

THERAPEUTIC HOTLINE

Aspirin desensitization as a treatment for aspirin-sensitive chronic spontaneous urticaria

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Introduction

Recurrent itchy hives or wheals on the skin lasting longer than 6 weeks are referred to as chronic spontaneous urticaria (CSU) (1). In some CSU, symptoms are induced or exacerbated by aspirin or other nonsteroidal anti-inflammatory drugs (NSAIDs), which is often more recalcitrant than aspirin-tolerant CSU (2).

In aspirin-exacerbated respiratory diseases (AERD), its safety and efficacy are strongly evidenced (3,4). In contrast, in aspirin-sensitive CSU, it is controversial and has been rarely attempted, despite its possibilities as a safe and effective treatment option (5,6).

Case report

A 16-year-old girl was admitted for itchy hives over her whole body. She had periodically suffered from hives for 4 years. She reported that her symptoms had started 4 years previously after taking ibuprofen for influenza. At the beginning, she tolerated her condition without treatment despite recurrent hives. Recently, her daily life had become disrupted

by the aggravated condition, and she frequently visited emergency rooms or clinics. She had had good responses to treatment with systemic corticosteroids at other clinics, which she was reluctant to. Her hives were hardly controlled with antihistamines (Fig. 1).

Laboratory testing showed within the normal ranges except for anti-thyroglobulin antibody (554.9 IU/mL) and total immunoglobulin E (>100 IU/mL). She was sensitized to house dust mites and molds.

To confirm aspirin hypersensitivity and desensitization at the same time, an aspirin provocation/desensitization procedure was performed (Table 1). Aspirin desensitization was successful in that she had no hives for the first week after discharge so that only 500 mg of aspirin daily was maintained. She experienced several itchy hives for 10 weeks, resolved with a single dose of antihistamine, so that daily dose was reduced to 300 mg. For the next 14 weeks, she had eight episodes of hives, mostly self-limiting. She was asked to discontinue her aspirin maintenance. She periodically experienced self-limiting itchy hives after discontinuation (Fig. 1).

Discussion

Although CSU is a common disease, the disease itself is not clearly understood. In terms of prognosis, CSU combined with thyroid autoantibody and

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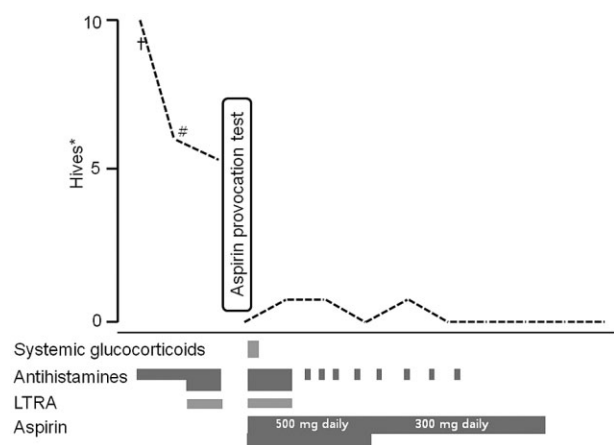


FIG. 1. A chronological scheme of the treatment of the patient's chronic spontaneous urticaria. *Patient's subjective estimation of hives in number and intensity; LTRA, leukotriene receptor antagonist. †Bepotastine 10 mg bid, cimetidine 200 mg tid, and hydroxyzine 10 mg hs; #Bepotastine 20 mg bid, cimetidine 200 mg tid, pranlukast 112.5 mg bid, and hydroxyzine 10 mg hs.

Table 1. Aspirin provocation/desensitization procedure

Baseline	Test doses	Objective findings Vital signs, PEFR, hives*
Negative control	0.9% saline 5 mL, i.v.	
First challenge	Aspirin 9 mg, i.v.	
Second challenge	Aspirin 18 mg, i.v.	
Third challenge	Aspirin 36 mg, i.v.	
Fourth challenge	Aspirin 90 mg, i.v.	**
Fifth challenge	Aspirin 180 mg, i.v.	
Sixth challenge	Aspirin 360 mg, i.v.	
Seventh challenge	Aspirin 500 mg, p.o.	

Lysine aspirin was used in i.v. challenge.

*Checked in every 10 and 30 minutes after each test dose, whereas either >20% change in blood pressure, PEFR from the baseline, or exacerbation of itching, hives, or nasal stuffiness was defined as a positive reaction.

**Shortness of breath and itching was reported 5 minutes after challenge. Hives over her whole body and 440 L/min (baseline 590 L/min) PEFR were documented as positive findings.

PEFR, peak expiratory flow rate.

aspirin sensitivity, as in this case, is usually longer lasting, more antihistamine resistant, and requires more systemic steroids than in other circumstances (2,7,8). More than half of CSUs are refractory to multiplied doses of antihistamines. Cyclosporine or omalizumab might be the effective and safe alternatives (9,10).

Although started with NSAIDs as she reported, her hives had never been exacerbated with

drugs for complete avoidance. Her CSU was confirmed in aspirin-sensitive CSU while in aspirin provocation/desensitization procedure.

Despite same pathogenic background with ARED, aspirin desensitization has hardly been applied to aspirin-sensitive CSU, because of concerns about the gastrointestinal complications and the perceived lower success rates than in AERD. However, once successfully desensitized, benefits in addition to disease control of CSU can be expected including no necessity to avoid aspirin or NSAIDs (6).

The safety and efficacy of aspirin desensitization was assessed in 11 patients with a history of aspirin- or NSAID-induced urticaria or angioedema (5). The successful rate for desensitization was 82%, and it was well tolerated and maintained for up to 2 years without episodes of exacerbation (5). Two successful cases were reported in aspirin-sensitive, antihistamine-resistant CSU, maintained for 6 months. In one case, complete remission was noted after 6 months' aspirin maintenance, without recurrence of CSU for 20 months afterward (6).

In most reported successful cases, there was no need to cease taking aspirin, because of the need for antithrombotic therapy. In this case, complete remission after 5 months of maintenance was recognized and medically observed without aspirin maintenance. Therefore, low-dose aspirin maintenance is proposed to have disease modulating effects in CSU.

We report a case of aspirin-sensitive CSU, successfully treated by aspirin desensitization.

Acknowledgements

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