and socio-demographic profile, dialysis adequacy, laboratory parameters and malnutrition–inflammation score (MIS) on the other. The MIS consists of four sections [nutritional history, physical examination, body mass index (BMI) and laboratory values] [5]. We used the Beck Depression Inventory (BDI) to assess the severity of depression [6] and SF-36 questionnaire to assess QoL in the study group [7].

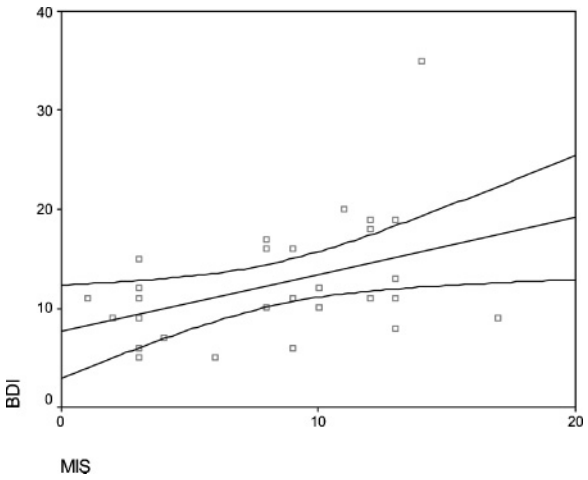

Fig. 1. Correlation between BDI and MIS in all study subjects ($R^2 = 0.163$, $P = 0.02$).

We found a high prevalence of depressive symptoms in this cohort as 20 patients (33.33%) had BDI score ≥15. Fourteen patients with BDI scores ≥15 were females ($P = 0.02$). Patients with BDI scores ≥15 had significantly lower total QoL scores and mental component scores ($P = 0.01$). Employment was found to significantly affect BDI scores; all patients with BDI scores ≥15 were unemployed (Table 1). The mean BDI score of unemployed patients was significantly higher than employed patients (13.03 ± 6.27 versus 8.50 ± 3.51, $P = 0.03$). Widowed patients had significantly higher BDI and lower F-36 scores compared to single, married and divorced patients ($P < 0.05$). Patients with BDI scores ≥15 had higher MIS values, although the difference was not statistically significant ($P = 0.06$). MIS showed significant positive correlations with BDI scores ($P < 0.05$) (Figure 1) and significant negative correlations with F-36 scores ($P < 0.05$). Neither age, BMI, MIS, dialysis adequacy, haemoglobin, blood urea and serum creatinine, calcium, phosphorus and albumin were predictors of BDI scores on regression analysis ($P > 0.05$).

The prevalence of depression in the current study was higher than that previously reported in the DOPPS study (20%) [8] and the CHOICE study (19–24%), respectively [9]. The difference in prevalence of depression between European, American patients and our study group may reflect the differences in age (mean age of patients surveyed in the current study was 46.13 ± 16.55 years compared to 60.0 ± 15.3 years in the DOPPS study). Previous studies have shown a lower prevalence of depression among older people [8,10]. Development of ESRD in middle age usually leads to a severe disruption of patients' physical and social activities, with consequent psychological distress and poor QoL. These findings highlight the impact of the malnutrition–inflammation complex (MIC) on the quality of patients' life and their mental health. MIC occurs commonly in maintenance haemodialysis patients and correlates with increased morbidity and mortality [5]. Serum albumin, however, did not correlate with BDI scores in our study; this could be explained by the near normal serum albumin levels in our study group (3.83 ± 0.45 g/dl).