Methazolamide-induced toxic epidermal necrolysis in a Chinese woman with HLA-B5901

Sir,

A 56-year-old Chinese Han woman presented to us with a febrile illness and a rapid progressing of erythematous, maculopapular rash involving her entire body 14 days after taking methazolamide with topical timolol maleate for her secondary glaucoma. Clinical examination revealed swollen eyelids, moderate hyperemia, and purulent discharge in her eyes, hemorrhagic crusts over lips, various sizes of erythematous eruptions and vesicles around her face, trunk and extremities, and a temperature of 103.82°F. Nikolsky sign was positive. She disclosed allergies to sulfanilamide and extremities, and a temperature of 103.82°F. Nikolsky sign was positive. She disclosed allergies to sulfanilamide antibiotics.

The patient was diagnosed with toxic epidermal necrolysis (TEN) associated with methazolamide treatment. Intravenous methylprednisolone was administered, combining with fresh frozen plasma and immunoglobulin intravenously. During the therapy, her condition continued to progress [Fig. 1]. HLA-B5901 was detected positive in this patient. After about 2 weeks of hospitalization, skin eruptions of her upper trunk dried, and crust obviously while lesions of lower limbs still remained in serious condition [Fig. 2]. The dosage of intravenous methylprednisolone was then gradually tapered off. On the 25th day of hospitalization, the patient was discharged with erosions healed and epithelialized.

TEN is a rare but severe mucocutaneous reaction, primarily due to drug intake. The similar, but the mild condition is Stevens–Johnson syndrome (SJS). The most common drugs associated with SJS/TEN are antibiotics such as sulfonamides, nonsteroidal anti-inflammatory drugs, and anticonvulsants.

Methazolamide is an inhibitor of carbonic anhydrase commonly used to treat glaucoma. Severe cutaneous reactions to methazolamide were rarely reported. The first report was published in Japanese literature in 1989[1] and since then 32 cases of SJS/TEN associated with methazolamide treatment have been reported.[2–4] A correlation between HLA-B59 and methazolamide-induced SJS/TEN was first suggested by Shirato in 1997.[5] Later in 2010, Kim et al. further noted that HLA-B5901, which is specific to the Japanese or Korean population is correlated strongly with methazolamide-induced SJS/TEN. B59 is an HLA-B serotype and has been observed mainly in Asians. Its frequency was estimated to be only 1.8% in Japanese and 2.1% in Koreans.[6]

References

1. Shetty SB, Bawtag MA, Biswas J. A case of subretinal tubercular abscess presenting as disc edema. Indian J Ophthalmol 2007;1:233‑46.
2. Shams PN, Plant GT. Optic neuritis: A review. Int MS J 2009;16:82‑9.
3. Behbehani R. Clinical approach to optic neuropathies. Clin Ophthalmol 2015;6:233‑46.
4. Off. Corresp. E‑mail: natavenu@yahoo.com
Immediate discontinuation of the causative agents and full dosage of corticosteroids at an early stage is the key principle in the management of SJS/TEN. Intravenous immunoglobulin has also been recommended in recent years. Recent researches stressed the need of intensive supportive care, aiming at satisfying the nutritional requirements, maintaining electrolyte balance, and preventing severe secondary infection. Plasmapheresis is considered to be a safe intervention to treat extremely ill TEN patients. Through plasmapheresis, circulating antigens, autoantibodies, immune complexes, and other toxic substances can be removed, leading to shorter periods and less severity of the disease.

This is the first report of methazolamide-induced TEN of a Chinese Han female with positive HLA-B5901 typing, which strongly suggests a possible relationship between HLA-B5901 and methazolamide-induced SJS/TEN. HLA-B5901 could be a useful marker to predict methazolamide-induced SJS/TEN in Chinese or Han people.

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Conflicts of interest
The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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References
1. Tanaka M. Methazolamide induced toxic epidermal necrolysis. Rhisho Derma 1989;43:327-30.
2. Flach AJ, Smith RE, Fraunfelder FT. Stevens-Johnson syndrome associated with methazolamide treatment reported in two Japanese-American women. Ophthalmology 1995;102:1677-80.
3. Shirato S, Kagaya F, Suzuki Y, Joukou S. Stevens-Johnson syndrome induced by methazolamide treatment. Arch Ophthalmol 1997;115:550-3.
4. Kim SH, Kim M, Lee KW, Kim SH, Kang HR, Park HW, et al. HLA-B*5901 is strongly associated with methazolamide-induced Stevens-Johnson syndrome/toxic epidermal necrolysis. Pharmacogenomics 2010;11:879-84.

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