Novel glycine substitution G2037R of COL7A1 in a Chinese boy with pretibial epidermolysis bullosa treated with oral olopatadine hydrochloride and topical Vitamin E

Sir,

Epidermolysis bullosa has been divided into distinct subtypes depending on the level of tissue separation in the dermal-epidermal basement membrane zone; mainly classified as epidermolysis bullosa simplex, junctional epidermolysis bullosa and dystrophic epidermolysis bullosa. The site-specific structural abnormalities are correlated to the genetic dysfunction of different genes, such as K5/K14 mutations in epidermolysis bullosa simplex, mutations of laminins in junctional epidermolysis bullosa and COL7A1 mutations in dystrophic epidermolysis bullosa. So far, only six mutations have been detected in pretibial dystrophic epidermolysis bullosa, according to the literature. We found a novel glycine substitution mutation (G2037R) in exon 73 in a sporadic pretibial dystrophic epidermolysis bullosa patient, whose symptoms were well controlled with a combination treatment regime of oral olopatadine hydrochloride and topical Vitamin E.

An 11-year-old Chinese boy presented to the dermatology clinic with multiple bullous lesions of approximately 0.5–1 cm size, on the abdomen and back; Nikolsky’s sign was positive. Several tense and clear blisters, scars and small erosions were also found on the skin around the ankle, knee, hip, elbow and finger joints. Some nails were fragile, disfigured and some were absent. His teeth were irregularly arranged, defective or absent. Biopsy from a flat papule on the left shin revealed epidermal hyperkeratosis, keratin cysts, irregular acanthosis, hyperplasia and subepidermal cleft formation containing a mild-to-moderate perivascular and interstitial eosinophilic, neutrophil and lymphocytic infiltrate within the proliferative collagen fibers in the papillary dermis.

After starting treatment with oral olopatadine hydrochloride and topical Vitamin E, the pruritus was well controlled, as evidenced by reduced excoriations at the lesional sites. After 2 weeks of treatment, new blisters no longer appeared and the older lesions showed signs of healing. In addition, the nails became clearer and the skin became more smooth and elastic.

Genetic studies were performed on the patient and a heterozygous missense mutation was identified in the proband by directly sequencing the polymerase chain reaction products, designated as c.6109 G-A or p.G2037R in exon 73 of COL7A1 gene. His parents carried an unaffected homozygous allele. The mutation G2037R was not found in his parents and 100 unrelated, unaffected control individuals. This mutation is predicted to be “probably damaging” with a score of 1.000 by polymorphism phenotyping-2 (http://genetics.bwh.harvard.edu/pph2/). A three-dimensional molecular modeling of the mutant COL7A1 protein was predicted by a web-based software I-TASSER (University of Kansas, Lawrence, Kansas, USA).

Herein, we studied a Chinese case with pretibial dystrophic epidermolysis bullosa, where the proband was found to have a heterozygous glycine substitution p.Gly2037Arg. We also found that the combination of olopatadine hydrochloride and topical Vitamin E was effective in reducing the itch and helped in achieving disease control.
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Conflicts of interest
There are no conflicts of interest.

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Sir,

Neurofibromatoses are a group of hereditary disorders, characterized by an autosomal dominant pattern of inheritance. The most common variant is neurofibromatosis type 1 (90%), which affects one in every 3500 individuals. Neurofibroma is the cutaneous hallmark of neurofibromatosis type 1. This tumor is often accompanied by café-au-lait macules, axillary freckling, Lisch nodules of the iris and bone lesions and these patients are predisposed to develop malignancies. Neurofibromatosis type 1 is caused by mutation of the \( NF1 \) gene which is located on chromosome 17q11.2 and contains sixty exons; it also spans more than 300 kb of genomic deoxyribonucleic acid.

Two patients in one pedigree were clinically diagnosed with neurofibromatosis type 1 at Xuanwu Hospital, Capital Medical University, China. The proband was a 17-year-old boy born with four large café-au-lait macules on his waist and buttocks. He gradually developed other café-au-lait macules on his trunk which increased in size from 1 cm × 2 cm to 23 cm × 14 cm. At the age of 10, a tender mass was found on the dorsum of his left foot. This

![Figure 1](https://example.com/figure1.png)

Figure 1: Neurofibroma seen on the dorsum of the left foot in the proband

![Figure 2](https://example.com/figure2.png)

Figure 2: Multiple café-au-lait macules and neurofibromas on the mother's back

A novel frameshift mutation of the \( NF1 \) gene in a Chinese pedigree with neurofibromatosis type 1

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