INTRODUCTION

Alopecia areata (AA) in children is related to a poorer prognosis than in adults. This disease, which can severely affect quality of life, lacks an optimal treatment. Recently, methotrexate (MTX) has been proposed as an alternative treatment for severe cases of AA.

Our objective was to report our experience with this treatment in the pediatric population with AA.

CASE REPORT

We describe three children treated with MTX for AA [Table 1]. Two of them were managed with a dose of 15 mg/week while the third patient started with 7.5 mg/week with progressive increases according to clinical response, with a maximum dose of 17.5 mg/week. The drug was successful in two cases [Figures 1 and 2], but in one of them, it had to be stopped due to an abnormal increase in liver function enzymes.

DISCUSSION

AA is a difficult-to-treat condition. Available treatments could induce hair regrowth, but they do not change the course of the disease. Few studies about treatment in severe cases of AA include children among their assessed individuals. Topical immunotherapy with diphencyprone, pulses of systemic corticosteroids, psoralen and ultraviolet A, and 308-nm excimer laser have been reported as effective in pediatric patients. In addition, in the last decade, MTX has been proposed as an alternative and safe option for severe cases in AA in both adults and children. Although the use of MTX in children is considered off-label, this drug has been widely used in this population, mainly for rheumatological diseases. The most common adverse events have been stomatitis, nausea, vomiting, and increased values of liver enzymes. They were all reversible and disappeared after discontinuation of the drug or reduction of the dose.
of more than 50%, with a percentage of relapse of 33%. The success rate increased up to 77% in those who were receiving systemic corticosteroids in combination with MTX and decreased to 44% in those receiving MTX alone. Anuset et al. developed a retrospective study of 26 patients with AA receiving MTX in combination with corticosteroids (mean dose of MTX of 10 mg/week). Among them, they included four children/adolescents (ages between 10 and 15 years). Focusing on the pediatric patients, three out of four achieved a complete regrowth, but a later relapse was observed in two of them.

In the largest series of pediatric patients ($n = 14$), a dose between 15 and 25 mg a week reached a regrowth >50% of the hair in 38% of the cases ($n = 5$), without serious adverse events. It is important to note that in this series, five patients concomitantly received systemic corticosteroids at an initial stage while another three received systemic corticosteroids along with MTX. On the long-term, three of these five responder patients

Table 1: Patients receiving methotrexate for alopecia areata

| Case 1 | Case 2 | Case 3 |
|--------|--------|--------|
| **Gender** | Female | Male | Female |
| **Age at therapy onset (years)** | 11 | 7 | 11 |
| **Duration of the disease (months)** | 12 | 2 | 2 |
| **Pattern** | Ophiasis | Plaque-type (>20% of the scalp), alopecia of eyebrows and eyelashes | Totalis, Alopecia of eyebrows |
| **Previous treatments** | High-potency topical corticosteroids | High-potency topical corticosteroids, Ocular corticosteroids | High-potency topical corticosteroids, Topical minoxidil (2%) |
| **Personal** | Asthma, Allergic rhinitis, Autoimmune thyroiditis | Atopic dermatitis | No |
| **Family history** | Alopecia areata (brother) | No | Psoriasis (grandmother) |
| **Dose of methotrexate** | 15 mg/week | 15 mg/week | 7.5 mg-17.5 mg/week |
| **Treatment period (months)** | 25 | 4 | 14 |
| **Hair regrowth** | Successful (>75%) | Successful (>75%)* | Unsuccessful (no hair regrowth) |
| **Adverse events** | No | Abnormal liver function tests | No |
| **Ongoing treatment** | Yes (tapering dose) | No | No |
| **Cause of discontinuation** | - | Abnormal liver function tests | Lack of efficacy |
| **Concomitant treatment** | No | - | Oral systemic corticosteroids* |

*Relapse at 3 months after stopping methotrexate, *After 3 months of starting methotrexate, corticosteroids were added (pulses of 250 mg/month). Previously to starting MTX, all cases had been evaluated with blood cell counts, liver and renal function tests, purified protein derivative test, viral infectious serology (human immunodeficiency virus and B and C hepatitis virus), and chest X-ray. In all cases, before starting MTX, an initial dose between 2.5 and 7.5 mg was tried, and a complete blood cell count analysis was performed 1 week later. All children received 5 mg of folic acid weekly. MTX: Methotrexate.
suffered from a relapse, being MTX successful in two of them.\textsuperscript{[8]}

Several authors have suggested continuing with MTX in responders for 18–24 months, with later progressive tapering of the dose.\textsuperscript{[2]} However, the need for a maintenance treatment with MTX after achieving a successful hair growth rate has also been proposed.\textsuperscript{[6,10]} If there is no response after 6–9 months, MTX should be stopped.\textsuperscript{[2]}

Finally, and even though uncommon in severe, extensive, or long-term disease, the possibility of spontaneous hair regrowth in AA should be taken into account when interpreting the results of therapeutic intervention studies.\textsuperscript{[10]}

In conclusion, we have reported three pediatric cases of AA treated with MTX with a successful response in two cases. An increase in liver function enzymes led to stopping the drug in one of the good responders. We agree with the above-discussed studies that MTX could be an alternative treatment for severe cases of AA in children.

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Conflicts of interest

There are no conflicts of interest.

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