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【 EDITORIAL 】

# Elevation of Plasmin-α2-plasmin Inhibitor Complexes in Patients with AL Amyloidosis

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Ishiguro et al. reported that plasmin-α2-plasmin inhibitor complexes (PICs) are more elevated in patients with amyloid light-chain (AL) amyloidosis than in those with multiple myeloma (1). They posited that the elevation in PIC levels facilitates the diagnosis of systemic AL amyloidosis, with 84.6% sensitivity and 80.8% specificity. Other markers of fibrinolysis, such as fibrinogen degradation product (FDP) and D-dimers, were no higher in patients with AL amyloidosis than in patients with multiple myeloma. Only PIC levels were significantly higher; however, the underlying mechanisms is not well understood (2-7). Furthermore, Ishiguro et al. reported that serum PIC levels after complete response were significantly decreased compared to before treatment and posited that PIC levels are associated with hematological responses.

The present study of elevation in PIC levels is very interesting. Recently, the number of studies on AL amyloidosis has been increasing. At the annual meeting of the American Society of Hematology held in December 2016, there were many interesting reports, including a randomized phase III trial of bortezomib, melphalan, and dexamethasone therapy for untreated patients with AL amyloidosis (8). Regarding fibrinolytic biomarkers, Suga et al. reported recently that PICs, fibrinogen, and thrombin-antithrombin (TAT) complexes were elevated in patients with AL amyloidosis (9). New insights into AL amyloidosis are being made every year.

In our institute, we generally check the PIC, TAT complexes, and other marker levels. PICs and TAT complexes are often elevated in patients with AL amyloidosis. However, we did not initially believe that these markers were specific to AL amyloidosis. Ishiguro et al. reported the utility of PIC, and this new knowledge has proven to be very interesting

Although the PIC levels appear to be useful in the diagnosis of AL amyloidosis, biopsy-proven amyloid derived from monoclonal light chains is mandatory for the diagnosis of AL amyloidosis (10). The diagnostic criteria for AL amyloidosis include all of the following: [1] the presence of an amyloid-related systemic syndrome (such as renal, liver, heart, gastrointestinal tract, or peripheral nerve involvement); [2] positive amyloid staining by Congo red in any tissue (e. g. fat aspirate, bone marrow, or an organ biopsy); [3] evidence that amyloid is light chain-related, as established by the direct examination of the amyloid (immunohistochemical staining, direct sequencing, etc.); and [4] evidence of a monoclonal plasma cell proliferative disorder (serum or urine M protein, abnormal free light chain ratio, or clonal plasma cells in the bone marrow) (11, 12). Accordingly, the assessment of the PIC levels cannot be substituted for the current diagnostic criteria at present. However, this may change in the future.

**The authors state that they have no Conflict of Interest (COI).**

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