### Plasma Cell Dyscrasias

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

**ORDER**
Monoclonal Protein Study, Expanded Panel, Serum, which includes the following components:
- SPEP: quantifies M protein
- SIFE: characterizes M protein
- Serum kappa and FLC ratio

If primary amyloidosis is suspected, also order Monoclonal Protein Study, 24 hour, Urine (UPEP)

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

**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

**Abbreviations**
- BM: Bone marrow
- CRAB: Calcium (elevated), renal insufficiency, 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
- SIFE: Serum immunofixation electrophoresis
- SPEP: Serum protein electrophoresis
- UPEP: Urine protein electrophoresis

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

**CRAB Features**
- Elevated calcium: 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 lytic lesion on skeletal radiography, CT, or PET-CT

### IgM M protein
- M protein <3 g/dL
- No organ/tissue damage
- <10% clonal bone marrow plasma cells

**IgM MGUS**

**Waldenström macroglobulinemia**

### IgG, IgA, IgD, or IgE M protein
- M protein ≥3 g/dL
- OR
- Elevated FLC ratio
  - M protein <3 g/dL
  - AND
  - No end-organ impairment (see CRAB Features)

**ORDER**
Bone marrow biopsy
Imaging studies

**MGUS likely**

Repeat evaluation in 3-6 months

**Smoldering multiple myeloma (asymptomatic)**

**Active multiple myeloma (symptomatic)**

Treat and monitor for disease

**CONSIDER**
- SPEP, UPEP, SIFE, FLC ratio (Monoclonal Protein Study, Expanded Panel, Serum and Monoclonal Protein Study, 24 hour, Urine)
- Bone scan
- Multiple Myeloma Minimum Residual Disease by Flow Cytometry

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