

MULTIPLE MYELOMA TREATMENT REGIMENS (Part 1 of 9)

Clinical Trials: The NCCN recommends cancer patient participation in clinical trials as the gold standard for treatment.

Cancer therapy selection, dosing, administration, and the management of related adverse events can be a complex process that should be handled by an experienced healthcare team. Clinicians must choose and verify treatment options based on the individual patient; drug dose modifications and supportive care interventions should be administered accordingly. The cancer treatment regimens below may include both U.S. Food and Drug Administration-approved and unapproved indications/regimens. These regimens are only provided to supplement the latest treatment strategies.

These Guidelines are a work in progress that may be refined as often as new significant data becomes available. The NCCN Guidelines® are a consensus statement of its authors regarding their views of currently accepted approaches to treatment. Any clinician seeking to apply or consult any NCCN Guidelines® is expected to use independent medical judgment in the context of individual clinical circumstances to determine any patient's care or treatment. The National Comprehensive Cancer Network makes no warranties of any kind whatsoever regarding their content, use, or application and disclaims any responsibility for their application or use in any way.

General treatment note: Exposure to myelotoxic agents—including alkylating agents and nitrosoureas—should be limited to avoid compromising stem-cell reserve prior to stem-cell harvest in patients who may be candidates for transplant.¹

Primary Therapy for Transplant Candidates¹

Note: All recommendations are Category 2A unless otherwise indicated.

Preferred Regimens

REGIMEN	DOSING
Bortezomib + dexamethasone (Category 1)^{2-5*†}	Days 1, 4, 8, and 11: Bortezomib 1.3mg/m ² IV push over 3–5 seconds or SC, plus Days 1–4 (all cycles) and 9–12 (cycles 1 and 2): Dexamethasone 40mg orally daily. OR Days 1–2, 4–5, 8–9, and 11–12: Dexamethasone 20mg orally daily. Repeat cycle every 3 weeks for 3–4 cycles.
Bortezomib + doxorubicin + dexamethasone (Category 1)^{6-7*†}	Days 1, 4, 8, and 11: Bortezomib 1.3mg/m ² IV push over 3–5 seconds or SC, plus Days 1–4: Doxorubicin 9mg/m ² IV push or continuous IV infusion over 24 hours daily, plus Days 1–4, 9–12, and 17–20: Dexamethasone 40mg orally daily for cycle 1, followed by dexamethasone on days 1–4 for cycles 2–4. Repeat cycle every 3 weeks for 3–4 cycles. OR Days 1, 4, 8, and 11: Bortezomib 1.3mg/m ² IV push over 3–5 seconds or SC, plus Days 1–4: Doxorubicin 9mg/m ² IV push or continuous IV infusion over 24 hours daily, plus Days 1–4, 9–12, and 17–20: Dexamethasone 40mg orally daily. Repeat cycle every 4 weeks for 3–4 cycles.
Bortezomib + thalidomide + dexamethasone (Category 1)^{4,8-10*††}	Days 1, 4, 8, and 11: Bortezomib 1.3mg/m ² IV push over 3–5 seconds or SC Days 1–21: Thalidomide 50–200mg orally daily at bedtime, plus Days 1, 2, 4, 5, 8, 9, 11, and 12: Dexamethasone 40mg orally daily. OR Days 1–4 and 9–12: Dexamethasone 40mg orally daily. OR Days 1–4 (all cycles) and 9–12 (cycles 1 and 2): Dexamethasone 40mg orally daily. Repeat cycle every 3 weeks for 3–4 cycles.
Lenalidomide + dexamethasone (Category 1)^{11,12‡}	Days 1–21: Lenalidomide 25mg orally daily, plus Days 1, 8, 15 and 22: Dexamethasone 40mg orally daily. OR Days 1–4, 9–12, and 17–20: Dexamethasone 40mg orally daily. Repeat cycle every 4 weeks for 3–4 cycles. OR Days 1–28: Lenalidomide 25mg orally daily Days 1–4, 9–12, and 17–20: Dexamethasone 40mg orally daily. Repeat cycle every 5 weeks for 3–4 cycles.
Bortezomib + lenalidomide + dexamethasone (RVD)^{13-15*††}	Days 1, 4, 8, and 11: Bortezomib 1.3mg/m ² IV push over 3–5 seconds or SC Days 1–21: Lenalidomide 25mg orally daily, plus Days 1, 2, 4, 5, 8, 9, 11, and 12: Dexamethasone 40mg orally daily. OR Days 1, 8, and 15: Dexamethasone 40mg orally daily. Repeat cycle every 3 weeks for 3–4 cycles.
Bortezomib + cyclophosphamide + dexamethasone (BCD)^{16-19*†}	Days 1, 4, 8, and 11: Bortezomib 1.3mg/m ² IV push over 3–5 seconds or SC Days 1, 8, 15, and 22: Cyclophosphamide 300mg/m ² /day orally Days 1–4, 9–12, and 17–20: Dexamethasone 40mg orally daily. Repeat cycle every 4 weeks for 3–4 cycles. OR Days 1, 4, 8, and 11: Bortezomib 1.3mg/m ² IV push over 3–5 seconds or SC Days 1, 8, and 15: Cyclophosphamide 500mg/m ² /day orally Days 1, 8, and 15: Dexamethasone 40mg orally daily. Repeat cycle every 3 weeks for 3–4 cycles. OR Days 1, 4, 8, and 11: Bortezomib 1.3mg/m ² IV push over 3–5 seconds or SC Day 1: Cyclophosphamide 900mg/m ² IV over 60 minutes Days 1, 2, 4, 5, 8, 9, 11, and 12: Dexamethasone 40mg orally daily. Repeat cycle every 3 weeks for 3–4 cycles.

continued

MULTIPLE MYELOMA TREATMENT REGIMENS (Part 2 of 9)

Primary Therapy for Transplant Candidates¹ (continued)

Other Regimens

REGIMEN	DOSING
Carfilzomib + Lenalidomide + dexamethasone (CRD)^{20,21**}	<p>Cycle 1: Days 1 and 2: Carfilzomib 20mg/m² (maximum 44mg) IV over 2–10 minutes Days 8, 9, 15, and 16: Carfilzomib 27mg/m² (maximum 59.4mg) IV over 2–10 minutes Days 1–21: Lenalidomide 25mg orally daily Days 1, 8, 15, and 22: Dexamethasone 40mg orally daily.</p> <p>Cycles 2–7: Days 1, 2, 8, 9, 15, and 16: Carfilzomib 27mg/m² (maximum 59.4mg) IV over 2–10 minutes Days 1–21: Lenalidomide 25mg orally daily Days 1, 8, 15, and 22: Dexamethasone 40mg orally daily for cycles 2–4, followed by dexamethasone 20mg orally daily for cycles 5–8. Repeat cycle every 28 days.</p> <p style="text-align: center;">OR</p> <p>Cycle 1: Days 1 and 2: Carfilzomib 20mg/m² (maximum 44mg) IV over 2–10 minutes Days 8, 9, 15, and 16: Carfilzomib 36mg/m² (maximum 79.2mg) IV over 30 minutes Days 1–21: Lenalidomide 25mg orally daily Days 1, 8, 15, and 22: Dexamethasone 40mg orally daily.</p> <p>Cycles 2–7: Days 1, 2, 8, 9, 15, and 16: Carfilzomib 36mg/m² (maximum 79.2mg) IV over 30 minutes Days 1–21: Lenalidomide 25mg orally daily Days 1, 8, 15, and 22: Dexamethasone 40mg orally daily for cycles 2–4, followed by dexamethasone 20mg orally daily for cycles 5–8. Repeat cycle every 28 days.</p> <p style="text-align: center;">OR</p> <p>Cycle 1: Days 1 and 2: Carfilzomib 20mg/m² (maximum 44mg) IV over 2–10 minutes Days 8, 9, 15, and 16: Carfilzomib 36mg/m² (maximum 79.2mg) IV over 30 minutes Days 1–21: Lenalidomide 25mg orally daily Days 1, 2, 8, 9, 15, 16, 22, and 23: Dexamethasone 20mg orally daily.</p> <p>Cycles 2–7: Days 1, 2, 8, 9, 15, and 16: Carfilzomib 36mg/m² (maximum 79.2mg) IV over 30 minutes Days 1–21: Lenalidomide 25mg orally daily Days 1, 2, 8, 9, 15, 16, 22, and 23: Dexamethasone 20mg orally daily for cycles 2–4, followed by dexamethasone 10mg orally daily for cycles 5–8. Repeat cycle every 28 days.</p>
Thalidomide + dexamethasone (Category 2B)^{22–25†}	<p>Days 1–28: Thalidomide 50–200mg orally daily at bedtime, plus Days 1–4 (all cycles), 9–12, and 17–20 (cycles 1 and 3): Dexamethasone 40mg orally daily.</p> <p style="text-align: center;">OR</p> <p>Days 1–4, 9–12, and 17–20: Dexamethasone 40mg orally daily. Repeat cycle every 4 weeks for 3–4 cycles.</p>
Dexamethasone (Category 2B)^{22,23,26}	<p>Day 1–4, 9–12, 17–20: Dexamethasone 20mg/m² or 40mg orally daily; may consider giving on days 1–4 only starting on cycle 5 and for subsequent cycles. Repeat cycle every 4–5 weeks for 3–4 cycles.</p> <p style="text-align: center;">OR</p> <p>Days 1–4 (all cycles), 9–12, and 17–20 (cycles 1–2): Dexamethasone 20mg/m² or 40mg orally daily. Repeat cycle every 6 weeks for 2–3 cycles.</p>
Liposomal doxorubicin + vincristine + dexamethasone (DVD) (Category 2B)²⁷	<p>Day 1: Pegylated liposomal doxorubicin 40mg/m² IV over 60 minutes + vincristine 1.4mg/m² (maximum 2mg) IV over 5–10 minutes Days 1–4: Dexamethasone 40mg orally daily. Repeat cycle every 4 weeks for 3–4 cycles.</p>

Primary Therapy for Non-Transplant Candidates¹

Preferred Regimens

Bortezomib + dexamethasone^{3–5*†}	<p>Days 1, 4, 8, and 11: Bortezomib 1.3mg/m² IV push over 3–5 seconds or SC, plus Days 1–4 (all cycles) and 9–12 (cycles 1 and 2): Dexamethasone 40mg orally daily.</p> <p style="text-align: center;">OR</p> <p>Days 1–2, 4–5, 8–9, and 11–12: Dexamethasone 20mg orally daily. Repeat cycle every 3 weeks until maximal response, disease progression, or unacceptable toxicity.</p>
Lenalidomide + low-dose dexamethasone (Category 1)^{11†}	<p>Days 1–21: Lenalidomide 25mg orally daily Days 1, 8, 15, and 22: Dexamethasone 40mg orally daily. Repeat cycle every 4 weeks until maximal response, disease progression, or unacceptable toxicity.</p>

continued

MULTIPLE MYELOMA TREATMENT REGIMENS (Part 3 of 9)

Primary Therapy for Non-Transplant Candidates¹ (continued)

Preferred Regimens (continued)

REGIMEN	DOSING
Melphalan + prednisone + bortezomib (MPB) (Category 1) ^{28,29,*†}	<p>Days 1-4: Melphalan 9mg/m² orally daily + prednisone 60mg/m² orally, plus Cycles 1-4: Days 1, 4, 8, 11, 22, 25, 29, and 32: Bortezomib 1.3mg/m² IV push over 3-5 seconds or SC. Subsequent Cycles: Days 1, 8, 22, and 29: Bortezomib 1.3mg/m² IV push over 3-5 seconds or SC. Repeat cycle every 6 weeks until maximal response, disease progression, or unacceptable toxicity.</p>
Melphalan + prednisone + lenalidomide (MPL) (Category 1) ^{30-33‡}	<p>Days 1-4: Melphalan 0.18mg/kg orally daily + prednisone 2mg/kg orally daily Days 1-21: Lenalidomide 10mg orally daily. Repeat cycle every 4 weeks until maximal response, disease progression, or unacceptable toxicity.</p> <p style="text-align: center;">OR</p> <p>Days 1-4: Melphalan 5mg/m² orally daily + prednisone 60mg/m² orally daily Days 1-21: Lenalidomide 10mg orally daily. Repeat cycle every 4 weeks until maximal response, disease progression, or unacceptable toxicity.</p>
Melphalan + prednisone + thalidomide (MPT) (Category 1) ^{34-39‡}	<p>Days 1-4: Melphalan 0.2-0.25mg/kg orally daily + prednisone 2mg/kg or 100mg orally daily Days 1-42: Thalidomide 50-200mg orally daily at bedtime. Repeat cycle every 6 weeks until maximal response, disease progression, or unacceptable toxicity.</p> <p style="text-align: center;">OR</p> <p>Days 1-5: Melphalan 0.25mg/kg orally daily + prednisone 1mg/kg orally daily Days 1-28: Thalidomide 50-200mg orally daily at bedtime. Repeat cycle every 4 weeks until maximal response, disease progression, or unacceptable toxicity.</p> <p style="text-align: center;">OR</p> <p>Days 1-7: Melphalan 4mg/m² orally daily + prednisone 40mg/m² orally daily Days 1-28: Thalidomide 50-200mg orally daily. Repeat cycle every 4 weeks until maximal response, disease progression, or unacceptable toxicity.</p>
Other Regimens	
Dexamethasone (Category 2B) ^{22,23,26}	<p>Day 1-4, 9-12, 17-20: Dexamethasone 20mg/m² or 40mg orally daily; may consider giving on days 1-4 only starting on cycle 5 and for subsequent cycles. Repeat cycle every 4-5 weeks until maximal response, disease progression, or unacceptable toxicity.</p> <p style="text-align: center;">OR</p> <p>Days 1-4 (all cycles), 9-12, and 17-20 (cycles 1-2): Dexamethasone 20mg/m² or 40mg orally daily. Repeat cycle every 6 weeks until maximal response, disease progression, or unacceptable toxicity.</p>
Liposomal doxorubicin + vincristine + dexamethasone (DVD) (Category 2B)²⁷	<p>Day 1: Pegylated liposomal doxorubicin 40mg/m² IV over 60 minutes + vincristine 1.4mg/m² (maximum 2mg) IV over 5-10 minutes Days 1-4: Dexamethasone 40mg orally daily. Repeat cycle every 4 weeks until maximal response, disease progression, or unacceptable toxicity.</p>
Melphalan + prednisone (MP)^{29,34,36,37,39}	<p>Days 1-7: Melphalan 4mg/m² orally + prednisone 40mg/m² orally daily. Repeat cycle every 4 weeks until maximal response, disease progression, or unacceptable toxicity.</p> <p style="text-align: center;">OR</p> <p>Days 1-4: Melphalan 0.2-0.25mg/kg orally daily + prednisone 2mg/kg or 100mg orally daily. Repeat cycle every 4-6 weeks until maximal response, disease progression, or unacceptable toxicity.</p> <p style="text-align: center;">OR</p> <p>Days 1-4: Melphalan 8-9mg/m² orally daily + prednisone 60mg/m² orally daily. Repeat cycle every 4-6 weeks until maximal response, disease progression, or unacceptable toxicity.</p>
Thalidomide + dexamethasone (Category 2B) ^{22,23,25‡}	<p>Days 1-28: Thalidomide 50-200mg orally daily at bedtime, plus Days 1-4, 9-12, and 17-20: Dexamethasone 40mg orally daily.</p> <p style="text-align: center;">OR</p> <p>Days 1-4 (all cycles), 9-12, and 17-20 (cycles 1-4): Dexamethasone 40mg orally daily.</p> <p style="text-align: center;">OR</p> <p>Days 1-4 (all cycles), 9-12, and 17-20 (odd cycles): Dexamethasone 40mg orally daily. Repeat cycle every 4 weeks until maximal response, disease progression, or unacceptable toxicity.</p>

continued

MULTIPLE MYELOMA TREATMENT REGIMENS (Part 4 of 9)

Primary Therapy for Non-Transplant Candidates¹ (continued)

Other Regimens (continued)

REGIMEN	DOSING
Vincristine + doxorubicin + dexamethasone (VAD) (Category 2B)⁴¹	<p>Days 1-4 : Vincristine 0.4mg continuous IV infusion over 24 hours + doxorubicin 9mg/m² continuous IV infusion over 24 hours daily, plus</p> <p>Odd Cycles: Days 1-4, 9-12, and 17-20: Dexamethasone 40mg orally daily.</p> <p>Even Cycles: Days 1-4: Dexamethasone 40mg orally daily. Repeat cycle every 4 weeks until maximal response, disease progression, or unacceptable toxicity.</p> <p style="text-align: center;">OR</p> <p>Days 1-4: Vincristine 0.4mg IV over 5-10 minutes + doxorubicin 9mg/m² IV push, plus</p> <p>Odd Cycles: Days 1-4, 9-12, and 17-20: Dexamethasone 40mg orally daily.</p> <p>Even Cycles: Days 1-4: Dexamethasone 40mg orally daily. Repeat cycle every 4 weeks until maximal response, disease progression, or unacceptable toxicity.</p>

Maintenance Therapy¹

Preferred Regimens

Bortezomib^{5,7*†}	<p>Days 1, 4, 8, and 11: Bortezomib 1.3mg/m² IV push over 3-5 seconds or SC. Repeat cycle every 2 weeks for 2 years or until disease progression or unacceptable toxicity.</p> <p style="text-align: center;">OR</p> <p>Days 1, 8, 15, and 22: Bortezomib 1.6mg/m² IV push over 3-5 seconds or SC. Repeat cycle every 5 weeks for 6 months or until disease progression or unacceptable toxicity.</p>
Lenalidomide (Category 1)^{30,42-44†}	<p>Days 1-28: Lenalidomide 10mg orally daily for 3 cycles, followed by 15mg for subsequent cycles.</p> <p style="text-align: center;">OR</p> <p>Days 1-21: Lenalidomide 10mg orally daily. Repeat cycle every 4 weeks until disease progression or unacceptable toxicity.</p>
Thalidomide (Category 1)^{45,46†}	<p>Days 1-28: Thalidomide 50-200mg orally daily at bedtime. Repeat cycle every 4 weeks until disease progression or unacceptable toxicity.</p>

Other Regimens

Bortezomib + prednisone (Category 2B)^{47*†}	<p>Days 1, 4, 8, and 11: Bortezomib 1.3mg/m² IV push over 3-5 seconds or SC Days 1-90: Prednisone 50mg orally every other day. Repeat cycle every 3 months for 3 years or until disease progression or unacceptable toxicity.</p>
Bortezomib + thalidomide (Category 2B)^{47,48*††}	<p>Days 1, 4, 8, and 11: Bortezomib 1.3mg/m² IV push over 3-5 seconds or SC Days 1-90: Thalidomide 50-100mg orally daily at bedtime. Repeat cycle every 3 months for 3 years or until disease progression or unacceptable toxicity.</p>
Interferon alfa (Category 2B)^{49,50}	<p>Interferon alfa-2b 2-5 million units or 2-5 million units/m² SC 3 times a week. Repeat cycle every 4 weeks until disease progression or unacceptable toxicity.</p>
Steroids (Category 2B)^{51,52}	<p>Days 1-4: Dexamethasone 40mg orally daily. Repeat cycle every 28 days until disease progression or unacceptable toxicity.</p> <p style="text-align: center;">OR</p> <p>Days 1-28: Prednisone 50mg orally every other day. Repeat cycle every 28 days until disease progression or unacceptable toxicity.</p>
Thalidomide + prednisone (Category 2B)^{53†}	<p>Days 1-28: Thalidomide 50-200mg orally daily at bedtime + prednisone 50mg orally every other day. Repeat cycle every 28 days until disease progression or unacceptable toxicity.</p>

Therapy for Previously Treated Multiple Myeloma¹

Preferred Regimens

Repeat induction therapy if relapse > 6 months.

Bortezomib (Category 1)^{54-56*†}	<p>Cycles 1-8: Days 1, 4, 8, and 11: Bortezomib 1.3mg/m² IV push over 3-5 seconds or SC Repeat cycle every 3 weeks for 8 cycles.</p> <p>Subsequent Cycles: Days 1, 8, 15, and 22: Bortezomib 1.3mg/m² IV push over 3-5 seconds or SC. Repeat cycle every 5 weeks for until maximal response, disease progression, or unacceptable toxicity.</p>
Bortezomib + dexamethasone^{3-5*†}	<p>Days 1, 4, 8, and 11: Bortezomib 1.3mg/m² IV push over 3-5 seconds or SC Days 1, 2, 4, 5, 8, 9, 11, and 12: Dexamethasone 20mg orally daily. Repeat cycle every 3 weeks until maximal response, disease progression, or unacceptable toxicity.</p>

continued

MULTIPLE MYELOMA TREATMENT REGIMENS (Part 5 of 9)

Therapy for Previously Treated Multiple Myeloma¹ (continued)

Preferred Regimens (continued)

REGIMEN	DOSING
Bortezomib + lenalidomide + dexamethasone ^{13-15**††}	<p>Cycles 1–8: Days 1, 4, 8, and 11: Bortezomib 1.3mg/m² IV push over 3–5 seconds or SC Days 1–14: Lenalidomide 25mg orally daily, plus Days 1, 2, 4, 5, 8, 9, 11, and 12: Dexamethasone 40mg orally daily for cycles 1–4, followed by dexamethasone 20mg orally daily for cycles 5–8 OR Days 1, 8, and 15: Dexamethasone 20–40mg orally daily Repeat cycle every 3 weeks for 8 cycles.</p> <p>Subsequent Cycles: Days 1 and 8: Bortezomib 1.3mg/m² IV push over 3–5 seconds or SC Days 1–14: Lenalidomide 15mg orally daily Days 1, 2, 8, and 9: Dexamethasone 40mg orally daily. Repeat cycle every 3 weeks until maximal response, disease progression, or unacceptable toxicity.</p>
Bortezomib + liposomal doxorubicin (Category 1) ^{57*†}	<p>Days 1, 4, 8, and 11: Bortezomib 1.3mg/m² IV push over 3–5 seconds or SC Day 4: Pegylated liposomal doxorubicin 30mg/m² IV over 60 minutes. Repeat cycle every 3 weeks until maximal response, disease progression, or unacceptable toxicity.</p>
Bortezomib + thalidomide + dexamethasone ^{58**††}	<p>Cycles 1–8: Days 1, 4, 8, and 11: Bortezomib 1.3mg/m² IV push over 3–5 seconds or SC Days 1–21: Thalidomide 50–200mg orally daily at bedtime Days 1–4: Dexamethasone 40mg orally daily. Repeat cycle every 3 weeks for 8 cycles.</p> <p>Subsequent Cycles: Days 1, 8, 15, and 22: Bortezomib 1.3mg/m² IV push over 3–5 seconds or SC Days 1–42: Thalidomide 50–200mg orally daily at bedtime Days 1–4: Dexamethasone 40mg orally daily. Repeat cycle every 6 weeks until maximal response, disease progression, or unacceptable toxicity.</p>
Carfilzomib ^{59*}	<p>Days 1, 2, 8, 9, 15, and 16: Carfilzomib 20mg/m² (maximum 44mg) IV over 2–10 minutes for cycle 1, followed by carfilzomib 27mg/m² (maximum 59.4mg) IV over 2–10 minutes for subsequent cycles. Repeat cycle every 4 weeks until maximal response, disease progression, or unacceptable toxicity.</p>
Carfilzomib + lenalidomide + dexamethasone (Category 1) ^{60**†}	<p>Cycle 1: Days 1 and 2: Carfilzomib 20mg/m² (maximum 44mg) IV over 2–10 minutes Days 8, 9, 15, and 16: Carfilzomib 27mg/m² (maximum 59.4mg) IV over 2–10 minutes Days 1, 8, 15, and 22: Dexamethasone 40mg PO or IV Days 1–21: Lenalidomide 25mg PO daily.</p> <p>Cycles 2–12: Days 1, 2, 8, 9, 15, and 16: Carfilzomib 27mg/m² (maximum 59.4mg) IV over 2–10 minutes Days 1, 8, 15, and 22: Dexamethasone 40mg PO or IV Days 1–21: Lenalidomide 25mg PO daily.</p> <p>Subsequent Cycles: Days 1, 2, 15, and 16: Carfilzomib 27mg/m² (maximum 59.4mg) IV over 2–10 minutes Days 1, 8, 15, and 22: Dexamethasone 40mg PO or IV Days 1–21: Lenalidomide 25mg PO daily. Repeat cycle every 4 weeks until disease progression or unacceptable toxicity.</p>
Bortezomib + cyclophosphamide + dexamethasone (BCD) ^{61,62**†}	<p>Days 1, 4, 8, and 11: Bortezomib 1.3mg/m² IV push over 3–5 seconds or SC Days 1, 8, and 15: Cyclophosphamide 500mg orally daily Days 1, 2, 4, 5, 8, 9, 11, and 12: Dexamethasone 40mg orally daily. Repeat cycle every 3 weeks until maximal response, disease progression, or unacceptable toxicity.</p> <p>OR Cycles 1–8: Days 1, 4, 8, and 11: Bortezomib 1.3mg/m² IV push over 3–5 seconds or SC Days 1–21: Cyclophosphamide 50mg orally daily Days 1, 2, 4, 5, 8, 9, 11, and 12: Dexamethasone 20mg orally daily. Repeat cycle every 3 weeks for 8 cycles.</p> <p>Subsequent Cycles: Days 1, 8, 15, and 22: Bortezomib 1.3mg/m² IV push over 3–5 seconds or SC Days 1–35: Cyclophosphamide 50mg orally daily Days 1, 2, 8, 9, 15, 16, 22, and 23: Dexamethasone 20mg orally daily. Repeat cycle every 5 weeks until maximal response, disease progression, or unacceptable toxicity.</p>

continued

MULTIPLE MYELOMA TREATMENT REGIMENS (Part 6 of 9)

Therapy for Previously Treated Multiple Myeloma¹ (continued)

Preferred Regimens (continued)

REGIMEN	DOSING
Cyclophosphamide + lenalidomide + dexamethasone (CRD) ^{63‡}	Days 1, 8, 15, and 21: Cyclophosphamide 500mg orally daily Day 1-21: Lenalidomide 25mg orally daily Day 1-4 and 12-15: Dexamethasone 40mg orally daily. Repeat cycle every 4 weeks until maximal response, disease progression, or unacceptable toxicity.
Dexamethasone + cyclophosphamide + etoposide+ cisplatin (DCEP) ⁶⁴⁻⁶⁶	Days 1-4: Dexamethasone 40mg/m ² orally daily. Days 1-4: Cyclophosphamide 400mg/m ² continuous IV infusion over 24 hours daily + etoposide 40mg/m ² continuous IV infusion over 24 hours daily + cisplatin 10-15mg/m ² continuous IV infusion over 24 hours daily. Repeat cycle every 4 weeks until maximal response, disease progression, or unacceptable toxicity.
Dexamethasone + thalidomide + cisplatin + doxorubicin + cyclophosphamide + etoposide (DT-PACE) ⁶⁷	Days 1-4: Dexamethasone 40mg orally daily Day 1-28: Thalidomide 50-200mg orally daily at bedtime Days 1-4: Cyclophosphamide 400mg/m ² continuous IV infusion over 24 hours daily + etoposide 40mg/m ² continuous IV infusion over 24 hours daily + cisplatin 10mg/m ² continuous IV infusion over 24 hours daily + doxorubicin 10mg/m ² continuous IV infusion over 24 hours daily. Repeat cycle every 4 weeks until maximal response, disease progression, or unacceptable toxicity.
Dexamethasone + thalidomide + cisplatin + doxorubicin + cyclophosphamide + etoposide + bortezomib (VTD-PACE) ^{68*†}	Induction: Days 1, 4, 8, and 11: Bortezomib 1mg/m ² IV push over 3-5 seconds or SC Day 4-7: Thalidomide 50-200mg orally daily at bedtime Days 4-7: Dexamethasone 40mg orally daily Days 4-7: Cyclophosphamide 400mg/m ² continuous IV infusion over 24 hours daily + etoposide 40mg/m ² continuous IV infusion over 24 hours daily + cisplatin 10mg/m ² continuous IV infusion over 24 hours daily + doxorubicin 10mg/m ² continuous IV infusion over 24 hours daily. Consolidation: Cycle 1: Beginning 6 weeks-4 months after last transplant: Days 1, 4, 8, and 11: Bortezomib 1mg/m ² IV push over 3-5 seconds or SC Day 1-4: Thalidomide 50-200mg orally daily at bedtime Days 1-4: Dexamethasone 40mg orally daily Days 1-4: Cyclophosphamide 300mg/m ² continuous IV infusion over 24 hours daily + etoposide 30mg/m ² continuous IV infusion over 24 hours daily + cisplatin 7.5mg/m ² continuous IV infusion over 24 hours daily + doxorubicin 7.5mg/m ² continuous IV infusion over 24 hours daily. Cycle 2: Beginning 2 - 4 months after cycle 1: Days 1, 4, 8, and 11: Bortezomib 1mg/m ² IV push over 3-5 seconds or SC Day 1-4: Thalidomide 50-200mg orally daily at bedtime Days 1-4: Dexamethasone 40mg orally daily Days 4-7: Cyclophosphamide 300mg/m ² continuous IV infusion over 24 hours daily + etoposide 30mg/m ² continuous IV infusion over 24 hours daily + cisplatin 7.5mg/m ² continuous IV infusion over 24 hours daily + doxorubicin 7.5mg/m ² continuous IV infusion over 24 hours daily.
High-dose cyclophosphamide ⁶⁹	Days 1-4: Cyclophosphamide 600mg/m ² IV over 60 minutes. Repeat cycle every 4 weeks for 2 cycles, then every 3 months until maximal response, disease progression, or unacceptable toxicity.
Lenalidomide + dexamethasone (Category 1) ^{70,71‡}	Days 1-21: Lenalidomide 25mg orally daily Days 1-4 (all cycles), 9-12, and 17-20 (cycles 1-4): Dexamethasone 40mg orally daily. Repeat cycle every 4 weeks until maximal response, disease progression, or unacceptable toxicity.
Panobinostat + bortezomib + dexamethasone (Category 1) ^{72*}	Cycles 1-8: Days 1, 3, 5, 8, 10, and 12: Panobinostat 20mg PO Days 1, 4, 8, and 11: Bortezomib 1.3mg/m ² IV Days 1, 2, 4, 5, 8, 9, 11, and 12: Dexamethasone 20mg PO. Repeat cycle every 21 days. Cycles 9-16: Days 1, 3, 5, 8, 10, and 12: Panobinostat 20mg PO Days 1 and 8: Bortezomib 1.3mg/m ² IV Days 1, 2, 8 and 9: Dexamethasone 20mg PO. Repeat cycle every 21 days.
Pomalidomide + dexamethasone ⁷³	Days 1-21: Pomalidomide 4mg orally daily Days 1, 8, 15, and 22: Dexamethasone 40mg (age ≤75 years) or 20mg (age >75 years) orally daily. Repeat cycle every 4 weeks until maximal response, disease progression, or unacceptable toxicity.

continued

MULTIPLE MYELOMA TREATMENT REGIMENS (Part 7 of 9)

Therapy for Previously Treated Multiple Myeloma¹ (continued)

Preferred Regimens (continued)

REGIMEN	DOSING
Thalidomide + dexamethasone ^{74-76†}	<p>Days 1-28: Thalidomide 50-200mg orally daily at bedtime, plus</p> <p>Days 1-4 (all cycles), 9-12, and 17-20 (cycle 1): Dexamethasone 20mg/m² or 40mg orally daily.</p> <p>OR</p> <p>Days 1-4: Dexamethasone 20mg/m² or 40mg orally daily.</p> <p>OR</p> <p>Days 1-5 (all cycles) and 15-19 (until response): Dexamethasone 20mg/m² or 40mg orally daily.</p> <p>Repeat cycle every 4 weeks until maximal response, disease progression, or unacceptable toxicity.</p>
Other Regimens	
Bendamustine ^{77,78}	<p>Days 1 and 2: Bendamustine 80-150mg/m² IV over 30 minutes.</p> <p>Repeat cycle every 4 weeks until maximal response, disease progression, or unacceptable toxicity.</p>
Bortezomib + vorinostat ^{79,80*†}	<p>Days 1, 4, 8, and 11: Bortezomib 1.3mg/m² IV push over 3-5 seconds or SC</p> <p>Day 1-14: Vorinostat 400mg orally daily.</p> <p>Repeat cycle every 3 weeks until maximal response, disease progression, or unacceptable toxicity.</p>
Lenalidomide + bendamustine + dexamethasone (BLD) ^{81‡}	<p>Days 1 and 2: Bendamustine 75mg/m² IV over 30 minutes</p> <p>Days 1-21: Lenalidomide 10mg orally daily</p> <p>Days 1, 8, 15, and 22: Dexamethasone 40mg orally daily.</p> <p>Repeat cycle every 4 weeks until maximal response, disease progression, or unacceptable toxicity.</p>

* Recommended herpes zoster prophylaxis for patients treated with bortezomib and carfilzomib.

† Consider using subcutaneous bortezomib for patients with pre-existing high-risk peripheral neuropathy.

‡ Prophylactic anticoagulation recommended for patients receiving thalidomide-based therapy or lenalidomide with dexamethasone.

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(Revised 9/2015)

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