

Investigations to Evaluate for Clonal Plasma Cells

Bone marrow aspirate and biopsy (fine-needle aspiration of plasmacytoma if indicated)

- Histology
- Clonality by kappa/lambda immunostaining by flow cytometry or immunohistochemistry

Investigations to Evaluate Clonal Paraprotein

Serum protein electrophoresis and immunofixation

Quantitative serum immunoglobulin levels (IgG, IgA, and IgM)

24-h urine protein electrophoresis and immunofixation

Serum free light chain and ratio

Immunofixation for IgD or IgE in select cases

Investigation to Evaluate End-Organ Damage

Hemogram to assess for anemia

Chemistry panel for renal function and calcium

Skeletal survey to evaluate bone lesions

PET/CT or MRI if smoldering MM or solitary plasmacytoma with no other MDE or extramedullary disease

Investigation for Risk Stratification

β_2 -Microglobulin and serum albumin for ISS stage

Fluorescent in situ hybridization for hyperdiploidy, del17p, t(4;14); t(11;14), t(14;16), t(14;20), amp1q34, and del13 on bone marrow sample

LDH

Specialized Investigation in Selected Cases

Abdominal fat pad for amyloid

Serum viscosity if IgM component or high IgA levels or serum M component >7 g/dL

Myd88 and *CXCR4* mutation analysis if IgM component

Abbreviations: ISS, International Staging System; LDH, lactate dehydrogenase; MRI, magnetic resonance imaging; PET/CT, positron emission tomography/computed tomography.

A complete blood count with differential may reveal anemia. Erythrocyte sedimentation rate is elevated. Rare patients (~1%) may have plasma cell leukemia with >2000 plasma cells/ μ L. This may be seen in disproportionate frequency in IgD (12%) and IgE (25%)