Clinical Impact of Internet-Based Tools to Help Guide Therapeutic Decisions for Mantle Cell Lymphoma (MCL)

Kristen M. Rosenthal, PhD[1]; Christopher R. Flowers, MD[2]; Andre Goy, MD[3]; John P. Leonard, MD[4]; Julie M. Vose, MD[5];
Erik D. Brady, PhD, CHCP[1]; Jim Mortimer[1]; Kevin L. Obholz, PhD[1]; and James O. Armitage, MD[5]
1. Clinical Care Options, LLC, Reston, VA; 2. Winship Cancer Institute, Emory University School of Medicine, Atlanta, GA;
3. John Theurer Cancer Center at Hackensack University Medical Center, Hackensack, NJ; 4. Weill Cornell Medical College, New York, NY; 5. University of Nebraska Medical Center, Omaha, NE

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Background

Clinical practice guidelines are an important resource to help guide management of patients with mantle cell lymphoma (MCL). However, guidelines can be difficult to apply to individual patients, particularly when there are 2 or more treatment options with similar levels of evidence. We sought to determine whether expert recommendations for MCL treatment, delivered via an interactive, online decision support tool, would change or confirm the treatment decisions of community practitioners.

Study Components

- Online decision support tool developed in 2014; expert insights received in September 2014
  - Faculty: James O. Armitage, MD; Christopher R. Flowers, MD; Andre Goy, MD; John P. Leonard, MD; and Julie M. Vose, MD, MBA
  - The tool included 120 different MCL case variations based on specific patient/tumor characteristics, including age, fitness, histologic subtype, lactate dehydrogenase level, Ki-67 level, and any previous treatment and response
  - Tool users were prompted to enter patient/disease characteristics and indicate their intended clinical approach
  - Recommendations from the 5 experts were then displayed
  - Finally, users were asked whether the experts' recommendation confirmed or changed their intended clinical approach
- 248 clinicians input 365 different patient cases from October 2014 to November 2015
- **MCL tool online at: http://clinicaloptions.com/MCLtool**

MCL Tool Screenshots (Examples)

Entry of Patient Characteristics

Expert Recommendations

Results

Patient Cases by User Degree and Country

	Physician, %	Midlevel, %	Non-HCP, %
Overall (n = 365)	72	9	19
US (n = 112)	54	14	31
Non-US (n = 253)	80	6	14

Choice of Therapy

Number of Experts Recommending Same Treatment

Bar chart: Newly diagnosed cases (n = 72) vs Relapsed/refractory cases (n = 48)
- No Agreement: 0% / 0%
- 2 out of 5: 10% / 13%
- 3 out of 5: 23% / 35%
- 4 out of 5: 59% / 52%
- 5 out of 5: 9% / 0%
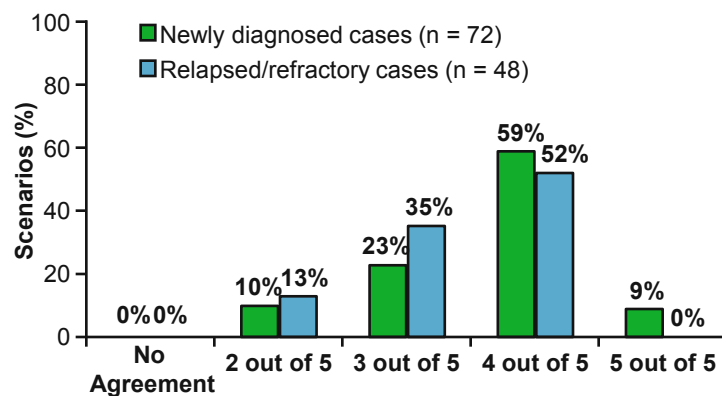
- In patients > 75 years of age, experts agree on bendamustine-R for 1st-line therapy, and 4 of 5 experts agree on ibrutinib for 2nd-line therapy, regardless of type of or response to previous therapy
- More variability occurred among experts on choice of therapy for younger or more fit patients, with 1st-line treatment ranging from bendamustine-R to R-hyperCVAD or R-CHOP/R-DHAP
- Experts selected R-CHOP in **5%** of 120 total scenarios and only in the relapsed/refractory setting; however, tool users selected R-CHOP **25%** of the time for younger, fit patients in the newly diagnosed setting
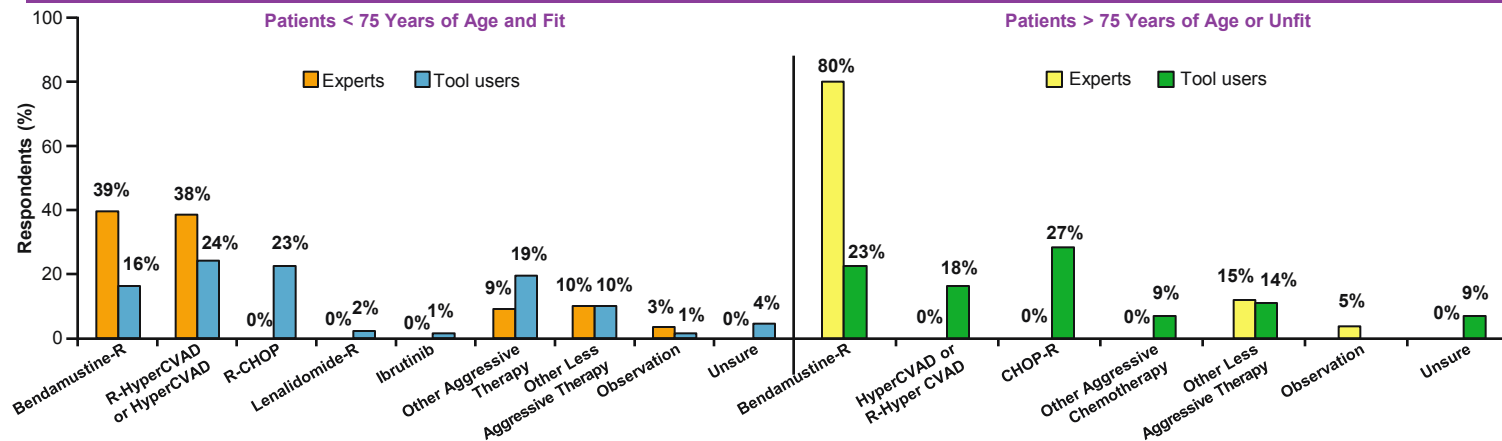
Intended Use of Tool (n = 103 respondents)

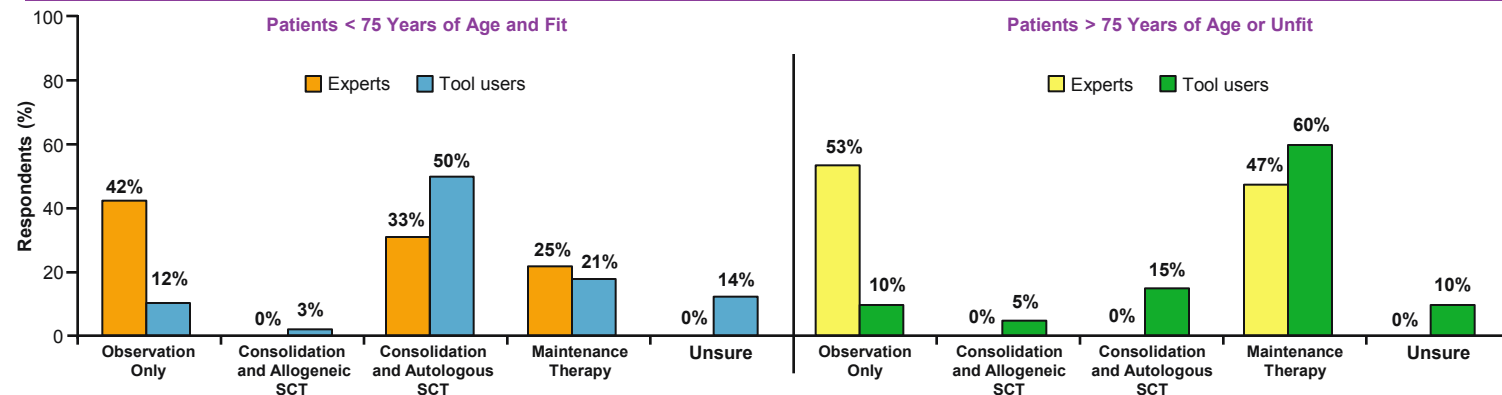|	
The patient case entered was hypothetical, % (n)	56 (58)
I was interested in recommendations for a specific patient, % (n)	44 (45)

Impact on Treatment Choice (n = 103 cases)

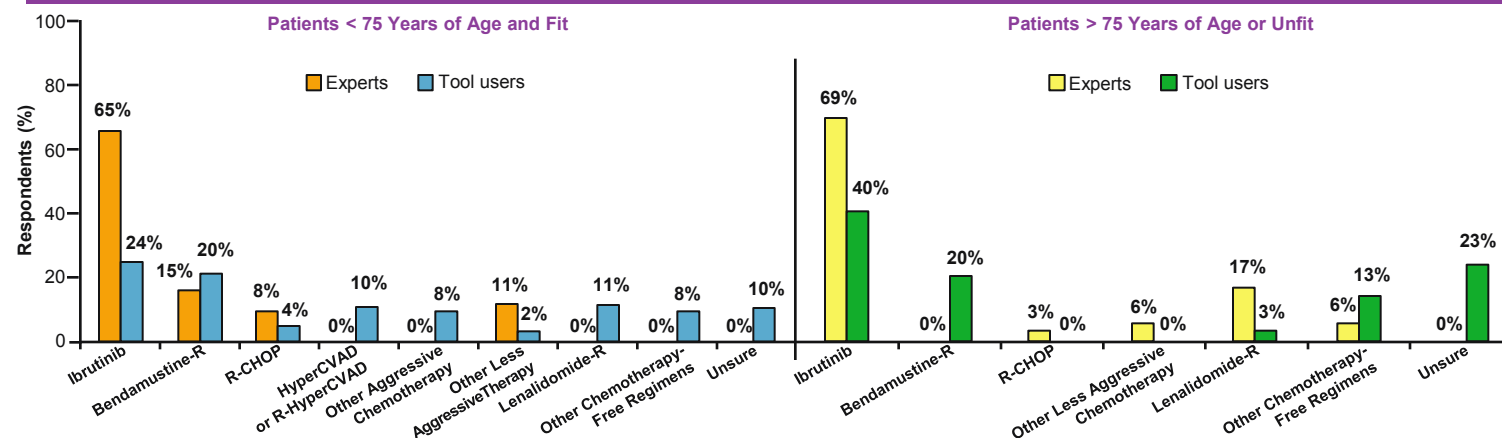|	Overall, %	Real Cases, % (n)
Changed my treatment choice to agree with experts	17	16 (7)
Confirmed my treatment choice	56	53 (24)
I am still undecided on what treatment to use	8	2 (1)
I agree with the experts, but there are barriers to implementing their recommendations	18	29 (13)

Newly Diagnosed MCL

Patients < 75 Years of Age and Fit — Experts vs Tool users
- Bendamustine-R: 39% / 16%
- R-HyperCVAD or HyperCVAD: 38% / 24%
- R-CHOP: 0% / 23%
- Lenalidomide-R: 0% / 2%
- Ibrutinib: 0% / 1%
- Other Aggressive Therapy: 9% / 19%
- Other Less Aggressive Therapy: 10% / 10%
- Observation: 3% / 1%
- Unsure: 0% / 4%

Patients > 75 Years of Age or Unfit — Experts vs Tool users
- Bendamustine-R: 80% / 23%
- HyperCVAD or R-Hyper CVAD: 0% / 18%
- CHOP-R: 27% / 0%
- Other Aggressive Chemotherapy: 0% / 9%
- Other Less Aggressive Therapy: 15% / 14%
- Observation: 5% / 0%
- Unsure: 0% / 9%

Maintenance/Consolidation Treatment

Patients < 75 Years of Age and Fit — Experts vs Tool users
- Observation Only: 42% / 12%
- Consolidation and Allogenic SCT: 0% / 3%
- Consolidation and Autologous SCT: 33% / 50%
- Maintenance Therapy: 25% / 21%
- Unsure: 0% / 14%

Patients > 75 Years of Age or Unfit — Experts vs Tool users
- Observation Only: 53% / 10%
- Consolidation and Allogenic SCT: 0% / 5%
- Consolidation and Autologous SCT: 0% / 15%
- Maintenance Therapy: 47% / 60%
- Unsure: 0% / 10%

Relapsed/Refractory MCL

Patients < 75 Years of Age and Fit — Experts vs Tool users
- Ibrutinib: 65% / 24%
- Bendamustine-R: 15% / 20%
- R-CHOP: 8% / 4%
- HyperCVAD or R-HyperCVAD: 0% / 10%
- Other Aggressive Chemotherapy: 0% / 8%
- Other Less Aggressive Therapy: 11% / 2%
- Lenalidomide-R: 0% / 11%
- Other Chemotherapy-Free Regimens: 0% / 8%
- Unsure: 0% / 10%

Patients > 75 Years of Age or Unfit — Experts vs Tool users
- Ibrutinib: 69% / 40%
- Bendamustine-R: 0% / 20%
- R-CHOP: 3% / 0%
- Other Less Aggressive Chemotherapy: 6% / 0%
- Lenalidomide-R: 17% / 3%
- Other Chemotherapy-Free Regimens: 6% / 13%
- Unsure: 0% / 23%

Conclusions

- Expert consensus on bendamustine-R for older patients with newly diagnosed MCL and ibrutinib for relapsed/refractory disease; more disagreement among experts for younger, more fit patients
- Treatment choices were more varied in both the newly diagnosed and relapsed/refractory setting for users of the online tool, and 10% to 23% of users indicated that they were unsure of optimal treatment approaches for patients with R/R MCL
- This tool either confirmed or changed the user's intended clinical approach in 76% of cases
- Viewing the expert insights led to a planned treatment change in 17% of cases in which users indicated they were seeking advice for a real patient
- Online tools providing customized, patient-specific expert advice may increase the number of clinicians making optimal treatment decisions for MCL