

Reductions in serum IgE levels with methotrexate and azathioprine treatment in patients with atopic dermatitis

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Abstract

Background: Moderate to severe atopic dermatitis (AD) is difficult to treat. There are rare reports on the treatment of moderate to severe AD by lowering serum IgE with a combination of methotrexate (MTX) and azathioprine (AZA) and hence improving symptoms. **Objective:** This study aimed to improve AD symptoms by lowering serum IgE with a combination therapy of MTX and AZA. **Design:** Retrospective cohort study of patients treated during 2013 and 2019. **Setting:** Patients recruited from a tertiary care university hospital in Taiwan. **Participants:** Sixty-five (case group) and 36 (control group) patients with moderate to severe AD, aged between 10 and 77 years. **Measurements:** Patients in the case group received a combination of MTX (15 mg weekly) and AZA (150 mg daily) for 1 to 5 years. Patients in the control group received any therapies other than this combination. Serum total IgE levels were checked periodically in both groups. **Results:** Serum total IgE was markedly reduced in the case group. For example, the cumulative success rates of a 50% IgE reduction in the case group in year 1 and year 5 were 69.2% and 98.5%, respectively, compared to 10.0% and 18.2% in the control group (hazard ratio 14.8; $p < 0.001$). At the end of year 4, the cumulative success rate of IgE reduction to below the normal range was 41.1% in the case group and 3.4% in the control group (hazard ratio 6.71; $p = 0.033$). Regarding adverse events, the rates of abnormal white blood cell counts, hemoglobin, platelet counts, and alanine aminotransferase were not increased in the case group compared to the control group. **Conclusion:** Combination therapy with MTX and AZA was effective in treating patients with intractable AD by reducing their serum total IgE levels.

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