Myeloma, also known as multiple myeloma, is a rare bone marrow cancer arising from the plasma cells. In Europe, there are around **50,000 new cases diagnosed each year**.

**SUSPECT MYELOMA?**

Myeloma signs and symptoms

If a patient presents with one or more of the following unexplained symptoms, consider testing for myeloma.

- Bone pain / back pain, usually presents as unexplained pain, generalised or localised
- Urine changes, such as foaming urine or passing excessive or very little urine
- Unintentional weight loss
- Breathlessness
- Spontaneous fractures, including osteoporotic vertebral fractures

There are four defining features of myeloma, known as **CRAB criteria**:

- **C** Elevated Calcium
- **R** Renal impairment / failure
- **A** Anaemia
- **B** Bone disease

**THINK MYELOMA!**

Myeloma tests and investigations

If you suspect a patient has myeloma, you should conduct the following tests and investigations:

1. **Full blood count and blood chemistry**
   - Full blood count: look for unexplained anaemia
   - Erythrocyte sedimentation rate (ESR): usually elevated
   - Urea and electrolytes (U&Es): to check for renal impairment
   - Serum creatinine

2. **Serum protein measurement**
   - Urine and serum protein electrophoresis: to check the presence of paraprotein
   - Serum free light chain assay (sFLC), if unavailable, urine
   - Urine tests (spot urine tests, 24-hour urine collection and Bence Jones protein test)
   - Serum immunoglobulins (IgG, IgA and IgM)

3. **Additional tests to consider**
   - Serum albumin
   - Beta-2 microglobulin
   - C-reactive protein
   - Calcium: to test for hypercalcaemia
   - Lactate dehydrogenase test (LDH)
   - Estimated Glomerular Filtration Rate (eGFR)

**REFERRAL AND FURTHER INVESTIGATIONS**

If initial tests and investigations suggest myeloma, or a patient has unresolved presenting symptoms, they should be referred to a haematology clinic and further investigations are required to confirm diagnosis:

- Bone marrow aspirate / biopsy
- X-Ray, skeletal survey
- Low dose whole-body CT
- Whole body MRI
- PET/CT

**RELATED DIAGNOSIS**

Monoclonal gammopathy of undetermined significance (MGUS)

- No treatment – monitor
- Progression to AL amyloidosis, myeloma or solitary plasmacytoma: 1% per year

Smouldering myeloma

- No treatment – monitor
- Progression to myeloma: 10% per year

**ADDITIONAL RESOURCES**


Adapted from the Myeloma UK Myeloma Diagnosis Pathway, with permission.