

A Case with Psoriasis Vulgaris Discontinued due to Anaphylactic Shock During Ixekizumab Treatment

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ABSTRACT

A 38-year-old Chinese woman had suffered from psoriasis vulgaris (PV) for more than one year and developed to the disease severity of PASI 12. She visited our hospital requesting treatment by biologics. Clinical examination before beginning treatment with biologics, showed no abnormalities except for slight increase in red blood cells and an indurated cutaneous reaction to tuberculin test, but no sign of clinical tuberculosis. The patient was commenced on treatment with ixekizumab (IXE) 160 mg in divided injections at two sites of the abdomen, but reddish urticarious reactions appeared at the injected sites. No such reactions were reappeared after the 2nd time injections. During 5 times injection the psoriatic eruption almost cleared to PASI 90% (PASI90). However, she had itchy urticarial rashes on her whole body after 7 times self-injection of IXE and she developed anaphylactic shock, although anti-histamine and hydrocortisone were

injected intravenously. Fortunately, she recovered from the shock after intramuscular injection of adrenalin. After this episode, we examined immunological tests including IgE cap to mouse, hamster and drug-lymphocyte stimulated test by IXE, but no abnormalities detected. In conclusion, we should be aware of the potential to develop anaphylaxis in a patient who develops urticarial reactions at the injection sites of biologics for PV treatment.

Key words: Anaphylactic shock; Biologics; IgE-cap; Ixekizumab; Psoriasis vulgaris

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INTRODUCTION

Recently, patients with psoriasis have been immunologically treated by biologics and good efficacy has been gained in safety^[1-2]. Ixekizumab (IXE), which is an anti-interleukin-17A monoclonal antibody, is also reported to effect for the clinical management of moderate-to severe psoriasis^[3-5]. However, we should carefully note risk of side effects such as easily acquired infections by microorganism^[4-6]. In addition, the biologics may contain a few amino acids from mouse and Chinese hamster ovary cells which are utilized in their production process, even though the agents are a recombinant humanized monoclonal antibody. IXE is composed of frame regions and constant regions derived from human IgG4^[6].

Here, we would like to report a patient with psoriasis vulgaris (PV) who developed anaphylactic shock after self-injection of IXE.

CASE REPORT

The patient was a 38-year-old Chinese woman who had suffered from PV more than one year. No other family members were involved with PV. In the past history, she experienced medically induced abortion.

She has been treated with a type of steroid ointment by a medical practitioner, but new lesions continued to appear. On 4 September, 2017, she visited to our hospital clinic requesting treatment by biologics. The clinically severity score of psoriasis seemed to be PASI 12 (Figure 1 A-C). She was examined clinically before the trial of treatment with biologics. She showed no abnormalities except for slight increasing of red blood cells ($530 \times 10^9/\mu\text{L}$, Hb: 15.6g/L, Ht: 46.3%) and a cutaneous indurated reaction to her tuberculin

test ($5 \times 5\text{mm}/17 \times 24\text{mm}$). However, no sign of tuberculosis was found. Then, treatment for the patient was started with IXE 160mg in divided injections at two sites of her abdomen, but within 20min after injections, reddish urticarious reactions appeared at the injected sites (Figure 1D). The lesions were naturally disappeared in an hour and no such reactions were reappeared after the 2nd time injections. During 5 times injection psoriatic eruption almost disappeared and reached to the result of *PASI90* (Figure 2A, B). Any



Figure 1 Clinical manifestations, psoriatic eruption exhibiting severity PASI 12. (a) abdomen; (b) back; (c) right arm, psoriatic patches scattered; (d) Within 20 min after self-injection of IXE, reddish urticarious erythema appeared.

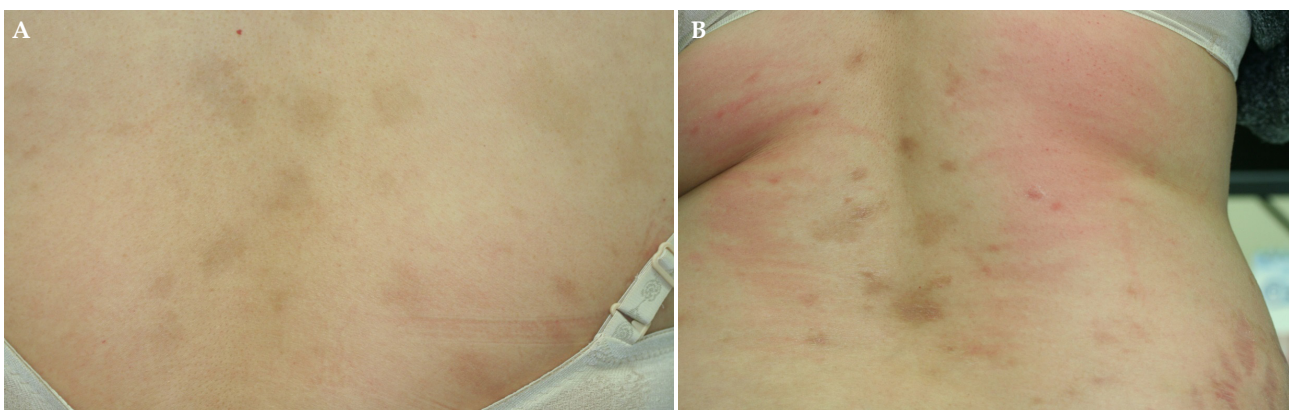


Figure 2 After 5 times self-injection, psoriatic eruption completely disappeared and it seemed to reach PASI 90%. (A) abdomen, (B) back.

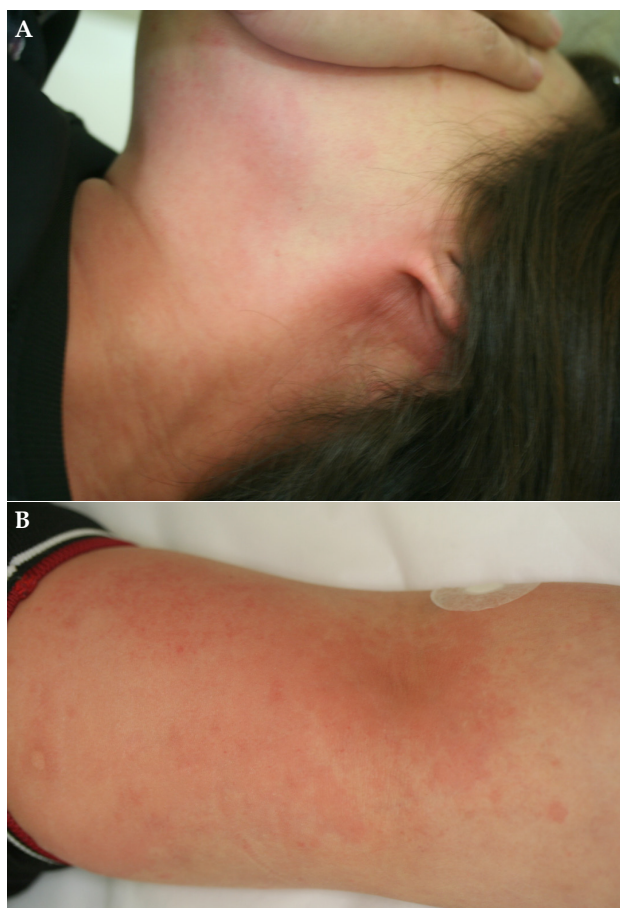


Figure 3 Before anaphylactic shock, the patient had urticarious erythema within 20 min after 7 times self-injection of IXE 160 mg. (A), urticarious erythema of the l-neck and cheek, (B) r-upper arm.

disadvantages were not complained during these times. However, she developed itchy urticarious rushes on her whole body after 7 times self-injection of the biologic and visited us immediately in the afternoon of 8th February, 2018 (Figure 3E, F). Anti-histamine agent (Chlorpheniramine Maleate 5mg/mL) and 10mg of hydrocortisone were given intravenously for the widespread urticaria, but before long she developed anaphylactic shock with low blood pressure. An absent pulse was noted at the moment, but fortunately she recovered from the shock after intramuscular injection of 0.3 mg/1ml of adrenalin and application of an oxygen mask. She was admitted to ICU room for a day as a precautionary measure.

DISCUSSION

After the episode, we have commenced to investigate about her risk factors to anaphylactic shock, as reported before⁷⁾. Anaphylactic shock due to the biologics is not reported before as a side effect except for some infections¹⁻⁷⁾. However, it may be possibility of allergic episodes was detected later in the patient's history and investigations. Eosinophils in white blood cells were noted to be relatively increased after the episode, although serum IgE level was rather low (less than 170 IU/mL). The analysis of IgE cap by ELISA system revealed absence of antibodies to mouse, hamster and guinea pig but reactions

to house dusts and Japanese cedars were positive and the patient had hay-fever in the season. High levels of serum histamine and triptase were not found, although it is reported to be found in mastocytosis which is one of the risk predictors for anaphylaxis¹⁸⁾. We were refused to do a prick test with IXE for her fear. Regarding the immediate immune reactions, no abnormal reactions were found and drug-lymphocyte-stimulation test to IXE was also reported to be negative (SRL Co., Tokyo, Japan).

The only predicting signs may be is to find erythematous reactions at the initial injection sites of the biologics. Then, it may be danger sign if self-management of the patient is continued.

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