

# Multiple Myeloma

## Overview

- WHAT:** neoplastic plasma cell disorder; clonal proliferation of
- malignant plasma cells in bone marrow
  - monoclonal protein in blood or urine
  - associated organ dysfunction

- WHO:** median age: 70yrs
- pt < 60yo, 10-yr survival ~ 30%

## Clinical Findings

Subacute → acute  
(ie: weight loss, generalized weakness) (ie: spinal cord compression from lytic lesion; renal failure.)

HyperCalcemia: uncommon

Renal Dysfunction: 20-40%

Anemia: 70%

Bony lesions: Lytic lesions, osteopenia, pathologic fracture [80%]

## Diagnostic Pathway

### Increased Clinical Suspicion for MM

(ie: CRABs, ↑ Total protein - Albumin gap > 4g/dl systemic signs/sx suggestive of malignancy)

↓  
Obtain further diagnostic workup

**SPEP w/ Immunofixation:** serum protein electrophoresis

- localized band/ peak present in 80% pt. with MM



serum immunofixation confirms  
Type: IgG (50%), IgA (20%)  
IgM (0.5%)  
Kappa or Lambda (16%)

**FLC** (free light chain) assay: measures kappa/Lambda light chains

normal K:L ratio: ~ 1

abnormal K:L ratio present in 90% pt.

**Peripheral smear:** Rouleaux formation (>50%)

Leukopenia (20%)  
Thrombocytopenia (5%)

### Supporting Data:

- CT/PET/MRI: concerning for bone and bone marrow focal lesions
  - ↳ skeletal survey if CT/MRI/PET contraindicated
  - ↳ Bone scan not as effective in detecting lesions
- Urinalysis: myeloma cast nephropathy

## Diagnostic Criteria:

- ① Clonal bone marrow plasma cells ≥10% or biopsy proven plasmacytoma **PLUS**
- ② presence of organ damage (ie: anemia, hypercalcemia, renal failure, bony lesions)

## Differential Diagnosis

• other plasma cell dyscrasias:

- ① MGUS: } **NO** end organ damage
- ② Smoldering myeloma: }

③ AL Amyloidosis and Light Chain deposition disease: < 20% bone marrow plasma cells, **NO** lytic lesions

④ Waldenstrom Macroglobulinemia: monoclonal IgM

• metastatic carcinoma to the bone

## Watch out for Myeloma-Related Emergencies

- ① spinal cord compression
- ② hypercalcemia
- ③ symptomatic hyperviscosity
- ④ light chain nephropathy

see separate script for more details!