

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

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

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