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Determination of Whether Vitiligo is a Contraindication to Interferon Therapy in Chronic Hepatitis C

Seyed Moayed Alavian [1,2,*]

[1]Baqiyatallah Research Center for Gastroenterology and Liver Diseases, Baqiyatallah University of Medical Sciences, Tehran, Iran
[2]Middle East Liver Disease Center, Tehran, Iran

[*]*Corresponding author*: Seyed Moayed Alavian, Baqiyatallah Research Center for Gastroenterology and Liver Diseases, Baqiyatallah University of Medical Sciences, Mollasadra St., Vanak Sq. P.O. Box: 14155/3651, Tehran, Iran. Tel: +98-2188945186, Fax: +98-2188945186, E-mail: chairman@kowsarcorp.com

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Hepatitis C virus (HCV) infection is now recognized as a major health problem worldwide (1, 2) and after hepatitis B, it is one of the major causes of chronic hepatitis, cirrhosis and hepatocellular carcinoma. Controlling HCV infection is an important public health concern because the majority of infections do not resolve and instead lead to chronic infection (3-5). It is estimated that around 200 million individuals are infected with HCV infection worldwide (6, 7). Even within the same geographic region, there are significant demographical variations in HCV prevalence (4, 5). Pegylated recombinant human α-interferons (PEGIFN) in combination with ribavirin are now the first line treatment for chronic HCV infection (8). Numerous side effects with combination therapy have been reported. The major side effects include influenza-like symptoms, gastrointestinal disturbances, psychiatric symptoms, hematologic abnormalities (leukopenia, neutropenia and thrombocytopenia), thyroid dysfunction and occasionally respiratory and dermatologic symptoms (9). Most of the side effects are mild, reversible and controllable; however, some of them are severe and even life threatening.

Autoimmune disorders are the main contraindication to HCV infection treatment with alpha-interferon (∝-INF) (10). Alpha-INF is the main therapeutic agent in patients infected with HCV; however, it can induce the production of autoantibodies and can lead to autoimmune disease (11). Interferons are cytokines that can regulate the functions of immune effectors and are responsible for signals linking innate and adoptive immunity, and potentially coordinate the autoimmunity associated with INF-α therapy. Alpha-INF induces numerous target genes in antigen presenting cells (APCs) leading to APCs stimulation, humoral autoimmunity enhancement, isotype switching promotion, and potently autoreactive T cells activation. Moreover, INF-α can synergistically amplify T cell auto-reactivity by directly promoting T cell activation and keeping activated T cells alive (12).

Vitiligo is an idiopathic, acquired form of skin disorder that occurs when melanocytes die or become nonfunctional. Although the etiology of vitiligo is unknown, the role of autoimmunity and genetic factors are currently more suspected. The presence of serum autoantibodies targeting the melanocytes surface antigens (13) and existence of a large number of T cells specific for melanocyte antigens in vitiligenous lesions (14) suggests an autoimmune etiology. HCV is associated with autoimmune disorders, however, no study has shown any association between HCV infection and vitiligo (15, 16).

Vitiligo can occur after INF-α therapy in patients with chronic hepatitis C and B (17, 18). The first case of vitiligo in patients with chronic hepatitis B was reported by Alavian et al. (18) in 2002; in their report, the lesions appeared after initiation of therapy with INF-α and disappeared after the therapy was stopped. The onset and course of ∝-INF therapy-associated vitiligo is variable and the existence of other autoimmune disorders such as hashimato's thyroiditis can predispose the patient to this side effect (19). It is interesting to mention that there is a report of vitiligo lesions disappearance after initiation of INF-α and ribavirin therapy due to immune modulation effects (20). Vitiligo at injection site of PEG-α2a-IFN was reported in patients with chronic hepatitis C infection (21). However, despite the worldwide use of interferon therapy for HCV and HBV infection, the occurrence of vitiligo is very rarely reported in the literature, although we have seen a few cases during our practice (19). Finally, it is important to emphasize that the existence of vitiligo is not a contraindication for interferon therapy.

Implication for health policy/practice/research/medical education:
Skin lesions and management of them are important issue for clinicians in approach to patients.

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