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POSTER

Concentration and κ/λ ratio of serum free light chain in multiple myeloma patients at Cho Ray Hospital

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Abstract

Introduction: multiple myeloma (MM) is a B cell malignancy which characterized by accumulation of plasmocyte in bone marrow, immunoglobulins and free light chain in serum (sFLC). According to IMMWG (International multiple myeloma working group), sFLC is a criterion in diagnosis of MM. In this study, we investigate the concentration and κ/λ ratio of sFLC in newly diagnosed MM patients at Cho Ray hospital.

Methods: cross-sectional study. Serum samples of 36 newly diagnosed MM patients were analyzed by Binding Site Freelite method to measure the amount of κ and λ sFLC.

Results: the median age of 36 MM patients was 61 yrs (41 – 88 yrs), with the male/female ratio was 1.2/1. MM stage III, stage II and stage I accounting for 63.9% (23/36), 27.8% (10/36), and 8.3% (3/36), respectively. Clonal IgG, IgA and IgE MM accounting for 61.1% (22/36), 30.6% (11/36), and 8.3% (3/36), respectively. We reported the median of plasmocyte in 36 cases was 35.4% (95%CI: 27.6 – 43.3). The median of concentration of κ sFLC, λ sFLC, and involved/uninvolved sFLC ratio were 1601.8 mg/L (95%CI: 104.9 – 3098.7), 900.1 mg/L (95%CI: 10.7 – 1789.5), and 191.0 (95%CI: 87.6 – 294.4), respectively. The abnormally high in sFLC concentration was reported in 97.2% MM cases (35/36), in which 55.6% cases (20/36) had increased κ sFLC, 19.4% cases (7/36) had increased λ sFLC, and 22.2% cases (8/36) had increased both κ+λ sFLC concentration. Increased involved/uninvolved sFLC ratio was found in 94.4% MM cases (34/36), in which 36.1% cases (13/36) had sFLC ratio > 100, with all involved sFLC concentration > 100 mg/L. In 3 cases of MM with kidney failure, 2 cases had increased both κ+λ sFLC, 1 case had increased κ sFLC concentration; and all of 3 cases had involved sFLC level > 5300 mg/L with sFLC ratio > 100. No significant difference of sFLC concentration and sFLC ratio among gender, stage of disease, Ig clone, or plasmocyte percent in bone marrow of MM patients.

Conclusions: due to the abnormally high of sFLC concentration and sFLC ratio in MM, it is necessary to monitor frequently these parameters during treatment to prevent the risk of kidney failure for patients.

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