Newly Diagnosed Multiple Myeloma

CASE #1: June*
CASE #2: Lisa*

*HIPAA-compliant; not actual patient names

Joseph D. Tariman, PhD, RN, ANP-BC, FAAN
Beth Faiman, PhD, RN, MSN, APRN-BC, AOCN®, FAAN

Objectives

- Identify common treatment regimens in newly diagnosed multiple myeloma
- Apply recommendations for infection control among an immunocompromised patient population
- Recognize the importance of survivorship care plans and apply practical tools for long-term management and care of patients with multiple myeloma
New Strategies for Multiple Myeloma Care: Case Studies for Nurses
Part 1: Newly Diagnosed Multiple Myeloma

**Myeloma Is a Cancer of Plasma Cells**

- Cancer of plasma cells
- Healthy plasma cells produce immunoglobulins: G, A, M, D, and E
- Myeloma cells produce abnormal immunoglobulin (paraprotein) continually

**Myeloma Cells Produce Myeloma Protein Continually: Detectable in Plasma and Urine**

- Myeloma cells produce abnormal immunoglobulins continually (nonsecretory disease is rare)
- Light chain
  - Kappa
  - Lambda
- Heavy chain
  - IgG
  - IgA
  - IgM
  - IgD
  - IgE

**Image:** American Society of Hematology

**Note:**
- MM = multiple myeloma.
- Understanding Your Test Results, International Myeloma Foundation 2018.
New Strategies for Multiple Myeloma Care: Case Studies for Nurses
Part 1: Newly Diagnosed Multiple Myeloma

CASE #1:

June*

- 76-year-old woman
- Anemia and elevated serum creatinine (1.2gm/dL) on routine annual exam
- Nephrology workup: monoclonal proteinuria, M spike (M-protein) detected
- Referred to heme/onc

How Myeloma Patients Commonly Present

**Routine Physical**
- Patient with few/no symptoms
- Abnormal blood work

**Visit for Specific Complaint**
- Persistent symptom or injury
- Abnormal test result (eg, x-ray)

**Emergency Room**
- Severe pain—often spinal fractures
- Renal failure

*HIPAA-compliant, stock photo (not actual patient).

heme/onc = hematologist/oncologist; HIPAA = Health Insurance Portability and Accountability Act; M-protein = monoclonal protein; M spike = monoclonal spike.

---

New Strategies for Multiple Myeloma Care: Case Studies for Nurses
Part 1: Newly Diagnosed Multiple Myeloma

**CASE #1:**

**June**

**DIFFERENTIAL DIAGNOSIS**

- ✓ Multiple myeloma
- ✓ Smoldering multiple myeloma
- ✓ Monoclonal gammopathies of undetermined significance (MGUS)
- ✓ Plasmacytoma
- ✓ Waldenström macroglobulinemia
- ✓ AL amyloidosis
- ✓ Plasma cell leukemia
- ✓ Malignant bone disease
- ✓ POEMS

**Myeloma Continuum, Testing, and Treatment**

<table>
<thead>
<tr>
<th>PREMALIGNANT</th>
<th>MALIGNANT</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>MGUS</strong></td>
<td><strong>Active MM</strong></td>
</tr>
<tr>
<td>Low-Risk MGUS</td>
<td></td>
</tr>
<tr>
<td>High-Risk MGUS</td>
<td></td>
</tr>
<tr>
<td>Low-Risk SMM</td>
<td></td>
</tr>
<tr>
<td>High-Risk SMM</td>
<td></td>
</tr>
</tbody>
</table>

**Spike on SPEP/UPEP**
- Bone Marrow <10% PC

**CRAB Criteria**
- Calcium Elevation
- Renal Dysfunction
- Anemia
- Bone Lesions

**MDEs**
- Bone Marrow ≥60% PC
- Freelite Ratio ≥100
- CCR <40 mL/min
- MRI ≥2 Lesions

**TREATING**

- **CLINICAL TRIAL**
- **TREAT**

**MONITOR**

AL = amyloid light chain; HIPAA = Health Insurance Portability and Accountability Act; POEMS = polyneuropathy, organomegaly, endocrinopathy/edema, monoclonal protein, skin changes.
Newly Recognized Phenomenon: MGRS (Monoclonal Gammopathy of Renal Significance)

- Do NOT meet criteria for myeloma
- Have a clone only detected in the kidney; treated much like myeloma
- Kidney biopsy (target organ bx) is gold standard for diagnosis

<table>
<thead>
<tr>
<th>MGRS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fibrillary GN</td>
</tr>
<tr>
<td>plasma cell clone?</td>
</tr>
<tr>
<td>No clear clone?</td>
</tr>
<tr>
<td>C3 GN and MGUS</td>
</tr>
<tr>
<td>plasma cell clone and lymphoplasmacytic lymphoma.</td>
</tr>
<tr>
<td>MPGN and MGUS</td>
</tr>
<tr>
<td>MIDD (30% without Myeloma)</td>
</tr>
</tbody>
</table>

AL = amyloid light chain; bx = biopsy; CLL = chronic lymphocytic leukemia; GN = glomerulonephritis; MGRS = monoclonal gammopathy of renal significance; MGUS = monoclonal gammopathy of undetermined significance; MIDD = monoclonal immunoglobulin deposition disease; MPGN = membranoproliferative glomerulonephritis; WM, Waldenström macroglobulinemia.


Diagnostic Workup for Multiple Myeloma

**LAB TESTS**
- Serum protein electrophoresis (SPEP)
- Urine protein electrophoresis (UPEP)
- CBC + differential + chemistry including albumin and β2 microglobulin and LDH
- FLC ratio of free kappa/lambda light chains (plasma)
- Monoclonal protein analysis (MPA)

**BONE MARROW BIOPSY**
- FISH
- Cytogenetics
- Clonal plasma cell percentage

**IMAGING (SEE NEXT SLIDE)**

FISH detects abnormalities in multiple myeloma cells by using fluorescent probes
New Strategies for Multiple Myeloma Care: Case Studies for Nurses
Part 1: Newly Diagnosed Multiple Myeloma

Recommended Imaging for Multiple Myeloma

CT = computed tomography; DEXA = dual-energy x-ray absorptiometry; MM = multiple myeloma; MRI = magnetic resonance imaging; PET = positron emission tomography; WB = whole body; WBLDCT = whole-body low-dose computed tomography.


Traditional skeletal survey with x-rays

OLD

WBLDCT

PET/CT

MRI

WB/spine + pelvis

Note: Bone scan (DEXA) for bone density, not for MM

NEW

Best for early screening for bone disease

Response assessment: active residual disease

Gold standard to assess bone marrow involvement

Recommended Imaging for Multiple Myeloma

Revised-ISS (R-ISS) Staging System for MM

CA = chromosomal abnormality; ISS = International Staging System; LDH = lactate dehydrogenase; OS = overall survival; PFS = progression-free survival; ULN = upper limit of normal.


<table>
<thead>
<tr>
<th>Stage</th>
<th>R-ISS</th>
<th>5-Year OS</th>
<th>5-Year PFS</th>
</tr>
</thead>
</table>
| I     | • ISS stage I (serum β₂ microglobulin level <3.5 and serum albumin ≥3.5 g/dL)  
• No high-risk CA [del(17p) and/or t(4;14) and/or t(14;16)]  
• Serum LDH < ULN (varied by institution)  
82%  
55% |
| II    | • Not R-ISS stage I or III  
62%  
36% |
| III   | • ISS stage III (serum β₂ microglobulin level >5.5 mg/L)  
• High-risk CA [del(17p) and/or t(14;4) and/or t(14;16)] or high serum LDH  
40%  
24% |
New Strategies for Multiple Myeloma Care: Case Studies for Nurses
Part 1: Newly Diagnosed Multiple Myeloma

**CASE #1:**

June*

**MYELOMA WORKUP**

- **Peripheral blood:**
  - Calcium: 10.2 mg/dL (ULN: 10.6 mg/dL)
  - Albumin: 3.3 mMol/L (LLN: 3.5 mMol/L)
  - B2M: 5.3 mg/dL (ULN: 2.64 mg/dL)
  - LDH: 150 U/mL (ULN: 250 U/mL)
  - Creatinine: 1.2 mg/dL (ULN: 1.3 mg/dL)
  - GFR (calculated): 24 mL/min/1.73 m²
  - Hgb: 10.8 g/dL
  - κFs: 1832.0 g/dL (normal range: 3.3-19.4 g/dL)
  - κ/λ-light-chain ratio: 122 (ULN: 1.65)
  - Urine M spike: 2.72 g/24 h

**WHOLESOME LOW-DOSE CT:**
- Lytic lesions; arms, ribs, skull, femur

B2M = beta-2 microglobulin; CT = computed tomography; GFR = glomerular filtration rate; Hgb = hemoglobin; HIPAA = Health Insurance Portability and Accountability Act; κ/λ = kappa to lambda; κFs = kappa free serum; LDH = lactate dehydrogenase; LLN = lower limit of normal; M spike = monoclonal spike; ULN = upper limit of normal.

**Nurse’s Role Is Crucial to Myeloma Patients**

- **INFORM PATIENTS**
  - Educate patients and caregivers
  - Disease, what to watch for, protecting health

- **EMPOWER PATIENTS**
  - Encourage questions from patients and caregivers
  - Encourage communication with medical team
  - Coach patient how to participate in decision-making

- **ADVOCATE FOR PATIENTS**
  - Identify services (eg, financial counseling, financial programs, support groups)
  - Speak up on behalf of the patient
  - Ensure medical team is aware of patient concerns/priorities

Getler L. Nursing. 2018;48(4):55-58
New Strategies for Multiple Myeloma Care: Case Studies for Nurses
Part 1: Newly Diagnosed Multiple Myeloma

Steep Learning Curve for Patients Newly Diagnosed With MM

- Patient education is crucial but can be overwhelming
- Shock of diagnosis makes understanding and retaining information difficult
  - Tell patients information, but also give written information they can read later
  - Refer patients to reliable sources of information

Relevant Education for Patients With Multiple Myeloma: COVID-19—Advise Precautions

**High risk for severe illness from COVID-19:**
- Aged ≥65 years
- Living in a nursing home

**Underlying medical conditions can increase COVID-19 risk:**
- Immunocompromised
- Chronic lung disease
- Severe obesity (BMI ≥40)
- Diabetes
- Chronic kidney disease undergoing dialysis
- Liver disease

**Reduce risk of COVID-19 Infection**
- Stay home when possible
- Wash hands often
- Maintain 6-foot social distance
- Avoid close contact with others, particularly those who are sick; telemedicine option
- Wear a cloth face cover when around others

**Have 2+ week supply of medications**
**Discuss any concerns with your HCP**
**Call 911 for emergency help**

**Clean and disinfect frequently touched surfaces**
**Avoid travel (cruises, airplanes)**
**Get flu and pneumococcal vaccination**

BMI = body mass index; CDC = Centers for Disease Control; COVID-19 = coronavirus 2019; HCP = health care provider.
New Strategies for Multiple Myeloma Care: Case Studies for Nurses
Part 1: Newly Diagnosed Multiple Myeloma

Additional, Important Education for Newly Diagnosed Patients

INFECTION PREVENTION
- Consider levofloxacin 500 mg once daily for 12 weeks
- Growth factor (eg, filgrastim)
- IVIG for hypogammaglobulinemia
- Immunizations (NO live vaccines)
- Pneumococcal vaccination (13 and 23)
- Seasonal inactivated influenza vaccine x2
- Shingles vaccine: zoster vaccine recombinant, adjuvanted

RENUAL HEALTH
Risks:
- Active MM (M-protein, casts)
- High calcium
Prevention:
- Avoid certain medications (contrast dyes, NSAIDS)
- Hydration
- Address underlying myeloma causing renal dysfunction
- Dose adjustments for renal

BONE HEALTH
- Hypercalcemia from bone destruction can affect kidneys
- 85% of patients with multiple myeloma develop bone disease
Monitor:
- New or worsening bone pain, serum calcium levels (especially denosumab)
Imaging:
- Depends on type of pain
Bone-modifying agents
- Pamidronate, zoledronic acid
- Denosumab

INFECTION PREVENTION
- Consider levofloxacin 500 mg once daily for 12 weeks
- Growth factor (eg, filgrastim)
- IVIG for hypogammaglobulinemia
- Immunizations (NO live vaccines)
- Pneumococcal vaccination (13 and 23)
- Seasonal inactivated influenza vaccine x2
- Shingles vaccine: zoster vaccine recombinant, adjuvanted

Expanding Treatment Options for Multiple Myeloma


1958 Melphalan

1962 Prednisone

1963 Autologous Stem Cell Transplantation

1966 High-Dose Dex

1986 Lenalidomide

2003 Bortezomib

2006 Thalidomide

2007 Dexamethasone

2010 Denosumab

2013 Pomalidomide

2015 Daratumumab

2015 Elotuzumab

2015 Panobinostat

2019 Selinexor

2020 Dara SC

2020 Isatuximab

Auto = autologous; Dara = daratumumab; Dtx = dexamethasone; HDAC = histone deacetylase; SC = subcutaneous.

**Myeloma Common Frontline Regimens**

**NEWLY DIAGNOSED MM**

**Common Regimens for Transplant Candidate**
- VRd*: bortezomib lenalidomide dex
- VCD: bortezomib cyclophosphamide dex
- KRd: carfilzomib lenalidomide dex
- IRd: ixazomib lenalidomide dex
- Dara-Rd: daratumumab lenalidomide dex
- Dara-Td: daratumumab thalidomide dex
- Dara-VRd: daratumumab bortezomib lenalidomide dex

**Common Regimens for Non-Transplant Candidate**
- VRd*: bortezomib lenalidomide dex
- Dara-Rd*: daratumumab lenalidomide dex
- Rd*: lenalidomide low-dose dex
- VCD: bortezomib cyclophosphamide dex
- KRd: carfilzomib lenalidomide dex
- Id: ixazomib dex
- Dara-VMP: daratumumab melphalan prednisone

**Maintenance**
- Lenalidomide*
- Ixazomib*
- Lenalidomide + proteasome inhibitors (for high risk)

---

**Patients Want to Know Whether Treatment Is Working: IMWG Myeloma Response Criteria**

**Flow MRD negative**

Negative by NGF (next-generation flow) (minimum sensitivity 1 in 10^5 nucleated cells or higher)

- sCR: mCR AND normal FLC ratio, BM negative by flow, 2 measures
- Molecular CR: CR AND negative PCR
- CR: Negative immunofixation; no more than 5% plasma cells in BM; 2 measures
- VGPR: 90% reduction in myeloma protein
- PR: At least 50% reduction in myeloma protein
- MR
- SD
- PD

---

**Abbreviations:**
- MM = multiple myeloma; NCCN = National Comprehensive Cancer Network
- *NCCN Category 1; †Clinical trial participation is recommended.

---

**IMWG Myeloma Response Criteria**

- IMWG minimal residual disease consensus criteria published August 2016.
New Strategies for Multiple Myeloma Care: Case Studies for Nurses
Part 1: Newly Diagnosed Multiple Myeloma

Getting to Minimal Residual Disease (MRD): New Definitions Deeper Than CR

Key concept: Deeper responses (less residual disease) generally means better patient outcomes

MANY ways to get to deeper responses:
• Multi-drug regimens
• ASCT
• Longer therapy duration (eg, continuous regimens or maintenance)

Frailty Score Can Predict Survival and Rate of Treatment Discontinuation

Online myeloma frailty score calculator at http://www.myelomafrailtyscorecalculator.net/

Fit = 0, intermediate = 1, frail = 3

Calculator takes into account age, comorbidity, and ability to manage daily activity
New Strategies for Multiple Myeloma Care: Case Studies for Nurses
Part 1: Newly Diagnosed Multiple Myeloma

RVd Lite Regimen: Reduced Intensity Regimen for Transplant-Ineligible Patients

**RVd Lite Phase 2 Study**
- Transplant ineligible: N=53
- Median age: 72 years (range, 65-91)
- Grade 3 toxicities:
  - 34% Hypophosphatemia
  - 24% Neutropenia
  - 10% Rash
- ORR: 86%
- PFS: 41.9
- 5-year OS: 61.3

Conclusions: well-tolerated and highly effective regimen for transplant-ineligible population

**Induction (cycles 1-9)**
Repeat q35 days ×9 cycles
- Lenalidomide 15 mg PO days 1-21
- Bortezomib 1.3 mg/m² SC days 1, 8, 15, 22
- Dexamethasone 20 mg PO days 1, 2, 7, 8, 15, 16, 22, 23 (patients aged ≤75 years)

**Consolidation (cycles 10-15)**
Repeat q35 days ×9 cycles
- Lenalidomide 15 mg PO days 1-21 (or last tolerated dose as of cycle 9)
- Bortezomib 1.3 mg/m² SC days 1, 15, 22 (or last tolerated dose as of cycle 9)

**Daratumumab-Based Regimens for Patients With MM Who Are Transplant Ineligible**

**MAIA Phase 3**

**ALCYONE Phase 3**

---

D = daratumumab; HR = hazard ratio; MM = multiple myeloma; PFS = progression-free survival; PO = by mouth; q = every; RVd = lenalidomide bortezomib dexamethasone; SC = subcutaneous.

New Strategies for Multiple Myeloma Care: Case Studies for Nurses
Part 1: Newly Diagnosed Multiple Myeloma

CASE #1:

June*

TREATMENT DECISION
• Continuous therapy: RVd lite

SURVIVORSHIP CARE PLAN
• Diagnosis and test results
• Treatment received
• Follow-up plan
• Coordination with PCP
• Long-term health maintenance

SURVIVORSHIP CARE PLAN

New Strategies for Multiple Myeloma Care: Case Studies for Nurses
Part 1: Newly Diagnosed Multiple Myeloma

CASE #2

Lisa*

Lisa is a 56-year-old woman with no significant comorbidities
  — FISH: del(17p)
  — Transplant eligible

Risk With Multiple Myeloma

STANDARD RISK

No abnormalities detected

OR

Abnormalities that are not defined as high risk

HIGH RISK

Identified by FISH
  • t(4;14)
  • t(14;16)
  • t(14;20)
  • del(17/17p)
  • gain(1q)*

Identified by karyotyping
  • nonhyperdiploid karyotype
  • del(13)

 Genetic analysis
  • Double hit (biallelic TP53 inactivation or amplification of CKS1B [1q21])

Other disease characteristics
  • Extramedullary disease
  • Plasma cell leukemia

KOC18 = Cyclin-dependent kinases regulatory subunit 1; FISH = fluorescence in situ hybridization; TP53 = tumor protein 53.
*Slightly risk according to Rajkumar SV, high risk according to Sonneveld P, et al.
New Strategies for Multiple Myeloma Care: Case Studies for Nurses
Part 1: Newly Diagnosed Multiple Myeloma

Myeloma Common Frontline Regimens

**NEUPLIC KEY DIAGNOSIS MM**

**COMMON REGIMENS FOR TRANSPLANT CANDIDATE**
- VRd*: bortezomib lenalidomide dex
- VCD: bortezomib cyclophosphamide dex
- KRd: carfilzomib lenalidomide dex
- IRd: ixazomib lenalidomide dex
- Dara-Rd: daratumumab lenalidomide dex
- Dara-Td: daratumumab thalidomide dex
- Dara-VRd: daratumumab bortezomib lenalidomide dex

**COMMON REGIMENS FOR NON TRANSPLANT CANDIDATE**
- VRd*: bortezomib lenalidomide dex
- Dara-Rd*: daratumumab lenalidomide dex
- Rd*: lenalidomide low-dose dex
- VCD: bortezomib cyclophosphamide dex
- KRd: carfilzomib lenalidomide dex
- Id: ixazomib dex
- Dara-VMP: daratumumab melphalan prednisone

**PRIMARY TREATMENT**
- Lenalidomide*
- Ixazomib*
- Lenalidomide + proteasome inhibitors (for high risk)

**MAINTENANCE**
- Lenalidomide*
- Ixazomib
- Lenalidomide + proteasome inhibitors (for high risk)

---

dex = dexamethasone; MM = multiple myeloma; NCCN = National Comprehensive Cancer Network.
*NCCN Category 1. †Clinical trial participation is recommended.


---

**GRiffin Phase 2 Clinical Trial: Dara-RVd Regimen in Transplant-Eligible Patients**

**Progression-Free Survival**

<table>
<thead>
<tr>
<th>Months</th>
<th>VRd</th>
<th>D-VRd</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>103</td>
<td>104</td>
</tr>
<tr>
<td>2</td>
<td>93</td>
<td>98</td>
</tr>
<tr>
<td>4</td>
<td>77</td>
<td>93</td>
</tr>
<tr>
<td>6</td>
<td>69</td>
<td>89</td>
</tr>
<tr>
<td>8</td>
<td>67</td>
<td>89</td>
</tr>
<tr>
<td>10</td>
<td>64</td>
<td>88</td>
</tr>
<tr>
<td>12</td>
<td>64</td>
<td>88</td>
</tr>
<tr>
<td>14</td>
<td>62</td>
<td>86</td>
</tr>
<tr>
<td>16</td>
<td>60</td>
<td>59</td>
</tr>
<tr>
<td>18</td>
<td>60</td>
<td>59</td>
</tr>
<tr>
<td>20</td>
<td>60</td>
<td>59</td>
</tr>
<tr>
<td>22</td>
<td>60</td>
<td>59</td>
</tr>
<tr>
<td>24</td>
<td>60</td>
<td>59</td>
</tr>
<tr>
<td>26</td>
<td>60</td>
<td>59</td>
</tr>
<tr>
<td>28</td>
<td>60</td>
<td>59</td>
</tr>
<tr>
<td>30</td>
<td>60</td>
<td>59</td>
</tr>
</tbody>
</table>

**Overall Survival**

<table>
<thead>
<tr>
<th>Months</th>
<th>VRd</th>
<th>D-VRd</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>103</td>
<td>104</td>
</tr>
<tr>
<td>2</td>
<td>101</td>
<td>100</td>
</tr>
<tr>
<td>4</td>
<td>99</td>
<td>99</td>
</tr>
<tr>
<td>6</td>
<td>99</td>
<td>99</td>
</tr>
<tr>
<td>8</td>
<td>96</td>
<td>97</td>
</tr>
<tr>
<td>10</td>
<td>96</td>
<td>97</td>
</tr>
<tr>
<td>12</td>
<td>96</td>
<td>97</td>
</tr>
<tr>
<td>14</td>
<td>96</td>
<td>97</td>
</tr>
<tr>
<td>16</td>
<td>96</td>
<td>97</td>
</tr>
<tr>
<td>18</td>
<td>96</td>
<td>97</td>
</tr>
<tr>
<td>20</td>
<td>96</td>
<td>97</td>
</tr>
<tr>
<td>22</td>
<td>96</td>
<td>97</td>
</tr>
<tr>
<td>24</td>
<td>96</td>
<td>97</td>
</tr>
<tr>
<td>26</td>
<td>96</td>
<td>97</td>
</tr>
<tr>
<td>28</td>
<td>96</td>
<td>97</td>
</tr>
<tr>
<td>30</td>
<td>96</td>
<td>97</td>
</tr>
</tbody>
</table>

Dara = daratumumab; D-VRd = daratumumab bortezomib lenalidomide dexamethasone; OS = overall survival; PFS = progression-free survival; VRd = bortezomib lenalidomide dexamethasone.

Meta-Analysis: Lenalidomide Maintenance After ASCT Demonstrates Improved PFS and OS

PFS and OS benefit observed across subgroups:
- Older or younger than 60 years
- Male or female
- ISS stage I/II or III
- Response after ASCT (prior to maintenance)
- Different induction regimens

NEW DATA at ASCO 2020

SStMINA clinical trial
- Benefit of len maintenance until progression post ASCT
- Double ASCT has benefit for patients with high-risk MM

SWOG1212 clinical trial
- Benefit to IMiD + PI maintenance for high-risk MM

NEW DATA at ASCO 2020

TOURMALINE-MM3 Phase 3 Clinical Trial: Ixazomib Maintenance After Transplant

R = hazard ratio; PFS = progression-free survival.
New Strategies for Multiple Myeloma Care: Case Studies for Nurses
Part 1: Newly Diagnosed Multiple Myeloma

FORTE: Carfilzomib Regimens in Transplant-Eligible Patients With Newly Diagnosed MM

**Design**
- 474 patients with newly diagnosed MM
- Randomized to KRd_ASCT_KRd or KRd12 or KCd_ASCT_KCd

**Results**
- 12 cycles of KRd vs KRd + ASCT: both were equally effective in producing deep responses – GOOD FOR HIGH RISK
- In R-ISS stage I disease, impressive MRD-negative rates of 69% and 62%

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(n=158)</td>
<td></td>
<td>(n=157)</td>
<td></td>
<td></td>
<td>(n=48)</td>
</tr>
<tr>
<td>sCR</td>
<td>44%</td>
<td>60%</td>
<td>46%</td>
<td>66%</td>
<td>69%</td>
<td>58%</td>
</tr>
<tr>
<td>≥CR</td>
<td>60%</td>
<td>61%</td>
<td>66%</td>
<td>64%</td>
<td>62%</td>
<td>54%</td>
</tr>
<tr>
<td>≥VGPR</td>
<td>89%</td>
<td>87%</td>
<td>92%</td>
<td>79%</td>
<td>79%</td>
<td>86%</td>
</tr>
<tr>
<td>MRD-negative</td>
<td>58%</td>
<td>54%</td>
<td>69%</td>
<td>62%</td>
<td>62%</td>
<td>51%</td>
</tr>
</tbody>
</table>

ENDURANCE phase 3: KRd did not improve PFS over VRd in patients with newly diagnosed MM without high-risk features

Relapsing Nature of MM With Clonal Evolution: Dominant Clones Change Over Time

- M-protein = monoclonal protein; MGUS = monoclonal gammopathy of undetermined significance; MM = multiple myeloma
New Strategies for Multiple Myeloma Care: Case Studies for Nurses  
Part 1: Newly Diagnosed Multiple Myeloma

However, With New Agents, Some Patients Achieve Deep Responses Even After Many Treatments

- **ASYMPTOMATIC**
  - MGUS or SMOLDERING MYELOMA
  - Therapy

- **SYMPTOMATIC**
  - ACTIVE MYELOMA
  - Therapy

- **REFRACTORY**
  - PLATEAU REMISSION
  - Therapy

### M-Protein g/L

- **2**
- **5**
- **10**

### Therapy

- **TREATMENT 1**
- **TREATMENT 2**
- **TREATMENT 3**
- **DOMINANT MM CLONE**
  - Clone 1.1
  - Clone 1.2
  - Clone 2.1
  - Clone 2.2
  - Misc

M-protein = monoclonal protein; MGUS = monoclonal gammopathy of undetermined significance; MM = multiple myeloma.


Resources to Enhance Your Ability to Care for Your Patients With MM: Download or Receive a USB Drive by Mail

...and Much, Much More

Instructions for accessing these resources are provided in the post-course evaluation.