

CLINICAL STUDY

**Mild Renal Injury in Behçet's Disease<sup>#</sup>**

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**ABSTRACT**

*Aim:* The aim of this study is to investigate the frequency of microalbuminuria and abnormal urinary beta<sub>2</sub>-microglobulin excretion in patients with Behçet's disease (BD). *Materials and Methods:* Twenty-eight patients and 27 healthy controls were included in this study. Urine albumin/creatinine and beta<sub>2</sub>-microglobulin/creatinine ratios were calculated. *Results:* The frequency of microalbuminuria and abnormal urinary beta<sub>2</sub>-microglobulin excretion was higher among patients with BD than in control group, but this was not statistically significant ( $p>0.05$ ). *Conclusion:* Microalbuminuria and abnormal beta<sub>2</sub>-microglobulin excretion are markers of renal injury, which have not been investigated in BD previously. Renal injury in BD is more frequent than has been recognized and it is most often in mild nature.

*Key Words:* Behçet's disease; Renal injury; Microalbuminuria; b-2-microglobulin.

**INTRODUCTION**

Behçet's disease (BD) was first described by Hulusi Behçet in 1937 and consists of a triad of recurrent ulcers of the oral and genital mucosa with relapsing uveitis.<sup>[1,2]</sup> Since its first description, addi-

tional organ involvements have been documented. Skin, central nervous system, and pulmonary involvements are among those reported. Subcutaneous thrombophlebitis, deep vein thrombosis, epididymitis, arterial occlusion and/or aneurysms, arthralgia, arthritis, family history, renal problems and gastrointestinal features are

<sup>#</sup>See Ref. [1].

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other manifestations of BD.<sup>[2-8]</sup> Cumulative analysis of renal involvement in BD demonstrated 159 cases with specific renal disease recently<sup>[9]</sup> and thereafter several more cases with specific renal disease have been reported.<sup>[10-15]</sup> The frequency of renal problems associated with BD reported to vary between 0% to 55%.<sup>[9]</sup> The aim of this study is to investigate the frequency of microalbuminuria and abnormal urinary beta<sub>2</sub>-microglobulin excretion in patients with BD.

### PATIENTS AND METHODS

Twenty-eight patients (9 male, 19 female, mean age 30 years, range 19-55) and 27 healthy controls (13 male, 14 female, mean age 37 years, range 22-65) were included in this study. All patients fulfilled the criteria of International Study Group for the diagnosis of BD.<sup>[16]</sup> Patients having genito-urinary infection or a history of urogenital disease or received cyclosporine previously were excluded.

Urine creatinine concentrations were measured by Hitachi modular PP autoanalyzer (Tokyo, Japan) using kit named Creat-Roche (Roche Diagnostics GmbH, Mannheim, Germany). Urinary albumin excretion was detected by immunoturbidimetric assay (Alb plus-Roche, Roche Diagnostics GmbH, Mannheim, Germany). Urine beta<sub>2</sub>-microglobulin was measured by chemiluminescence method (Immulite, BIODPC, Los Angeles, USA). Urine albumin/creatinine and beta<sub>2</sub>-microglobulin/creatinine ratios were calculated.

Microalbuminuria was defined as albumin/creatinine ratio (mg/mmol) between 2.38 to 19 (men) and 2.96 to 20 (women).<sup>[17]</sup> Urinary beta<sub>2</sub>-microglobulin/creatinine ratio higher than 300 µg/gr were accepted as abnormal.<sup>[18]</sup>

**Table 1.** Microalbuminuria and abnormal urinary beta<sub>2</sub>-microglobulin excretion among the patients with Behçet's disease (BD) and controls.

Parameter	Patients with BD (n=28)	Control group (n=27)
Microalbuminuria		
Present	8 (29%)	2 (7%)
Absent	20	25
Abnormal urine Beta <sub>2</sub> -microglobulin excretion		
Present	7 (25%)	3 (11%)
Absent	21	24

Chi-square test with Yates' correction was used statistical analysis and a p value less than 0.05 was accepted statistically significant.

### RESULTS

The number of patients and controls with microalbuminuria and abnormal urinary beta<sub>2</sub>-microglobulin excretion are presented in Table 1. Although the frequency of microalbuminuria and abnormal urinary beta<sub>2</sub>-microglobulin excretion was higher among patients with BD than in control group, this was not statistically significant (p>0.05).

### DISCUSSION

Renal problems associated with BD have been reported many times since 1963 and the frequency of renal involvement shows a wide variation. Oshima et al.<sup>[19]</sup> found abnormal urine findings in 13 of 65 (20%) patients with BD. Chajek and Fainaru have published one of the striking articles regarding renal involvement in BD in 1975.<sup>[3]</sup> Based on the evaluation of the clinical findings of 683 previously published cases and their 41 cases, Chajek and Fainaru stated that 'BD does not affect the kidney'. Herreman et al.<sup>[20]</sup> have investigated urinary findings and kidney biopsies of 10 patients without any symptoms related to renal disease. They found proteinuria more than 100 mg/day in four patients and described several abnormalities by light microscopy and immunofluorescent staining even in patients without proteinuria. Rosenthal et al.<sup>[21]</sup> have evaluated urinalysis records of 77 patients retrospectively (urinalysis records were available only in 33 patients) and 51 patients prospectively. They found proteinuria and/or microhematuria in 25 of the 84 patients (30%).

Besides, in general, a control group was not present and renal problems were only a small and insignificant part in the studies reporting frequency of renal problems in BD. In addition, renal problems have not been addressed in many studies.<sup>[22,23]</sup> Although renal problems associated with BD are not common in clinical practice, it may progress to renal failure. Amyloidosis, glomerulonephritis and cyclosporine nephrotoxicity are the major causes of renal failure in BD.<sup>[10]</sup> Cyclosporine is used in the management of some manifestations of BD.

Microalbuminuria and abnormal beta<sub>2</sub>-microglobulin excretion are markers of renal injury, which have not been investigated in BD previously. Although the

