Case Report

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Alopecia areata after hepatitis C virus infection treatment: a case report

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ABSTRACT

Dermatological diseases may be the only early clinical manifestation of liver disease for patients. It has been shown that at least one skin manifestation develops in approximately 17% of chronic HCV infection patients. Dermatological manifestations have also been seen with antiviral therapy for HCV. It is difficult to distinguish that cutaneous adverse reactions are associated with antiviral therapy or cutaneous manifestations of HCV. Interferon-free direct-acting antiviral (DAA) therapies in the chronic hepatitis C virus (HCV) infections have low side effects. Sofosbuvir/ribavirin (SOF/RBV) therapy combination is among in the currently approved treatment regimens. Alopecia areata is a very rare side effect of this treatment. A case of alopecia areata developed after SOF/RBV combination therapy in a patient with chronic hepatitis C infection is presented.

Keywords: Alopecia areata, hepatitis C virüs, sofosbuvir/ribavirin

INTRODUCTION

It is estimated that 71 million people are infected with the hepatitis C virus (HCV) worldwide. It is the major cause of chronic liver disease in the world, including cirrhosis and hepatocellular carcinoma (HCC) (1). Interferon-free direct-acting antiviral (DAA) therapies in the chronic HCV infections are considered to be a significant improvement with a sustained virologic response, excellent tolerability and low side effects (2,3). The use of sofosbuvir/ribavirin (SOF/RBV) for genotype 3 for 24 weeks in the treatment of chronic hepatitis C is among the currently approved treatment regimens (4). Anemia (often due to ribavirin), weakness, nausea/vomiting, headache, rash, and alopecia are among the side effects (5). Alopecia areata is a very rarely reported side effect (6,7).

A case of alopecia areata developed after SOF/RBV combination therapy in a patient with chronic hepatitis C infection is presented.

CASE

A 52-year-old male with chronic hepatitis C genotype 3, treated with SOF/RBV, was being followed up at the infectious diseases outpatient clinic. He had hair loss in follow-up. Patient consulted with dermatology clinic. Dermatological examination revaled that; two sharply demarcated, 1-2 cm in size, alopecic areas with non-cicatricial ground were observed in the occipital region. The laboratory examination of the patient, complete blood count, biochemistry values routine thyroid stimulating hormone, free thyroxine hormone, total triiodothyronine, anti-thyroglobulin, antiperoxidase antibody, antiparietal cell antibody and vitamin B12 were found within normal limits. The patient had no comorbid disease. The patient was using sofosbuvir 400 mg/day +ribavirin 1000 mg/day due to chronic HCV infection. The 6th month of treatment was completed. The patient stated that the hair loss started in about a month. In the skin scrapings taken from the alopecic areas by the dermatologist, no pathogen, fungal or bacterial agent could be isolated. No different etiological agent causing alopecia was detected in the laboratory results of the patient. The treatment for chronic HCV infection was completed. His treatment was planned for alopecia areata and he was called for a control one month later. In the control examination of the patient, it was observed that the areas that developed alopecia regressed greatly. This situation was evaluated as alopecia areata that developed after SOF/RBV combination therapy. The treatment was arranged by the dermatology clinic and partially benefited from the treatment. There was no full recovery (**Table**).

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Table. The characteristics of the patient before and after chronic hepatitis C infection treatment

Patient Characteristics	
Age	46
Gender	M
HCV genotype	3
Underlying condition	None
Liver histopathology	
Stage	1
HAI	6
Laboratory results at admission	
HCV RNA (IU/ml)	497000
AST (U/L)	23
ALT (U/L)	45
Laboratory results after treatment (6 month)	
HCV RNA (IU/ml)	Negative
AST (U/L)	22
ALT (U/L)	28
Laboratory results 3 months after treatment was completed	
HCV RNA (IU/ml)	Negative
AST (U/L)	29
ALT (U/L)	27

ALT: Alanine aminotransferase, AST: Aspartate Aminotransferase, HAI: Histological Activity Index

DISCUSSION

Dermatological diseases may be the only clinical manifestation of liver disease for patients. It has been shown that at least one skin manifestation develops in approximately 17% of chronic HCV infection patients (8). Dermatological manifestations have also been seen with antiviral therapy for HCV. It is difficult to distinguish that cutaneous adverse reactions are associated with antiviral therapy or cutaneous manifestations of HCV (9-11).

In our study, a rare complication, alopecia areata developed after treatment of chronic hepatitis C was presented. Post-treatment alopecia of hepatitis C virus infection is often interferon-related. In addition, there are studies showing that alopecia developing after interferon therapy is reversible. Nowadays, Interferon-free DAA therapies are well tolerated drugs (12). In the treatment of chronic hepatitis C, SOF/RBV for genotype 3 for 24 weeks is among the currently approved treatment regimens (4). Current studies have shown that the SOF/RBV combination achieves very good response rates with a good safety profile in terms of side effects in patients infected with HCV genotype 2 or 3 (7, 13, 14). Alopecia developing in the treatment of hepatitis C virus infection has been frequently associated with interferon (14, 15), but an alopecia areata that developed after SOF/RBV treatment was presented in our case. It is an extremely rare side effect. In a study evaluating 58 patients with genotype 2 or 3 and using SOF/RBV for treatment in our country, one alopecia areata developed after the use of SOF/RBV was reported (6). In a study conducted in Russia, patients treated with the SOF/RBV combination were evaluated. Side effects of alopecia areata developing after the SOF/RBV combination have been reported (7). The exact pathogenesis of alopecia areata is not known, although substantial evidence exists to suggest roles for genetic factors, nonspecific immune and organ-specific autoimmune reactions, and environmental triggers (16). Our patient did not have a comorbid disease other than hepatitis C virus infection. In hepatitis C virus infection, the diagnosis of alopecia areata is made by examination (17-19). Alopecia due to other etiologies is not different from alopecia that develops after hepatitis C virus infection treatment (18). Alopecia that develops during hepatitis C virus treatment is usually a major cosmetic problem. Alopecia is an important side effect of the treatment that affects the patient's compliance with the treatment of hepatitis C virus infection (20).

CONCLUSION

Many studies have shown that the drugs used in the treatment of chronic hepatitis C infection have dermatological side effects. Alopecia areata is one of them and it should be kept in mind that alopecia areata may be the only skin symptom of chronic hepatitis C virus infection or may develop secondary to drugs used in the treatment of hepatitis C.

ETHICAL DECLARATIONS

Informed Consent: Written informed consent was obtained from all participants who participated in this study.

Referee Evaluation Process: Externally peer-reviewed.

Conflict of Interest Statement: The authors have no conflicts of interest to declare.

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Author Contributions: All of the authors declare that they have all participated in the design, execution, and analysis of the paper, and that they have approved the final version.

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