



Evaluation of renal function in patients with psoriasis using immunobiologicals *

Avaliação da função renal de pacientes com psoríase em uso de imunobiológicos

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Abstract: The aim of this study was to evaluate renal function in patients with psoriasis using immunobiologicals. A prospective study was conducted with 15 patients with confirmed diagnosis of psoriasis who were starting to use immunobiologicals. The mean age was 41±11 years, with 60% females. The mean time of disease was 11±6.6 years. Significant changes in creatinine and creatinine clearance were not observed in the course of the study. There was an increase in transaminases and a decrease in magnesium levels.

Keywords: Drug toxicity; Immunosuppressive agents; Psoriasis; Renal insufficiency; Transaminases

Resumo: O objetivo deste estudo é avaliar a função renal de pacientes com psoríase em uso de imunobiológicos. Foi realizado estudo prospectivo com 15 pacientes com diagnóstico confirmado de psoríase, que iniciariam o tratamento com algum imunobiológico. A média de idade foi de 41±11 anos, sendo 60% do sexo feminino. O tempo médio de doença era de 11±6,6 anos. Não foram evidenciadas alterações significativas nos valores de creatinina sérica e/ou do clearance de creatinina durante o estudo. Houve aumento das enzimas hepáticas e redução dos níveis de magnésio.

Palavras-chave: Imunossupressores; Insuficiência renal; Psoríase; Toxicidade de drogas; Transaminases

In dermatology the only disease in which the use of immunobiologicals is permitted is psoriasis, with infliximab, adalimumab and etanercept being the commonest used.^{1,3}

Infliximab has the most common adverse reactions associated with drug infusion such as urticaria, fever, blood pressure fluctuation, anaphylaxis and infections.^{4,5} Hepatic toxicities are reported as an uncommon side effect of this drug.⁶

The most common adverse effects of Etanercept are local reactions in the site of injection, respiratory infections and headaches.⁴ Adverse effects of Adalimumab include local reactions and infections.⁶ Another substantial reaction to the treatment of TNF- α inhibitors is the exacerbation of heart failure.^{5,7}

Renal effects of immunobiologicals are seldom described.⁴ Probable cases of glomerulonephritis and nephritic syndrome induced by immunobiologicals

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have been observed in patients treated for rheumatoid arthritis, juvenile arthritis psoriasis and psoriasis.⁸⁻¹⁰ The present study aimed to evaluate the effect of immunobiologicals in the renal function of patients with psoriasis.

A prospective study to evaluate renal function was conducted in an out patient clinic with 15 patients with confirmed diagnosis of psoriasis and using immunobiologicals (infliximab, adalimumab, etanercept).

Patients of both genders, aged 18-69 years, with confirmed diagnosis of psoriasis (severity area - PASI >10 for at least 6 months, non-responders to topical therapy) were included.

Patients with previous systemic therapy (acitretin, methotrexate or cyclosporine) using nephrotoxic drugs and with chronic kidney disease were excluded. Laboratory evaluation was done before and after the use of immunobiologicals.

The patients mean age was 41.7±11.6 years, with 60% female. The mean time of disease was 11.1±6.6 years. The main immunobiologicals used were infliximab (40%) and etanercept (40%), in doses of 400mg and 50mg respectively.

At the first medical consultation, total blood count and the following were all normal: lipidogram, Na, K, Ca, Mg, serum proteins, amilase, AST, ALT, alkalyne phosphatase, GGT, urea, creatinine, 24h proteinuria, microalbuminuria, creatinine clearance, urinalysis, FENa, FEK, torax radiography, PPD, antinuclear antibodies, serologies for viral hepatitis/syphilis/CMV. There were no significant abnormalities in the values of serum creatinine or creatinine clearance during the use of immunobiologicals.

The mean value of AST before the use of immunobiologicals was 24.5±6.08IU/L, while during treatment it was 162.6±469.2IU/L. The mean value of ALT before the use of immunobiologicals was 24.1±8.8IU/L and 148±410IU/L during treatment.

During the study period two patients were withdrawn from infliximab due to acute hepatitis. Both patients were also using isoniazid for tuberculosis prophylaxis.

The mean value of serum magnesium levels before the use of immunobiologicals was 2.0±0.26 mg/dL, and during treatment 1.7±0.19 mg/dL. The mean value of tryglicerides before treatment was 133.2±73.5mg/dL while during treatment it was 174.9±130.1mg/dL. The mean value of serum K before treatment was 4.3±0.32 and 4.1±0.27 during treatment.

The mean value of FEK before treatment was 46.23±28.19%. After treatment it was 35.6±11.79%.

The mean creatinine clearance before treatment was 106.18±33.9mL/min. During treatment the minimum creatinine clearance was 103.28±33.23mL/min, while the maximum creatinine clearance was

117.87±40.5mg/dL.

The initial mean microalbuminuria was 6.33±5.47mg/day. During treatment the minimum microalbuminuria was 5.89±5.39mg/day and the maximum 8.36±6.28mg/day.

The comparison of laboratory tests before and after the use of immunobiologicals showed as significant changes an increase in liver enzymes (AST, ALT) and decreased levels of magnesium (Mg), as summarized in table 1. There was also a trend towards increased triglycerides and serum potassium (Table 1).

There was no significant change in creatinine clearance or microalbuminuria before and after treatment (Table 2).

Whereas some studies have shown renal abnormalities after the use of immunobiologicals, the present study did not show significant renal function changes after the use of immunobiologicals.^{4,8,9,10} There was a tendency for potassium levels to decrease.

An important increase in liver enzymes was noted during treatment, with some cases of acute hepatitis. These patients were using infliximab. It was not possible to establish the relationship between inflix-

TABLE 1: Comparison of laboratory tests of 15 patients with psoriasis followed up in an outpatient clinic, before and after the use of immunobiologicals

	Pre-treatment	Post-treatment	P
Hb (g/dL)	14.1±1.8	14.6±1.5	0.14
Ht (%)	42.2±4.3	43.3±4.4	0.27
White blood count (mm ³)	6977±1886	6331±2328	0.27
Platelets (mm ³)	250000±57909	245700±38511	0.79
ESR (mm)	22±19	23±17	0.73
Total Cholesterol (mg/dL)	197±56	194±46	0.73
HDL (mg/dL)	43±12	44±14	0.61
LDL (mg/dL)	131±43	114±39	0.29
Triglycerides (mg/dL)	140±82	190±129	0.05
Fast Glucose (mg/dL)	74±23	85±16	0.33
C-reactive protein (mg/dL)	2.5±5.3	0.8±1.2	0.38
Na (mEq/L)	138±3.5	137±4.8	0.67
K (mEq/L)	4.2±0.3	4.1±0.2	0.09
Ca (mg/dL)	9.0±0.4	8.9±0.5	0.43
Mg (mEq/L)	2.0±0.3	1.7±0.1	0.01
Urea (mg/dL)	26±8.0	27±10	0.84
Creatinine (mg/dL)	0.78±0.11	0.79±0.17	0.8
Albumin (g/dL)	4.21±0.35	4.26±0.27	0.27
Globulins (g/dL)	3.0±0.5	2.9±0.5	0.69
AST (IU/L)	24.5±6.08	162.6±469.2	0.0001
ALT (IU/L)	24.1±8.8	148±410	0.0001
Amilase (IU/L)	65±21	73±32	0.35

TABLE 2: Comparison of laboratory tests for renal function of 15 patients with psoriasis followed in an outpatient clinic, before and after the use of immunobiologicals

	Pre-treatment	Post-treatment	P
Creatinine Clearance	90.02±41.6	95.31±38.77	0.85
Microalbuminuria	5.6±2.9	10.7±7.1	0.14
FEK %	40.27±26.25	35.36±12.9	0.63
Urine specific gravity	1015±3.6	1013±5.1	0.5
Urine pH	5.8±0.7	5.9±0.7	0.76

imab and hepatotoxicity given that these patients were also using isoniazid, a potentially hepatotoxic drug, used in tuberculosis prophylaxis.

A significant fall in the levels of serum magnesium was also observed, but the urinary magnesium was not measured, so that it was not possible to assess associated hypermagnesiuria.

The electrolyte abnormalities found suggest possible tubular nephrotoxicity caused by the immunobiologicals. We believe that more specific studies should be undertaken in order to better investigate renal tubular changes induced by immunobiologicals. □

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