ORT.05 - High Proteasome Activity in Plasma of Patients with Hematologic Malignancy (Case of 145 Moroccan patients)

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Introduction: Present both in the cytoplasm and nucleus of all eukaryotic cells, the 20S proteasome can be detected in peripheral blood (serum or plasma) (Stoebner and al, 2005). The proteasome, proteolytic heart of "ubiquitin-proteasome pathway" has a very broad substrate spectrum, most play a role in: the cell cycle, DNA repair, apoptosis (p53 and Caspase) angiogenesis (VEGF), inflammation (NF-kB, IL6 ....) immune response (antigen presentation) (Adams, 2002).

Objective: This study focused on a study in a large cohort of patients with Moroccan Hematologic malignancies in order to follow the evolution of the 20S proteasome in serum and intracellular according to clinical status.

Methodology: Quantitative and functional analysis of the proteasome was conducted at the subcellular level and serum during a pathological phenomenon (hematologic malignancy) in 145 Moroccan patients (sex ratio: 1.10 / average age: 47.9 ± 15.3 years) with ELISA assay, and by following the fluorescence emitted after enzymatic digestion of specific peptides by the chymotrypsin-like activity.

Results: The evolutionary trend of subcellular proteasome is significantly linked to the rate of chymotrypsin-like activity, the entire population of 60 patients called back for a second blood test after three months of treatment reported a significant drop in the rate and the activity of the proteasome in serum and intracellular level.

Conclusion: The use of proteasome circulating assay as a biomarker of tumor and a tool that could be very satisfying to follow patients after remission to prevent a possible fall. So Intracellular dosage of proteasome reveals important because it allows estimating the predictive score of the risk of toxicity.

Keywords: Proteasome ; ELISA ; CTL-activity