

Supportive Care of Multiple Myeloma Patients

A Case Study

Case Presentation

- Mrs. S is a 58-year-old female with fatigue and pain in the right leg and back; on initial laboratory analysis she is found to have anemia, hypercalcemia, and renal dysfunction
- Additional laboratory evaluations showed a diagnosis of multiple myeloma
 - Bone marrow biopsy with 20% plasma cells, kappa restricted
 - Cytogenetics: normal
 - FISH: positive for del(13)
 - Skeletal survey with compression fracture at T10 and a lytic lesion in the right femur
- CRAB analysis positive for: calcium elevation, renal insufficiency, anemia, bone disease

FISH=fluorescence in situ hybridization; CRAB=calcium, renal failure, anemia, bone lesions

Case Study: Laboratory Values

Lab/Normal Reference Range	Value
WBC 3.0–11.0 k/ μ L	6.3
Plt Ct 150–400 k/ μ L	95 (L)
Hgb 13.0–17.0 g/dL	8.1 (L)
Hct 39.0–51.0%	22.3 (L)
MCV 80–100 fL	93.2
RDW-CV 11.5–15.0%	12.7
Neut % 38.5–75.0%	56.0
Abs Neut 1.00–7.50 k/ μ L	3.53

Lab/Normal Reference Range	Value
BUN 8–25 mg/dL	62 (H)
Creatinine 0.7–1.4 mg/dL	2.2 (H)
Calcium 8.5–10.5 mg/dL	11.3 (H)
Albumin 3.5–5.0 g/dL	2.9 (L)
Alk Phos 40–150 U/L	187 (H)

(H)=high; (L)=low; WBC=white blood cell; Plt Ct=platelet count; Hgb=hemoglobin; Hct=hematocrit; MCV=mean corpuscular volume; RDW-CV=red cell distribution width-coefficient variation; Neut=neutrophils; Abs Neut=absolute neutrophils; BUN=blood urea nitrogen; Alk Phos=alkaline phosphatase

Case Study: Laboratory Values

SPEP: Lab/Normal Reference Range	Value
Alpha-1 0.11–0.22 g/dL	0.26
Alpha-2 Globulin 0.6–1 g/dL	0.83
Beta G 0.50–1.00 g/dL	0.74
Gamma Glob 0.60–1.35 g/dL	1.78
M-Spike (g/dL)	2.30 (H)

Lab/Normal Reference Range	Value
Serum IgG 717–1,411 mg/dL	2,400
Serum IgA 78–391 mg/dL	37
Serum IgM 53–334 mg/dL	32
Serum Kappa 534–1,267 mg/dL	2,600
Serum Lambda 253–653 mg/dL	< 30

SPEP=serum protein electrophoresis, Gamma Glob=gamma globulin; Ig=immunoglobulin

Supportive Care for Patients With Multiple Myeloma

- The initial supportive care measures to be addressed in this patient are:
 - Hypercalcemia
 - Aggressive hydration, furosemide, bisphosphonates, steroids, and/or calcitonin¹
 - Renal dysfunction
 - Aggressive hydration, treat underlying multiple myeloma, avoid IV contrast and nonsteroidal anti-inflammatories^{1,2}
 - Bone disease
 - Bisphosphonates, kyphoplasty for vertebral compression, radiation¹

Mrs. S was initially treated with a bortezomib-based regimen

¹NCCN. Clinical practice guidelines in oncology: multiple myeloma. v.1.2013. ²Kastritis E, et al. *Expert Opin Pharmacother*. 2013;14:1477-1495.

Supportive Care for Peripheral Neuropathy

- After a few months of therapy, Mrs. S developed significant pain and numbness in her fingers and toes that limited activity and made walking difficult
- Peripheral neuropathy
 - Associated with bortezomib¹
 - Patient education, pharmaceutical and conservative measures²
 - Holding dose, reducing dose, changing treatment schedule or route of administration, or discontinuing bortezomib, depending on the severity of symptoms^{1,3,4}

Mrs. S was switched to a lenalidomide- and dexamethasone-based regimen for treating her multiple myeloma

¹Richardson PG, et al. *J Clin Oncol*. 2006;24:3113-3120. ²Tariman JD, et al. *Clin J Oncol Nursing*. 2008;12(3 Suppl):29-36. ³Brighen S, et al. *Blood*. 2010;116:4745-4753. ⁴Arnulf B, et al. *Haematologica*. 2012;97:1925-1928.

Supportive Care for Venous Thromboembolism

- Venous thromboembolism
 - Commonly associated with thalidomide or lenalidomide-based regimens¹
 - Increased risk factors include myeloma, high-dose dexamethasone, age, obesity, cardiovascular disease, chronic renal disease, acute infection, immobilization, surgery, central venous catheters, trauma, anesthesia, clotting disorders, or erythropoietin stimulating factors¹
 - Guidelines recommend aspirin for patients with up to 1 risk factor or low molecular weight heparin (LMWH) for 2 or more risk factors¹

Mrs. S has more than 2 risk factors and was started on LMWH

¹Palumbo R, et al. *Leukemia*. 2008;22:414-423.

Summary of Supportive Care for Patients With Multiple Myeloma

- Summary of common conditions requiring supportive care measures in patients with multiple myeloma
 - Hypercalcemia
 - Renal insufficiency
 - Bone disease
 - Peripheral neuropathy
 - Venous thromboembolism