

Use of cyclosporin in a patient with hepatitis C and pustular psoriasis

Uso da ciclosporina em paciente portador de hepatite C e psoríase pustulosa

Lislaine Bomm¹
Roberto Souto²
Alexandre Gripp⁴

Carolina Cotta Zimmermann¹
Aline Bressan³

Abstract: Cyclosporine has been contraindicated in patients with chronic infections such as infection with hepatitis C because of its immunosuppressive effect. Recent studies have shown however that cyclosporine suppresses viral replication and thus cannot exacerbate infection with hepatitis C when employed for treating patients with psoriasis. We present the case of a female patient with psoriasis for 30 years and hepatitis C for 20 years, with diffuse circinate lesions. Improvement in the skin condition and liver enzymes was obtained with the use of cyclosporine, with no adverse effect.

Keywords: Cyclosporine; Hepatitis C; Psoriasis

Resumo: A ciclosporina tem sido contraindicada nos pacientes com infecções crônicas, como a infecção pelo vírus da hepatite C, devido ao seu efeito imunossupressor. No entanto, estudos recentes têm demonstrado que a ciclosporina suprime a replicação viral e pode, desta forma, não exacerbar a infecção pelo vírus da hepatite C, quando administrada como tratamento para pacientes com psoríase. Apresentamos o caso de uma paciente portadora de psoríase há 30 anos e hepatite C há 20 anos, com lesões circinadas difusas, que apresentou melhora cutânea e das enzimas hepáticas com o uso da ciclosporina, sem apresentar nenhum efeito adverso.

Palavras-chave: Ciclosporina; Hepatite C; Psoríase

INTRODUCTION

With the increased incidence and/or prevalence of infectious diseases, including infection with hepatitis C (3% of world population), it is not uncommon in clinical practice for patients to present with both psoriasis and hepatitis C, which makes treatment a challenge for the dermatologist.¹

Systemic treatment of psoriasis is performed with so-called conventional drugs such as methotrexate, cyclosporin and acitretin, as well as with immunobiological medicines.² The choice of medication depends on patient variables such as age, sex, co-morbidities, underlying diseases, lifestyle etc. Hepatitis C is mainly treated with a combination of interferon

(which works directly against the virus and boosts immune response) with ribavirin (synthetic analogue of guanosine which acts directly on RNA and DNA viruses).^{3,4}

In patients with psoriasis and hepatitis C, interferon exacerbates psoriasis and the hepatotoxicity and immunosuppression caused by the majority of therapies for psoriasis treatment, which could worsen the hepatitis C infection. It is therefore contraindicated in these conditions. However, recent findings on the anti-viral effect of cyclosporin on the hepatitis C virus have opened new prospects for using it safely and effectively in patients with psoriasis and hepatitis C.

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¹ MD, Resident in Dermatology, Pedro Ernesto University Hospital, Rio de Janeiro State University (HUPE - UERJ), Rio de Janeiro (RJ), Brazil.

² MD Dermatologist, Auxiliary in the General Outpatient Dermatology Clinic, Pedro Ernesto University Hospital, Rio de Janeiro State University (HUPE - UERJ), Rio de Janeiro (RJ), Brazil.

³ Post-graduation in Dermatology, Pedro Ernesto University Hospital, Rio de Janeiro State University (HUPE - UERJ), Rio de Janeiro (RJ), Brazil; MD Dermatologist in infirmary and immunobiology clinic, Pedro Ernesto University Hospital, Rio de Janeiro State University (HUPE - UERJ), Rio de Janeiro (RJ), Brazil.

⁴ Master's degree in Dermatology; Assistant Professor of Dermatology and Head of Dermatology Infirmary of the Pedro Ernesto University Hospital, Rio de Janeiro State University (HUPE - UERJ), Rio de Janeiro (RJ), Brazil.

CASE REPORT

Female patient, 75 years old, diagnosed with plaque psoriasis treated with topical drugs for over 30 years, with worsening of skin lesions over previous 6 months. The lesions became more erythematous, pustular, pruritic and painful, with scaly edges. The patient (current weight 51kg) admitted to no other systemic symptoms. Dermatological examination revealed erythematous, circinate scaly edges on upper and lower limbs, the inframammary region, trunk and face (Figures 1 and 2). Past medical history of hepatitis C when clinically monitored in hepatology service 20 years previously, with worsening of liver function in the last year.

Skin biopsy and laboratory tests showed altered liver enzymes (Table 1). Cyclosporine 3mg/kg/day was started and after 8 weeks the patient showed improvement of skin lesions (Figure 3) and liver enzymes. The PASI score decreased from 27 to 9, with a serum cyclosporine value of 219 ng / ml.

DISCUSSION

Circinate pustular psoriasis or pustular ring is a localized form of pustular psoriasis manifested by outbreaks of annular lesions, with erythema and pustules on the periphery, generally located on the trunk and roots of members with no systemic manifestation. It is rare condition and typical psoriasis lesions are usually not present.

Cyclosporine is an immunosuppressive medication that can be very useful for the treatment of psoriasis. It belongs to the family of calcineurin inhibitors and acts as a prodrug since it remains inactive until it connects with its cytoplasmic receptor known as cyclophilin.² The cyclosporin-cyclophilin complex



FIGURE 2: Detail of lesion

inhibits calcineurin phosphatase activity, leading to inhibition of T-cell function and to decreased production of IL-2 (interleukin 2). The recommended daily dose for the treatment of psoriasis is 3-5mg/kg/day.^{2,3}

Using cyclosporine is at present contraindicated for patients with difficult-to-control arterial hypertension, renal dysfunction and T-cell lymphoma.³ It also involves a number of relative contraindications such as breastfeeding, the use of other immunosuppressants, migraine and in patients with chronic infections. Therefore a good clinical and laboratory evaluation of the patient is needed before using this medication. Due to the risk of nephrotoxicity, hypertension and malignancy, the use of cyclosporine should be used for a minimum length of time.^{1,2,3}

A patient's inability to generate an effective



FIGURE 1: Plate circinata in the lower limb



FIGURE 3: Post-treatment with cyclosporin

TABLE 1: Laboratory

	Starting cyclosporine	2 months after cyclosporine started
Hemoglobin	14	13
Hematocrit (HCT)	41	39.8
Leukocytes	6100	7500
Platelets	150,000	315,000
AST (N: 32-45)	91	64
TGP (N: 32-45)	93	43
Bilirubin	2.15	1.73
Creatinine	0.9	0.9
Urea	28	32
Phospho. alkaline	409	148
Gamma GT	181	150
Albumin	3.2	3.3
Ciclosporinemia		
Ref 200-500	-	219
INR	1.8	1.1

immune response is one factor which causes an infection to become established and maintain its chronicity, as in the case of patients with hepatitis C. This explains why cyclosporine is traditionally contraindicated in patients with chronic infections⁴.

Recent studies nevertheless demonstrate that cyclosporine acts as a mechanism for suppressing the viral replication of HCV. This occurs by inhibiting the functional association of intracellular cyclophilin (a cofactor for viral replication) with the viral protein NS5B (crucial viral protein for viral replication), thus decreasing the HCV viral load and leading to improved liver function in some cases.^{4,5} Studies also suggest that the HCV genotype 1b is the most sensitive

to inhibition by cyclosporine given that it is dependent on the cyclophilin for replication.^{6,7}

Evidence also exists that the inhibitory effect of cyclosporine on HCV viral replication (by blocking cyclophilin) is independent of the immunosuppressive function of cyclosporine, which is achieved through the inhibition of calcineurin.^{7,8}

The use of cyclosporine in patients with psoriasis and hepatitis C improves skin condition without exacerbating hepatitis. In some cases it may even lead to improvement in liver function and viremia.^{8,9} The case described above showed clinical improvement with the use of cyclosporine, as well as improvement of liver enzymes, with no adverse effects.

These recent findings of the anti-HCV effect of cyclosporine renew the prospects for considering this drug to be a good option for treating psoriasis in patients with hepatitis C. Although more studies on its safety and efficacy are called for (the literature contains only a few case reports) it can be used with caution. □

ERRATUM

The last name of the author was published wrong in one issue of 2011. The correct name of the author is Carolina Cotta Zimmermann and the abbreviation is Zimmermann CC.

The article that should be corrected is:

Bomm L, Zimmermann CC, Souto R, Bressan A, Gripp A. Use of cyclosporin in a patient with hepatitis C and pustular psoriasis. *An Bras Dermatol.* 2011;86(4 Suppl 1):S193-5.

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MAILING ADDRESS / ENDEREÇO PARA CORRESPONDÊNCIA:

Lislaine Bomm

Avenida Boulevard 28 de setembro, 77

Vila Isabel

20551-030 Rio de Janeiro (RJ) – Brazil

E-mail: lislainebomm@gmail.com

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