Plasma Cell Dyscrasias

**BASELINE SCREENING**
- CBC plus differential
- Complete metabolic panel
- LDH

**INDICATIONS FOR TESTING**
Individual signs and symptoms suggestive of plasma cell dyscrasia

**ORDER**
- Serum protein electrophoresis (quantifies M protein)
- Serum immunofixation electrophoresis (characterizes M protein)
- Serum kappa and FLC ratio
- Urine protein electrophoresis, if primary amyloidosis is suspected

<table>
<thead>
<tr>
<th>IgM M protein</th>
<th>IgG, IgA, IgD, or IgE M protein</th>
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<tbody>
<tr>
<td>M protein &lt;3 g/dL</td>
<td>M protein &lt;3 g/dL AND OR</td>
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<tr>
<td>No organ/tissue damage</td>
<td>No end-organ impairment (see CRAB Features)</td>
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<tr>
<td>&lt;10% clonal bone marrow plasma cells</td>
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<tr>
<td>Waldenström macroglobulinemia</td>
<td>MGUS likely</td>
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</tbody>
</table>

**OTHER DIAGNOSES**

**Solitary Plasmacytoma**
- Single lesion on imaging confirmed by biopsy showing plasma cells
- No CRAB features
- Normal bone marrow biopsy
- Normal skeletal survey

**Primary Amyloidosis**
- Amyloid-related systemic syndrome attributed to a plasma cell proliferative disorder
- Positive amyloid staining by Congo red of any tissue
- Evidence that amyloid is light-chain related
- Evidence of monoclonal plasma cell proliferative disorder

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**Myeloma-Defining Events**
- Clonal bone marrow cells ≥60%
- Serum involved:uninvolved FLC ratio of ≥100
- >1 focal lesion on MRI ≥5 mm

**CRAB Features**
- Hypercalcemia: serum calcium >11 mg/dL
- Renal insufficiency: serum creatinine >2 mg/dL or creatinine clearance <40 mL/min
- Anemia: hemoglobin value <10 g/dL
- ≥1 osteolytic lesion on skeletal radiography, CT, or PET-CT

**Abbreviations**
- BM: Bone marrow
- CRAB: Calcium (elevated), renal failure, anemia, bone lesions
- CT: Computed tomography
- FLC: Free light chain
- LDH: Lactate dehydrogenase
- MGUS: Monoclonal gammopathy of undetermined significance
- MRI: Magnetic resonance imaging
- PET: Positron emission tomography

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