CORRESPONDENCE

Type II hereditary angioedema: The first case report in Taiwan

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Hereditary angioedema (HAE) due to C1 inhibitor deficiency (C1-INH) is a rare complement immunodeficiency disease. It is an autosomal dominant condition with an estimated prevalence of approximately 1:50,000 to 100,000 in Western countries\textsuperscript{1} and 1: 1,000,000 in Taiwan.\textsuperscript{2}

HAE can be categorized into three different types. Type I HAE results from low antigenic and functional levels of C1-INH. Type II HAE is associated with a normal C1-INH protein level but impaired function.\textsuperscript{3} Type III HAE has been described in women only and presents normal C1-INH levels and function. In Taiwan, all of the reported cases were type I HAE. In this report, we describe the first case of type II HAE in Taiwan.

A 37-year-old man visited Mackay Memorial Hospital, Taipei, because of recurrent abdominal pain with syncope for 2 months. He suffered from spontaneous lip, limbs, and perineum eruption with nonpitting edema since 2009, but there was no identified trigger. The skin lesion onset was about three to five times a year and the usual duration was 3–4 days, after which the symptoms resolved spontaneously. Severe abdominal pain with syncope occurred in July 2014. Physical examination showed periumbilical tenderness with muscle guarding noted but no rebounding pain. Abdominal computed tomography showed edematous of the duodenum and proximal jejunum with ascites (Figure 1A and 1B). Laboratory data showed that white blood cells, neutrophil, lymphocyte, eosin, monocytes, basophils, hemoglobin, glucose, alkaline phosphatase, aspartate aminotransferase (glutamic oxaloacetic transaminase), alanine aminotransferase (glutamic-pyruvic transaminase), uric acid, creatinine, potassium, sodium, and erythrocyte sedimentation rate were in normal range. Immunologic tests showed anti-nuclear antibody 80\textsuperscript{+} positive speckle pattern, C3: 88 mg/dL, and markedly decreased C4: 5 mg/dL. Other tests of anti-double stranded-DNA, anti-extractable nuclear antigen (SSA), anti-extractable nuclear antigen (SSB), anti-mitochondrial antibody, anti-smith antibody, and rheumatoid factor were negative. According to the above description, HAE was highly suspected. We further arranged a study of the patient’s C1-INH levels and C1-INH gene. He had elevated C1-INH level of 68.3 mg/dL (N: 15–35) and a C1-INH gene mutation: c.1396C>T, p.R466C in the eighth exon of the C1-INH gene compatible to type II HAE.\textsuperscript{4} His family pedigree showed he is the first case of type II HAE in Taiwan.

He received long-term prophylaxis treatment with danazol 200 mg daily.

HAE is characterized by nonpitting, nonpruritic tissue swelling which very rarely is accompanied by hives, as well as gastrointestinal and respiratory system involvement. More than 90% of patients with a diagnosis of HAE will have recurrent abdominal attacks as varying degrees of gastrointestinal colic, nausea, vomiting, and diarrhea, and can be an under-recognized presentation. These symptoms result from bowel wall edema. Computed tomography is
the most common imaging modality used to diagnose abdominal HAE and typically demonstrates thickened bowel wall and ascites without other anomalies.\(^5\)

Type I HAE is a very rare disease in Taiwan (1:1,000,000) and type II HAE is even rarer. We found only one family confirmed with a gene study. The reason for the lower prevalence of HAE may be due to ethnic factors or under-diagnosis. Many patients had a delayed diagnosis and died by laryngeal edema. The physicians in Taiwan must understand this disease to increase the diagnosis rate and decrease mortality.

References