

Potential Clinical and Economic Outcomes of Selected Scientific Developments for Multiple Myeloma

Scientific Development	Key Elements	Potential Economic or Clinical Impact	Implications for Oncology Clinicians
<p>Implementation of a continuum approach to treatment selection using a risk-adapted treatment model for MM</p> <p><i>Fonaseca, 2007</i> <i>Kyle & Rajkumar, 2008</i> <i>Dispenzieri et al, 2007</i></p>	<ul style="list-style-type: none"> • Cytogenetics • Molecular analysis • ISS staging • Serum-free light chain analysis • Age and ethnicity • Eligibility for stem cell transplant and timing of the transplant(s) • Duration of complete remission from treatment initiation 	<ul style="list-style-type: none"> • Patient-specific treatment selection with potential to improve clinical outcomes by utilizing the most beneficial treatment option early in the course of disease • Reduction in use of ineffective therapies with associated short-term and cumulative toxicities • Preservation of future treatment options • Refined utilization of diagnostics and therapeutics 	<ul style="list-style-type: none"> • Requires familiarity and implementation of the most recent clinical trials data and practice guidelines • Risk-based criteria for initiation of active therapies • Comprehensive diagnostics at the time of diagnosis are essential to effective risk stratification and treatment selection with application of the continuum approach • Identification of transplant eligibility at the time of diagnosis allows adapted therapies feasible in the older adult • Opportunities for refinement of cost and outcomes analysis of ongoing clinical evaluation, including <ul style="list-style-type: none"> ○ Development of monitoring guidelines specific to MM based on the continuum approach <ul style="list-style-type: none"> ▪ Frequency of radiology and laboratory monitoring ▪ Impact on treatment ▪ Inclusion of diagnostic analysis in clinical trials with consideration of postmarketing recommendations for safety monitoring
<p>Minimizing treatment related toxicity: Consensus statements on side effect management for novel agents in the treatment of MM from the International Myeloma Foundation Nurse Leadership Board</p> <p><i>Bertolotti et al, 2008</i></p>	<p>Management of myelosuppression</p> <p><i>Micelli et al, 2008</i></p>	<ul style="list-style-type: none"> • Reduction in treatment delay or discontinuation • Reduction in hospitalization due to neutropenic fevers • Improved patient satisfaction 	<ul style="list-style-type: none"> • Requires familiarity with the potential severity of treatment related toxicities, dose and schedule modifications, and prevention strategies <ul style="list-style-type: none"> ○ Appropriate use of colony stimulating factors with consideration of safety <ul style="list-style-type: none"> • Awareness of recent data on the use of erythropoietin-stimulating proteins • Effective use of granulocyte colony-stimulating factor may allow continuation of therapy to achieve optimal benefit ○ Implementation of a patient education and treatment plan for monitoring of blood counts, review of reportable signs and symptoms and early intervention to reduce treatment delays or dose modifications
	<p>Management of thromboembolic events</p> <p><i>Rome et al, 2008</i></p>	<ul style="list-style-type: none"> • Decreased incidence of VTE • Reduction in treatment discontinuation or delay • Reduction in cost of anticoagulation monitoring 	<ul style="list-style-type: none"> • Identification of predisposing risk factors • Initiate aspirin therapy for patients on low-dose dexamethasone and lenalidomide with no high-risk factors • Full anticoagulation therapy is recommended for patients with increased risk or development of thrombosis while on treatment
	<p>Management of peripheral neuropathy</p> <p><i>Tariman et al, 2008</i></p>	<ul style="list-style-type: none"> • Continuation of effective therapies • Improvement in QOL • Increased patient productivity • Reduction in pain associated with peripheral neuropathy 	<ul style="list-style-type: none"> • Complete baseline assessment of neuropathy is required • Assessment of individual lifestyle and the potential impact of neuropathy is necessary to minimize loss of function or decrease in QOL <ul style="list-style-type: none"> ○ Implications for the use of thalidomide or bortezomib • Familiarity with dose modifications or criteria for treatment continuation • Continued research for evaluation of strategies for the treatment and prevention of peripheral neuropathy associated with MM therapy <ul style="list-style-type: none"> ○ Familiarity with toxicities associated with supportive care measures

Potential Clinical and Economic Outcomes of Selected Scientific Developments for Multiple Myeloma

	<p>Management of Gastrointestinal side effects <i>Smith et al, 2008</i></p>	<ul style="list-style-type: none"> • Improvement in QOL • Reduction in treatment delays or dose reductions 	<ul style="list-style-type: none"> • Requires familiarity with the potential severity of treatment related toxicities, dose and schedule modifications, and prevention strategies <ul style="list-style-type: none"> ○ Appropriate use of antiemetic therapies ○ Familiarity with toxicities associated with antiemetic therapies
	<p>Management of steroid-associated side effects <i>Faiman et al, 2008</i></p>	<ul style="list-style-type: none"> • Improvement in QOL • Reduction in infectious complications • Reduction in thromboembolic events 	<ul style="list-style-type: none"> • Requires familiarity with common toxicities associated with chronic steroid use and appropriate monitoring and treatment guidelines • Patient education for reportable signs and symptoms • Careful assessment for infection, hyperglycemia, proximal muscle weakness, adrenal insufficiency, and psychological toxicities
	<p>Management of bone disease</p>	<ul style="list-style-type: none"> • Improvement in QOL • Reduction in incidence of osteonecrosis or renal impairment 	<ul style="list-style-type: none"> • Requires familiarity with common toxicities associated with administration of bisphosphonates • Dental evaluation prior to treatment is recommended • Patient and family education for reportable signs and symptoms
Improved communication between providers and patients	<p>Electronic medical Records</p> <p>Patient and caregiver education</p>	<ul style="list-style-type: none"> • Reduction of drug-drug interactions, contraindicated interventions, or duplication of services • Improved patient satisfaction 	<ul style="list-style-type: none"> • Continued compliance with the Health Information Privacy Protection Act (HIPPA) • Documentation must be timely and complete with inclusion of treatment and symptom management recommendations • Provider (cross specialties), patient, and family education is essential throughout the treatment continuum
Patient satisfaction and quality of life	<p>Incorporation of patient reported outcomes in post-marketing analysis of new therapies</p>	<ul style="list-style-type: none"> • Evaluation of a population more representative of the general population • Opportunity to refine therapies and monitoring strategies beyond the clinical trial design 	<ul style="list-style-type: none"> • Minimize time spent in the health care system vs normal daily activities • Requires awareness of out-of-pocket expenses for the patient, including co-pay, prescription costs, gas, housing, time off work for patient and caregiver, cost of or loss of insurance due to treatment schedule or toxicity, intensity of monitoring requirements

Adapted from Kurtin. *Multidisciplinary Cancer Care*. 2008.