SYMPOSIUM 2 - The present and future of minimal residual disease (MRD) assessment

MASS SPECTROMETRY FOR MRD ASSESSMENT IN MULTIPLE MYELOMA

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Minimal residual disease (MRD) status is an important prognostic marker in multiple myeloma and serves as an outcome measure in clinical trials. In addition, several trials are investigating the use of MRD-guided treatment decisions, like whether maintenance therapy could be discontinued in patients with sustained MRD negativity.
Currently, MRD testing for multiple myeloma is performed using either next-generation sequencing or multiparameter flow cytometry of bone marrow aspirates. Although these methods are highly sensitive with the ability to detect 1 myeloma cell out of 100,000 or 1,000,000, they are invasive, do not allow for detection of extramedullary disease and have the potential for false negatives due to the patchy nature of disease in the marrow.
Mass spectrometry methods that detect low levels of the monoclonal immunoglobulin in serum have the potential to serve as a less-invasive approach for MRD detection. These methods are 10-1000 times more sensitive than routine electrophoretic techniques and are currently being evaluated in the setting of clinical trials. This talk will review the different mass spectrometry methods, discuss our current understanding of their clinical utility, and how these methods may be incorporated into clinical testing in the future.