Alopecia is an important problem in medical trichology. Sometimes, alopecia can be due to complicated etiologies including infections. In this article, the details of alopecia due to some important hepatitis viral infections (hepatitis B and hepatitis C) were specifically focused.

Key words: Alopecia, infection, hepatitis, problem, trichology, virus

Abstract

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Introduction to Alopecia

Alopecia is an important condition in dermatology. By definition, alopecia can be simple clarified as an abnormal condition presenting with excessive hair loss (1,2). The hair loss might be partial or total. The problem of alopecia is an important concern in trichology. Generally, alopecia is usually due to the problem of hair and skin at the site with alopecia (3). The problem can be due to several local problems (Table 1). However, alopecia sometimes can be due to complicated etiologies which are usually systemic problems. The good examples are infection, neoplasm and metabolic diseases. In this article, the authors will present the details of alopecia due to some important viral hepatitis (hepatitis B and hepatitis C). Special focus is made on diagnosis and treatment.

Alopecia in Hepatitis Virus Infection: Clinical Presentation

Hepatitis virus is the name of important group of viruses that causes the pathology to liver and mainly attack liver cell. There are several kinds of hepatitis viruses including hepatitis A virus, hepatitis B virus, hepatitis C virus, etc. Mainly, hepatitis virus infection usually manifests with fever and hepatic presentations (especially for jaundice and increased level of liver enzymes). However, the alopecia can be a possible manifestation of hepatitis virus infection. The widely mentioned hepatitis virus infection that can manifest alopecia is hepatitis C virus infection. Indeed, some cutaneous manifestations, especially for lichen planus are frequently seen in the patients infected with hepatitis C virus (4). According to a recent study by Maticic et al. in Slovenia, the prevalence of pruritus, dry skin and alopecia was higher in the patients with hepatitis C virus infection comparing to healthy controls (4). The prevalence of alopecia among the patients with hepatitis C virus in this study was about 9.9% (4). According to another report by Podányi et al., alopecia was also mentioned as one of the important skin disorders among the patients with hepatitis C virus infections (5). The proposed mechanism inducing alopecia in the patients with hepatitis C virus infection is the trigger of the immunologic processes via CD8 + cytotoxic T lymphocytes (5). This process is believed to lead to alopecia and other dermatological manifestations (such as palpable purpura, urticaria, prurigo, lichen ruber planus and vitiligo (5). However, some publications reported against the
possible relationship between hepatitis C virus infection and alopecia (6). Hence, this topic is still the controversial issue to be further studied. For hepatitis B virus infection, there are some interesting reports for its relationship with alopecia. The proposed mechanism is the autoimmunity after receiving hepatitis B virus (7). According to the study by Geier and Geier, significant increased risk of alopecia (odd ratios=7.2) could be detected (7).

For diagnosis of alopecia in hepatitis virus infection, the appearance is usually alopecia areata (4,5,7). There is no significant predominant different characteristic of alopecia from alopecia due to other etiologies. However, the clue for diagnosis of this condition is the history of recent hepatitis virus infection or jaundice. Also, as described, other concomitant skin disorders such as palpable purpura can be observed (5). On the other hand, it should also be noted that the skin disorders including alopecia can be the single manifestation of hepatitis virus infection (8). It is noted that liver should be examined in presence of skin diseases including alopecia that are clearly explained for the exact pathophysiological mechanisms (8,9). Focusing on the treatment, the use of standard alopecia treatment methods such as use of hair growth promotion substance can be effective. However, there is an important condition of alopecia due to the standard treatment of hepatitis virus infection. This is the interferon-induced alopecia. It is noted that the post-treated patients have significant increased prevalence of alopecia (4). There are many reports concerning this phenomenon in cases of hepatitis C virus infections. The antiviral treatment for chronic hepatitis C virus infection with interferon alfa or peginterferon can result in many dermatological disorders such as generalized skin rashes, pruritus as well as alopecia (10). Either interferon alpha 2a or 2b treatment regimens can result in alopecia at the similar rates (11). Also, there is no difference in rate of alopecia as adverse effect of using either interferon alpha-1 or lymphoblastoid interferon-alpha (12). Also combining therapy between interferon and ribavirin treatment can still result in alopecia with increased rate at the longer treatment period (13-15). Of interest, the trigger of immune mechanism due to treatment is also proposed for the pathophysiological process similar to that induced by viral infection (10). However, the alopecia due to interferon in course of hepatitis C virus treatment is usually alopecia universalis, hence, this is a great cosmetic concern (13-15). Of interest, alopecia is an important side effect of treatment that affects the patient adherence to the treatment of hepatitis C virus infection (15,16). About 10% of overall patients enrolling in treatment ceased the treatment due to several adverse effects including to alopecia (15). Finally, there is no reported relationship between the appearance of alopecia and the success rate of treatment. There is no predictive value of observation alopecia on the treatment outcome and course of disease.

**Treatment for Hepatitis Associated Alopecia**

Focusing on the treatment of interferon related alopecia in treatment of hepatitis C virus infection, the basic treatment can be used. In addition, there are some recent reports indicating that the alopecia can be reversible (17,18). Hair regrowth can be seen at 1-3 months after complete of treatment (17,18). Hence, it is suggested that the physician in charge should reassure the patients who get this problem during interferon treatment for hepatitis C virus infection to continue the treatment until complete course (18).

For treatment of hepatitis B virus infection, the similar problem can be seen although it is not as common (because the interferon therapy is not the main therapeutic regimen in treatment of hepatitis B virus infection). Alopecia can be the result of interferon monotherapy for hepatitis B virus infection (19). The increased rate of alopecia can be seen if the combined therapy between interferon and lamivudine is used (19).

**Conclusion**

Alopecia can be the presentation of some important systemic infections including hepatitis B and hepatitis C. General practitioner has to concern on this fact in practice.

**References**


