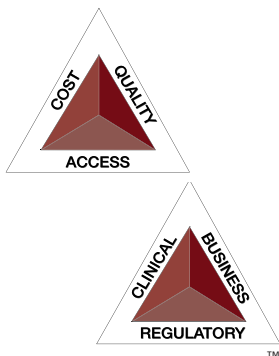


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SUPPLEMENT



Multiple Myeloma and Health Economics: Highlights from the 2009 ASH Annual Meeting

This activity is jointly sponsored by Global Education Group and Medical Learning Institute, Inc.
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Cost-Effectiveness of Evolving Treatment Regimens for Cancer Care: Implications for Decision Makers in Drug Benefit Design

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Statement of Need

The purpose of this activity is to enhance competence concerning the costs and health economics considerations influencing the use of novel therapies for patients with multiple myeloma.

Target Audience

This activity was developed for physicians and pharmacists.

Learning Objectives

At the completion of this educational activity, participants should be able to:

- Describe novel, molecularly targeted agents for multiple myeloma
- Identify health economics data from ASH 2009 to plan high-value treatment strategies
- Explain novel agents on the basis of total cost, life-quality, and survival data
- Describe how to advocate more effectively for multiple myeloma patients needing access to novel therapies

Commercial Support Acknowledgment

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Agenda: 1 hour

Articles/Commentaries: 45 minutes

Evaluation/Posttest: 15 minutes

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Economic Considerations in Multiple Myeloma: ASH 2009 Highlights

Multiple myeloma is a relatively uncommon cancer (about 21,000 new cases a year), but it has among the highest costs per patient of any malignancy. In recent years, disease prognosis has improved as a result of advances in treatment, such as autologous stem-cell transplantation and the novel drugs bortezomib, thalidomide, and lenalidomide. Incremental improvement, however, has come with a substantially higher cost, leading healthcare stakeholders to scrutinize therapies for their value, that is, the quality of care relative to its cost. Although the determination of value in cancer care is complex, stakeholders have important management tools, including evidence-based clinical practice guidelines and new cost guidance from the American Society of Clinical Hematology. Pharmacoeconomic research in multiple myeloma is a robust field of study, and the most recent meeting of the American Society of Hematology in late 2009 included important presentations on utilization, cost-effectiveness, and outcomes that are relevant to the value of novel therapies. [AHDB. 2010;3(1 suppl 2):S13-S20.]

Multiple myeloma (MM) is a malignancy characterized by an increase in abnormal blood plasma cells in the bone marrow.¹ In 2009, there were an estimated 20,580 new cases of MM in the United States, with 10,580 deaths attributable to the disease.^{1,2}

Today, the treatment of MM is very complex, utilizing a growing range of drugs and services. The increasing use of novel drug regimens and autologous stem-cell transplantation (ASCT) have improved prognosis during the past 3 decades.¹ Overall 5-year relative survival rate rose to 37.1% (1999-2005 data), up from 26% in the mid-1970s.^{3,4} This is a promising finding but should not obscure the fact that MM remains an incurable cancer, with a median survival of just 3 to 5 years.⁵

This incremental improvement in the care of MM has come at a price: the high acquisition cost of novel agents, the high service costs of ASCT, and the special requirements for managing treatment-related adverse events. Payers, providers, and even patients increasingly question the value of new cancer therapies, asking whether the cost of these therapies is justified by a corresponding increase in the quality of care.^{6,7} The American Society of Clinical Oncology (ASCO) has issued a 2009 ASCO guidance statement on the cost of cancer care and its impact on patients, industry, providers, and payers (Table 1).⁷

The treatment of MM is being scrutinized for its value and has been the subject of recent economic analysis.⁸ Of all cancers that may involve bone, MM

had the highest mean cost per case after diagnosis of metastatic bone disease in 2004 dollars: \$132,615 per case compared with \$88,402 for patients with breast cancer who developed metastatic bone disease and \$65,287 for patients with lung cancer who developed metastatic bone disease.⁹ The 2004 total cost for patients with MM and metastatic bone disease was \$950,113,852—more than \$100 million greater than the total costs for patients with lung cancer and metastatic bone disease, even though lung cancer incidence is nearly 11 times greater than the incidence of MM.^{2,9}

Specific interventions for MM are expensive,^{8,10-12} as documented by Cook in a 2008 economic analysis. The costs for ASCT typically range between \$20,000 and \$60,000, with some patients requiring a cost-doubling second transplant to achieve remission.⁸ The total costs of combination chemotherapy—even without the addition of novel, targeted drugs—run in the tens of thousands of dollars when supportive care and administration costs are added to drug acquisition costs.^{8,10,11} A published analysis, based on 85% of the 2007 average wholesale prices, estimated the annual acquisition cost of 3 novel agents—the proteasome inhibitor bortezomib, \$27,120 per patient per year (PPPY), and the immunomodulators thalidomide, \$53,295 PPPY, and lenalidomide, \$78,183 PPPY.⁸

Several recent studies have quantified the cost contributions of various treatments for MM. Fullerton and colleagues reported on the total resource utilization associated with single-agent bortezomib (Vel), thalido-

Table 1 ASCO Guidance Statement: Impact of Cancer Care Costs on Different Stakeholders

Patients	<ul style="list-style-type: none"> Delayed diagnosis, resulting in poorer prognosis Unable to obtain high-quality care, even if insured Noncompliance Reduced patient and caregiver employment status Personal bankruptcy Anxiety/fear/poor psychological well-being Strained relationship with healthcare providers
Pharmaceutical industry	<ul style="list-style-type: none"> Pressure to recoup investment on new-product development Pressure to sustain profits as therapy becomes more “personalized” by molecular/genetic prognostic classifiers Need to offer patient assistance programs
Payers	<ul style="list-style-type: none"> Reduced profitability (private insurance)/solvency (public payer) as reimbursements increase Pressure to raise premiums or reduce benefits Greater efforts/staffing to scrutinize costs of cancer care
Providers	<ul style="list-style-type: none"> Greater complexity and conflict when developing treatment recommendations Strain on patient–clinician relationship Difficulty in making decisions without adequate comparative cost-effectiveness data on a plethora of new treatments Fear that concern over cost will prevent administration of the best possible care

Source: Meropol NJ, et al. *J Clin Oncol*. 2009;27:3868-3874.

mide plus dexamethasone (Thal/Dex), lenalidomide plus dexamethasone (Rev/Dex), and bortezomib plus pegylated liposomal doxorubicin (Vel/Dox).¹⁰ Results showed that drug costs and total costs were lowest for Vel and highest for Rev/Dex. Even with the addition of prophylaxis for herpes zoster (ie, Vel) or for deep-vein thrombosis/pulmonary embolism (Thal/Dex, Rev/Dex), bortezomib monotherapy remained the least costly option.

In an effort to control costs while sustaining the quality of care, healthcare stakeholders have begun to pursue a value-based approach to cancer care.

In transplant-eligible patients with MM, Wang and colleagues assessed the total treatment costs per patient associated with the use of 2 bortezomib-based induction regimens versus vincristine + doxorubicin + dexamethasone (VAD) or Thal/Dex.¹¹ Patients treated with a bortezomib-based regimen had lower total costs, primarily because of a better postinduction response and reduced need for a second ASCT. Wang and colleagues also made additional cost comparisons, and based on sensitivity analysis determined that the pri-

mary cost driver was ASCT rather than drug therapy or management of adverse events.¹¹

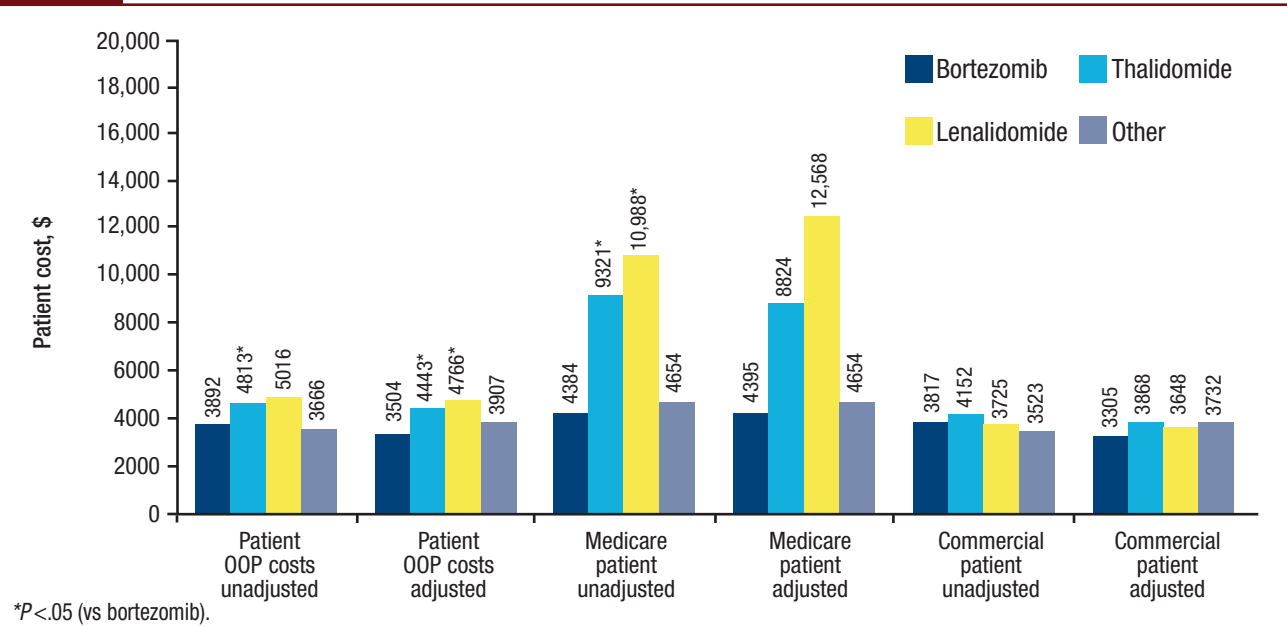
Defining Value in Cancer Care

In an effort to control costs while sustaining the quality of care, healthcare stakeholders have begun to pursue a value-based approach to cancer care. The value of a healthcare service is defined as quality relative to cost.^{13,14} A value-based approach strives to provide the best access to treatments that show the highest value—that is, the greatest quality at the lowest cost.^{13,14} A value-based scheme, for example, may reduce patient copays or remove prescribing restrictions from treatments that provide the highest efficacy per dollar spent. Several methods can help ensure the value of treatments, which are applicable in MM.

Adherence to Clinical Practice Guidelines

Established recommendations for the quality of care are important in assessing the value of an intervention. Practice guidelines on MM from the National Comprehensive Cancer Network (NCCN) provide evidence-based expert opinion and guidance for providers and payers. The result is a balanced perspective that emphasizes findings of great clinical importance, while minimizing less relevant studies. The NCCN guidelines also quantify the level of evidence, so stakeholders can know the strength or weakness of each recommendation.¹

Figure 1A Patient OOP Costs, by Treatment with Several Novel Agents



OOP indicates out-of-pocket.

Adapted with permission from Pinsky BW, et al. Multiple myeloma: patient out-of-pocket costs and healthcare utilization. Poster presented at the American Society of Hematology annual meeting; December 5-8, 2009.

Open Discussion of the Cost of Care with Patients

According to the ASCO 2009 cost guidance, health-care providers need to discuss the costs of care with patients, just as they would discuss the benefits of treatment and any potential adverse events.⁷ Holding such discussions requires clinicians to learn more about the cost of treatment, reimbursement policies, and available pharmaco-economic data, and become champions for the increased availability of cost-effectiveness data.

ASCO 2009 cost guidance recognizes and supports the need for cost-specific educational programs and materials for both clinicians and patients. Such programs make discussions of cost more fruitful and improve value-based decision-making.⁷

ASH 2009 Highlights: Value in Multiple Myeloma

Investigators are taking up the challenge of pharmaco-economics in cancer care, as was reflected at the 51st annual meeting of the American Society of Hematology (ASH), held in December 2009. This type of research can be the basis for patient-provider communication on cost and quality issues, the process of medical decision-making and the weighing of complex cost and quality factors, and the determination of the value of specific interventions. These areas of study have important implications to payers for utilization

and reimbursement analyses that help define decision-making and a value for health-plan membership. By sharing their results with providers through white papers and publications, payers encourage greater openness to cost considerations, while improving the methodology of value determination.

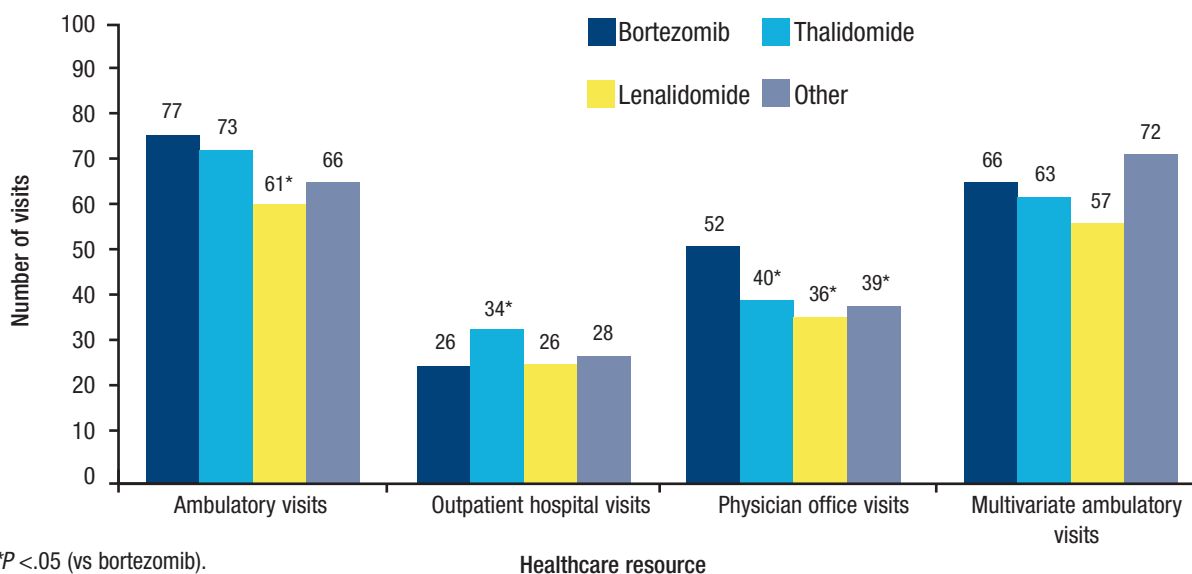
Key points from ASH 2009 on value in the treatment of MM are presented below.

These areas of study have important implications to payers for utilization and reimbursement analyses that help define decision-making and a value for health-plan membership.

Cost and Drug Utilization

Novel agents such as bortezomib, thalidomide, and lenalidomide have improved clinical outcomes in MM.¹⁵ These agents have different routes of administration—bortezomib via intravenous (IV) injection, thalidomide and lenalidomide orally—that could have an important impact on the total costs of care.

For this reason, Pinsky and colleagues compared the

Figure 1B Ambulatory Visits

Adapted with permission from Pinsky BW, et al. Multiple myeloma: patient out-of-pocket costs and healthcare utilization. Poster presented at the American Society of Hematology annual meeting; December 5-8, 2009.

utilization and costs of the treatment of MM with bortezomib monotherapy versus thalidomide-based therapy, lenalidomide-based therapy, or “other” conventional chemotherapy and radiotherapy.¹⁶ This study was a retrospective cohort evaluation using 2005-2007 claims data from a US commercial health plan of approximately 14 million members. The use of data from a commercial database, which were not developed for the express purpose of research, is considered a limitation of this study.¹⁶

OOP cost differences were most pronounced for Medicare patients, who paid approximately double for thalidomide-based therapy than for bortezomib-based therapy.

A total of 2642 treatment episodes occurred among 1900 patients with MM who were reviewed in the study; most treatments were “other” chemotherapy and radiotherapy (1759 treatment episodes, 66.6%), followed by therapy based on thalidomide (549 treatment episodes, 20.8%), bortezomib (244 treatment episodes, 9.2%), and lenalidomide (90 treatment episodes, 3.4%).¹⁶

Total adjusted patient out-of-pocket (OOP) costs (Figure 1A) for the year after treatment initiation

were significantly lower for patients treated with bortezomib-based therapy (\$3504) than for those treated with thalidomide- or lenalidomide-based therapy (\$4443 and \$4766, respectively);¹⁶ adjusted OOP costs for other therapies were \$3907.¹⁶

OOP cost differences were most pronounced for Medicare patients, who paid approximately double for thalidomide-based therapy than for bortezomib-based therapy, and approximately triple for lenalidomide-based therapy (Figure 1A).¹⁶ Thus, the orally administered novel agents thalidomide and lenalidomide did not result in a lower patient burden than IV bortezomib.¹⁶ The Medicare “doughnut hole” coverage gap accounts for the high discrepancy in OOP costs for novel agents.

The study reported no significant differences between groups in inpatient and emergency department visits during the 1-year period after treatment began. Initial analysis showed that bortezomib-based therapy was associated with significantly more total ambulatory visits and physician office visits than at least 1 other therapy, but there were no significant differences between groups on a multivariate analysis (Figure 1B).

ASCO 2009 cost guidance has stressed the need for cost-effectiveness research on cancer therapies.⁷ Helping to meet this need is a study by Wang and colleagues on the cost-effectiveness of bortezomib when

Table 2 Relative Costs and Cost-Effectiveness in Multiple Myeloma Therapy: VMP, MP, and MPT

Cost	VMP	MP	MPT	VMP-MP	VMP-MPT
On treatment	\$66,984	\$15,595	\$85,845	\$51,389	-\$18,861
Drug	\$36,758	\$725	\$50,034	\$36,033	-\$13,277
Medical	\$8940	\$826	\$4311	\$8114	\$4629
Treatment-related adverse events	\$21,286	\$14,044	\$31,499	\$7242	-\$10,213
Treatment free	\$2367	\$1371	\$2018	\$997	\$349
Progressive disease	\$3965	\$4247	\$4067	-\$281	-\$101
Second-line therapy	\$37,554	\$36,653	\$37,973	\$901	-\$419
On-treatment	\$32,760	\$33,980	\$33,069	-\$1220	-\$309
Total	\$110,870	\$57,864	\$129,902		
Cost-effectiveness, discounted outcome					
Cost	\$110,870	\$57,864	\$129,902		
Life-years	4.187	2.864	4.140		
QALYs	2.994	2.049	2.951		
Incremental cost-effectiveness ratio (vs VMP)					
Cost per life-year		\$40,051	VMP dominant		
Cost per QALY		\$56,109	VMP dominant		

MP indicates melphalan, prednisone; MPT, melphalan, prednisone, thalidomide; QALY, quality-adjusted life-year; VMP, bortezomib, melphalan, prednisone.

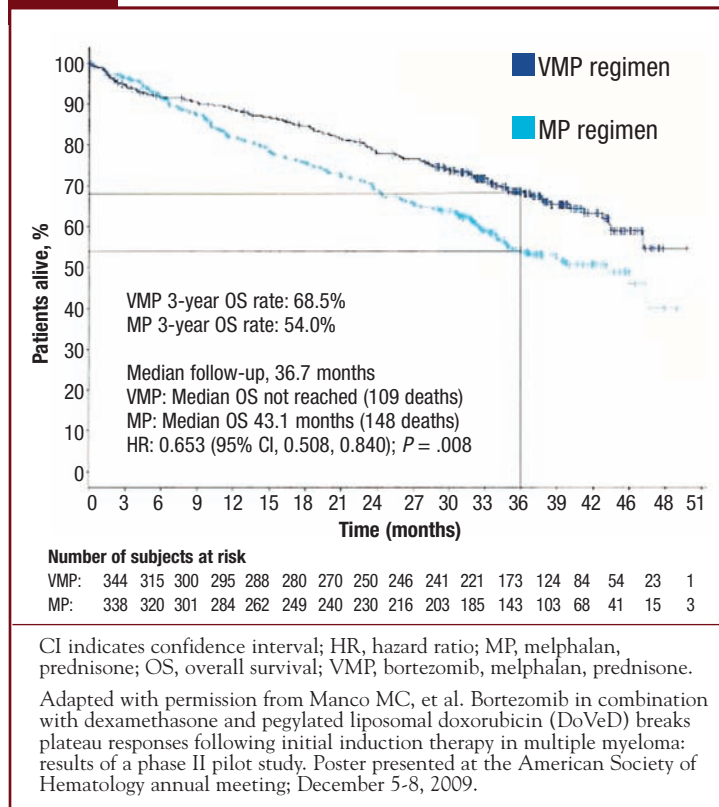
Adapted with permission from Wang S-T, et al. The cost-effectiveness of bortezomib for the initial treatment of multiple myeloma in the United States. Poster presented at the American Society of Hematology annual meeting; December 5-8, 2009.

used in initial treatment of MM.¹⁷ This research team applied a Markov cost model with US cost inputs to clinical data from 2 major trials: the Velcade as Initial Standard Treatment in Myeloma Assessment (VISTA) trial comparing bortezomib, melphalan, and prednisone (VMP) to melphalan and prednisone (MP),¹⁸ and the Intergroupe Francophone du Myélome (IFM) 99-06 trial comparing thalidomide, melphalan, and prednisone (MPT) with MP.¹⁹ Given the trials selected, cost-effectiveness comparison for VMP versus MP is direct, whereas comparison of VMP and MPT is indirect.

The findings of Wang and colleagues suggest that VMP is a cost-effective regimen in MM. Compared with MP and MPT, VMP was associated with a longer time receiving treatment in complete response. Direct, lifetime, per-patient medical costs were \$57,864 for MP, \$110,870 for VMP, and \$129,902 for MPT (Table 2). Cost calculations included per-protocol drug and medical costs, treatment-associated adverse events,

and resource utilization. Unit costs of medications and services were obtained from the published literature.^{18,19}

Drug acquisition costs for VMP were lower than for MPT (\$36,758 vs \$50,034, respectively), but the costs for either regimen were much higher than for MP alone (\$725). Medical costs and costs for treatment-related adverse events were also higher with VMP and with MPT than with MP alone. Medical costs for VMP were higher than for MPT, but the costs for treatment-related adverse events were higher with MPT. VMP and MPT provided a greater number of life-years and quality-adjusted life-years (QALYs) than MP (Table 2). As a result, investigators found that VMP has a cost of \$56,109 per QALY gained compared with MP, well within the accepted cost-effectiveness range of \$50,000 to \$100,000 per QALY gained. In addition, VMP appeared dominant over MPT as a strategy for initial therapy of MM, mainly because of a cost-savings of \$19,032 per patient

Figure 2 Confirmed Overall Survival Benefit with VMP

(17.7% lower cost) and a slightly higher average number of QALYs with VMP.

Barthelemy and colleagues suggested that the cost-effectiveness of bortezomib-based therapy may be diminished among patients scheduled to undergo ASCT.²⁰ These investigators found that compared with induction chemotherapy without bortezomib, bortezomib-based induction was associated with lower mobilization of CD34 cells during the peripheral blood

Bortezomib is a novel therapy with a strong clinical evidence base in MM. Bortezomib is approved for the treatment of MM regardless of whether the patient was previously untreated, has relapsed, or the disease is refractory to previous treatment.

stem-cell (PBSC) harvest needed to prepare for ASCT. As a result, bortezomib-based therapy produced lower daily harvest cell counts and therefore an increase in the number of days of stem-cell collection, increasing

the cost of PBSC harvest. The investigators recommended that this study of 70 patients be repeated for larger populations.

Treatment Outcomes

Bortezomib is a novel therapy with a strong clinical evidence base in MM.^{1,18,21-24} Bortezomib is approved for the treatment of MM regardless of whether the patient was previously untreated, has relapsed, or the disease is refractory to previous treatment.

New clinical research on bortezomib-based induction therapy was presented at ASH 2009; this research may contribute to the assessment of the quality of care provided by bortezomib therapy, and therefore to the value determination for the drug. A study of lenalidomide-based initial therapy in elderly patients was also presented at ASH, suggesting a therapeutic alternative.

Ludwig and colleagues conducted a phase 2 trial of bortezomib, thalidomide, and dexamethasone (VTD) versus VTD plus cyclophosphamide (VTDC) as induction therapy for ASCT-eligible patients ($n = 98$) with MM.²⁵ Overall response rates were 100% after VTD and 96% after VTDC induction treatment, with complete response rates of 51% and 44%, respectively. After a median follow-up of 9.8 months, the secondary end points of median time to progression, progression-free survival (PFS) and overall survival (OS) were not reached in either treatment arm.²⁵

Serious treatment-emergent adverse events (grade 3/4) were more common when cyclophosphamide was added to VTD; the most common adverse events in both arms were anemia, lymphocytopenia, leukopenia, constipation, and neutropenia. The addition of cyclophosphamide elevated the incidence of pyrexia, leukopenia, and lymphocytopenia; peripheral neuropathy, a known adverse effect of bortezomib and thalidomide, occurred in 35% of patients treated with VTD and in 29% of patients treated with VTDC. Stem-cell harvest was successful in both treatment arms, with an overall 100% response in both treatment arms among the subset of patients receiving high-dose chemotherapy (HDT)-ASCT. Complete response rates among patients receiving HDT-ASCT were 76% and 78% in the VTD and VTDC arms, respectively.²⁵

In a phase 2 pilot study, Manco and colleagues evaluated the effect of bortezomib plus dexamethasone and pegylated doxorubicin (DoVeD) as a second-line therapy in 34 patients previously treated with immunomodulatory drugs (thalidomide or lenalidomide).²⁶ Eligible patients were partial responders to immunomodulator therapy who had reached a plateau in their response; investigators hypothesized that DoVeD might break through the plateau and improve response.

A majority of patients (81%) experienced further reductions in tumor mass with DoVeD therapy; 42% had improvement from the plateau of partial response, including 16% achieving complete response under stringent criteria. Twenty-two patients were able to undergo stem-cell transplant. Median PFS was 39.7 months (95% confidence interval [CI], 12.1-43.0 months), with 3-year PFS reported as 57% (95% CI, 27%-73%). Median OS was not reached, but the 4-year OS rate was 83%. The most common adverse events with DoVeD were fatigue (70%), peripheral neuropathy (70%), and myopathy (42%).²⁶

Mateos and colleagues presented data from 3 years plus a follow-up to the VISTA trial that compared VMP with MP alone.²⁷ This long-term evaluation reported a significant 35% reduction in the risk of death with VMP compared with MP over a median 36.7 months of follow-up ($P = .008$; hazard ratio, 0.653) with a 3-year OS rate of 68.5% versus 54.0% for VMP and MP, respectively (Figure 2). Improvements in OS among VMP-treated patients were consistent across subgroups stratified by age, sex, race, laboratory markers (ie, beta-2 microglobulin, creatinine clearance, albumin), region, and disease staging. There was no significant difference in OS among VMP-treated patients considered high risk versus standard risk on the basis of cytogenetic profiling, although survival curves did begin to diverge for these patients at 24 to 48 months of follow-up, suggesting a trend to shorter OS for patients with high-risk cytogenetics.

Patients treated with VMP had a significantly longer time to new treatment than MP-treated patients (28.1 months vs 19.2 months, $P < .001$; hazard ratio, 0.527). On retreatment, overall responses to bortezomib-based second-line therapy were 47% in the VMP group and 53% in the MP group. Overall responses to thalidomide-based second-line therapy were 41% and 53% in the VMP and MP groups, respectively; for lenalidomide-based second-line therapy, overall responses in the VMP and MP groups were 59% and 52%, respectively. Postrelapse survival was longer in patients who received VMP, suggesting that first-line therapy with bortezomib does not confer a more treatment-resistant relapse. The safety profiles of the 2 regimens were as expected based on results from the original VISTA trial.

Palumbo and colleagues conducted a phase 3 study in 459 newly diagnosed, elderly patients with MM, comparing efficacy and safety of melphalan, prednisone, and lenalidomide (MPR) with that of MP alone.²⁸ Patients aged ≥ 65 years received 1 of 3 treatment regimens: MPR followed by lenalidomide maintenance therapy, MPR followed by placebo maintenance therapy, or MP followed by placebo maintenance therapy. The therapy

phase was followed by an open-label lenalidomide extension and a follow-up phase. All patients received aspirin 100 mg/day as thromboprophylaxis.

At a preplanned interim analysis, performed when 50% of the data had been gathered, independent central adjudication and analysis by a data monitoring committee determined that the MPR regimens demonstrated a highly significant improvement in PFS compared with MP as first-line treatment for MM. Specific interim results were not published in abstract form by the time of the ASH 2009 meeting, but the research team has suggested that MPR treatment followed by lenalidomide maintenance is an important new therapeutic option for patients older than 65 years.

MPR treatment followed by lenalidomide maintenance is an important new therapeutic option for patients older than 65 years.

Conclusion

Payers, providers, pharmacy professionals, and other healthcare stakeholders are working vigorously to define the value of care in MM. They are aided in their efforts by evidence-based guidelines, as well as the ASCO guidance on the cost of cancer care. Robust pharmacoeconomic research like that presented at the ASH 2009 meeting offers further insights on costs and cost-effectiveness considerations in the clinical and benefit design decision-making process. The many presentations from the ASH 2009 meeting indicate that therapy based on the novel agent bortezomib may be a cost-effective approach to the initial treatment of MM. ■

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Cost-Effectiveness of Evolving Treatment Regimens for Cancer Care: Implications for Decision Makers in Drug Benefit Design

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Multiple myeloma (MM) remains a challenging disease from a managed care perspective. Although this disease only accounts for a small percentage (about 1%) of all cancers, according to the American Cancer Society,¹ the costs associated with its treatment are among the highest. The management of this disease has evolved rapidly over the past several years, with increasing novel therapies and combination drug regimens that have improved patient response rates.

A study presented at the 2007 annual meeting of the American Society of Hematology showed total costs per patient per year, including prophylaxis, as ranging from \$33,966 to \$72,822.² Associated morbidities, such as anemia, bone lesions, hyperviscosity, deep-vein thrombosis, and infections, consume additional healthcare resources. If we consider the economic burden of this disease on a commercial payer, the costs of treating MM clearly surpass the costs of managing breast, prostate, or lung cancer, as well as many other cancers.³

Managed care organizations (MCOs) must gain an additional appreciation of this disease to create a cost-effective, evidence-based approach to treatment coverage. Such an approach must also take into account the burden of disease, the costs associated with its diagnosis, and the fully loaded costs of treatment (as opposed to drug-acquisition costs alone). Because of the high cost of biologic therapies in cancer treatment, we should also consider the quality-adjusted life-year (QALY) data. Using these data is an attempt on the part of organizations to show the relationship between the total cost of therapy and the health benefit achieved by using that therapy compared with not using that therapy. This approach addresses the concern that cancer-related costs are very high compared with the relatively limited health benefit achieved with various therapies.

Coverage decisions based on QALY have been largely unpopular, particularly in the United Kingdom, where the National Institute for Clinical Health and

Excellence has used this calculation to determine which products will be covered. Although the use of QALY data may be an efficient application of the tool in a country with a single-payer healthcare system, it would be very difficult to implement in the United States, where the healthcare system includes a mixture of public and private payers.

Another approach to consider in cancer care is the value-based approach. The goal is to provide enhanced access to the highest quality care at the lowest cost. Incentives must be in place for the patient and the clinician to be motivated toward preferred treatments.

Another approach to consider in cancer care is the value-based approach. In simplest terms, this is another analytical approach to quantifying costs. In MM, value-based care would consider the burden of disease, the costs of diagnostic tests, the total treatment costs (beyond drug-acquisition costs), and the availability of current evidence-based guidelines. The goal is to provide enhanced access to the highest quality care at the lowest cost. Incentives must be in place for the patient and the clinician to be motivated toward preferred treatments.

The method that MCOs most often use to assess the value of the drugs used in therapy is the formulary selection process, wherein the organization's Pharmacy & Therapeutics Committee attempts to assess the level of value that a particular agent adds to the existing drug armamentarium. This assessment is further complicated because many of the newer agents for the treatment of MM are used in combination with older agents. The introduction of newer agents and combinations of newer drugs with older agents creates significant analytical challenges for any organization that seeks to

provide access to a select group of therapies based on their cost-effectiveness. These combinations are quickly endorsed by the guidelines, which further increases the payer's financial exposure.

Understanding the total cost of therapy, and moving away from the “silo” approach, is critically important in developing a benefit that allows access and values the costs involved in drug administration, supportive care, and management of adverse effects.

The goal of the formulary is to give patients access to the most cost-effective therapies, in this case to therapies for MM. Although it is easy to calculate the annual cost of a particular combination, it is often difficult to find clinical comparative data that facilitate a thorough clinical review. In these instances, MCOs often turn to published consensus guidelines from peer-reviewed publications and organizations. These organizations refine their data as often as new evidence becomes available, and categorize their recommendations based on the level of evidence.

Such guidelines allow MCOs the opportunity to have a balanced perspective that values findings of great clinical importance, while dismissing lesser findings. They also provide stakeholders with clinical experts' analysis of various treatments. By utilizing this approach, MCOs can move toward an enhanced standardized approach to care, using a methodology to measure the quality of that care. The 2 major sources of clinical practice guidelines in oncology are the National Comprehensive Cancer Network and the American Society of Clinical Oncology. Both organi-

zations publish guidelines that address diagnosis and treatment of various cancers.

Another potential use of these guidelines is in a pre-certification-style program. In this type of program, a patient would be directed to a specific therapy based on matching the patient's clinical presentation with the treatment protocol that has shown the greatest success in treating similar patients. There is always the danger that this could turn into bureaucratic morass that impedes patient access to care; therefore, MCOs have to be very disciplined in their design of such a program. Another concern would be how to balance the ongoing administrative costs and build a positive return on investment.

Confronting issues related to the treatment of MM is only one of many barriers MCOs encounter in an effort to provide care for their members. Understanding the total cost of therapy, and moving away from the “silo” approach, is critically important in developing a benefit that allows access and values the costs involved in drug administration, supportive care, and management of adverse effects, in addition to the drug-acquisition costs. Careful application of health economic data can assist organizations in designing a benefit plan that improves outcomes, while responsibly controlling costs. The organization must also be continually assessing all the latest data and actively seeking agents that prolong survival and improve their members' quality of life. ■

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