Upadacitinib for Successful Treatment of Alopecia Universalis in a Child: A Case Report and Literature Review

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Alopecia areata (AA) is a common autoimmune inflammatory non-scarring disease characterized by well-defined patchy bald lesions, which has an approximate global prevalence of 2% (1). The aetiology of AA remains unclear, but several factors have been implicated in the development of the disease, including genetic, immunological and environmental factors. The association of AA and atopic dermatitis (AD) has been reported, and atopy is thought to increase the risk of AA (2). Treatment of alopecia universalis, the most severe type of AA, is challenging in children, since the therapeutic options are limited (3). Currently, Janus kinase (JAK) inhibitors are emerging as potential therapies for AA; however, their therapeutic effects in children are not well defined. We report here a paediatric case of alopecia universalis concurrent with AD in which clinical remission was achieved with treatment with upadacitinib. In addition, a literature review of similar cases is presented.

CASE REPORT

A 9-year-old female child (weighing 33 kg) presented with a 7-year history of alopecia universalis. She did not report any pain or pruritus of the scalp. Treatment with topical potent steroids, minoxidil, tacrolimus and oral compound glycyrrhizin tablets, and glucocorticoids was ineffective. The patient also had mild AD and her father had previously been diagnosed with allergic rhinitis. Physical examination revealed hair loss of the entire scalp, with the presence of only localized nummular tiny hairs (Severity of Alopecia Tool (SALT) score, 98) (%A–C, Fig. 2). The patient had sparse eyebrows and eyelashes. Erythema, papules, and pigmentation affected the trunk, limbs, cubital fossa, and popliteal fossa (Eczema Area Severity Index (EASI) score, 2.5). Laboratory tests showed elevated levels of eosinophils (1.36*10⁹/L, 14.5%), aspartate aminotransferase (54 U/L), immunoglobulin E (146 IU/mL), thyroid peroxidase antibody (43.37 IU/mL) and thyroglobulin antibody (276.86 IU/mL). No abnormalities were observed in thyroid hormones, trace elements (including lead, zinc, copper, iron, magnesium, and calcium), 25-hydroxy vitamin D, anti-nuclear antibody, and T-SPOT TB test. Considering the lesser side-effects and the patients’ unwillingness to have injection therapy, oral upadacitinib was administered off-label at a dosage of 15 mg per day after obtaining informed consent from her parents. Sporadic hairs were observed after 2 weeks’ therapy. Six weeks later, regrowth of hair all over the scalp was noticed and her eyebrows and eyelashes had become dense (SALT score, 12) (Fig. 1D–F, Fig. 2). After 3 months’ treatment, the patient stopped upadacitinib due to significant regrowth of hair. At the 5-month follow-up visit, she had thick longer hair (SALT score, 9) (Fig. 1G–I, Fig. 2). In addition, the AD was in complete remission and no adverse events were detected.

DISCUSSION

Traditional treatment choices for childhood AA include topical and systemic minoxidil, glucocorticoids, and immunosuppressants (3). Due to their significant side-
Therefore, upadacitinib is a potential promising choice for intractable AA accompanied by AD and for patients who resist injection. Previous clinical trials on upadacitinib did not report the occurrence of malignant tumours or opportunistic infections in adolescents. However, a minority of adults taking 30 mg daily of upadacitinib did report malignant tumours, although all events were confirmed less than 3 months after taking the first dose of upadacitinib (12). Further investigations are thus warranted to evaluate the long-term efficacy and safety of upadacitinib in childhood AA.

In conclusion, we report here a paediatric case with AA and AD, treated successfully with upadacitinib for the first time. This case report provides evidence for the use of low dosage of upadacitinib in the management of concurrent childhood AA/AD.

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REFERENCES