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LETTERS TO THE EDITOR

Penicillamine and auto-immunity: Relationship or coincidence?

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Abstract

Drug induced lupus is an established and recognised entity, and penicillamine is one of the drugs that induce it. But the uncertainty remains: Could penicillamine trigger autoimmunity in a broad-spectrum or in a particular way?

Key words: Penicillamine; Auto-immunity; Drug induced lupus

Core tip: Penicillamine and auto-immunity: Relationship or coincidence?

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TO THE EDITOR

Due to its metal chelation properties D-penicillamine is widely used for the treatment of some human diseases, such as Wilson's disease. However, many adverse reactions have been repeatedly reported to its use and it has been frequently described as an autoimmunity inducer, including drug-induced lupus (DI-L)[1]. There is evidence that penicillamine binds to aldehydes on the surface of macrophages and this leads to their activation, which in some patients can lead to an autoimmune syndrome[2]. Also, studies suggest that Th17 cells are involved in the pathogenesis of this penicillamine-induced auto-immunity[3]. We can inquire about the mechanism of this interaction: Whether we face a drug reaction that results in a specific autoimmune-like disease; or instead this drug plays its role prompting autoimmunity in an unspecific way.

The authors present two cases that highlight this doubt.

Case 1, a 20-year-old woman was treated with

D-penicillamine for Wilson's disease for seven years. She developed complaints of symmetrical joint pain, constitutional symptoms and alopecia. The blood test revealed anemia (7.1 g/dL), leucopenia (2900/μL), speckled antinuclear antibody 1/1280, positive antihistone antibodies, anti-dsDNA and anti-Smith. It was assumed as DI-L and she stopped D-penicillamine. Nevertheless the disease progressed in the next six years with sustained arthritis, purpura, Raynaud's phenomenon and renal involvement: proteinuria 4.5 g per 24 h plus red blood cells, increasing serum creatinine, and complement consumption. The renal biopsy performed 6 years after suspension of D-penicillamine established the diagnosis class Ⅲ lupus nephritis (ISN/RPS). Even though drug induced lupus erythematosus has some features in common with systemic lupus erythematosus (SLE), they are distinct entities. In this case, the clinical course led us to the diagnosis of *de novo* SLE. To our knowledge there is only one previous case report that shows a similar description[4].

Case 2, a 39-year-old woman who at the age of fourteen had a diagnosis of Wilson's disease. After 18 years of treatment with D-penicillamine she started a polyarticular disease with a gradual onset and migratory joint involvement, specially metacarpophalangeal and proximal interphalangeal joints, as well as wrists and ankles. The immunological study showed high positive rheumatoide factor and anti-citrullinated protein antibodies. Also in this case, in spite of the withdrawal of D-penicillamine therapy there was progression of the clinical features. To our knowledge there is no other report in clinical literature that connects seropositive rheumatoid arthritis and Wilson's disease with penicillamine-induced disease.

DI-L is an established and recognised entity, and penicillamine is one of the drugs that induce it. But the uncertainty remains: Could penicillamine trigger autoimmunity in a broad-spectrum or in a particular way?

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