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The relationship between immunoparesis and other biological parameters in MGUS

Khaoula Attia

Pasteur Institute, Algeria

Monoclonal gammopathy of undetermined significance (MGUS) is an asymptomatic, potentially premalignant condition, its prevalence increases with age it is associated with a 1% / year risk of progression to Multiple Myeloma (MM). Immunoparesis measured by Heavy Light Chain (HLC) suppression is related to other malignancy indicators and is considered by some as a new indicator that predicts progression to malignant disease. The aim of this research is to study Immunoparesis (uninvolved polyclonal immunoglobulin levels below the lower limit of normal) which is detected by suppression of the isotype-specific HLC using Hevylite assay. We also want to compare polyclonal immunoglobulin levels with other progression indicators in order to verify the degree of immunoparesis and whether it correlates with them or not. 20 patients diagnosed with MGUS aged from 43 to 81 (11F/9M) were referred to Pasteur Institute, Algiers from July to November 2017, the characteristics of this groups was already described, their immunoglobulin levels were measured by immunoturbidimetry using Hevylite reagents. Total immunoglobulin concentrations as well as HLC levels were tested for each sample. Mean age of the whole group is 74; 9 of them (45%) had IgG kappa, 3 had IgG lambda, others had other iso-types one for each. 10 patients (50%) had a disorder in HLC ratio. Only 4 patients (20%) had a suppression of the uninvolved heavy/light chain (e.g., a patient with IgG kappa had a suppression of IgG lambda levels), 8 (40%) had uninvolved polyclonal immunoglobulin suppression: 2 suppressions for those with M-spike level <10, 2 between 10 and 20, 4 for those with M-spike higher than 20 and less than 30. Only one patient (5%) had a Bence Jones Protein (BJP) with the highest level of M-spike, suppression of all uninvolved immunoglobulins and a disorder in HLC ratio. This study showed that abnormal HLC ratios and HLC pair suppression were both notably associated with other disorders such as monoclonal protein size, type and presence of BJP. This parameter needs to be largely studied to investigate its impact on the progression of MGUS to MM. It may be a valuable tool in the risk stratification of the disease.

spacelover@live.fr