Varian Between Experts and Oncology Healthcare Providers in Managing Polycythemia Vera and Myelofibrosis: Analysis of an Online Treatment Decision Support Tool

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Background
The management of patients with Philadelphia chromosome-negative myeloproliferative neoplasms (MPNs) polycythemia vera (PV) and myelofibrosis (MF) is evolving. US treatment guidelines for PV and MF were only recently published, and many clinicians still face substantial challenges in selecting therapy for patients with these MPNs. To assist with patient care and to help healthcare providers (HCPs) make informed decisions, an online treatment decision support tool for PV and MF was developed.

In this study, cases entered into the tool by HCPs were analyzed to determine:
- Variance between the planned treatment of HCPs using the tool and recommendations from MPN experts
- Impact of the tool on the subsequent treatment decisions of those who used it

Tool Design and Planned Analysis
The online decision support tool was developed by 5 MPN experts and included unique case variations based on factors experts considered important for treatment selection for patients with PV or MF, including the presence of disease symptoms, hematologic laboratory findings, and treatment history.
- Experts: Michael W. Deininger, MD, PhD; John Mancarenas, MD; Ruben A. Mesa, MD; Brady L. Stein, MD, MHS; Srdan Verstovsek, MD, PhD
- Expert recommendations were compiled in February 2017
- In using the tool, HCPs were prompted to enter patient/disease information from pull-down menus and then indicate their intended clinical approach.
- Recommendations from the 5 experts were then displayed.
- HCPs were asked whether the expert recommendations confirmed or changed their intended clinical approach.
- Tool available online at: clinicaloptions.com/MPNTool

Characteristics of Cases Entered by HCPs

<table>
<thead>
<tr>
<th>Diagnosis</th>
<th>Cases, n/N (%)</th>
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</thead>
<tbody>
<tr>
<td>PV</td>
<td>200/421 (48)</td>
</tr>
<tr>
<td>MF</td>
<td>221/421 (52)</td>
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</tbody>
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PV cases
- Intolerance or inadequate response to HU 98/184 (53)
- No intolerance or inadequate response to HU 86/184 (47)
  - Low risk (< 60 years of age, no prior thrombotic event) 41/81 (51)
  - High risk (> 60 years of age and/or prior thrombotic event) 40/81 (49)

MF cases
- Low/intermediate-1 risk 95/207 (46)
- Intermediate-2/high risk 112/207 (54)

Use of the Tool and Impact on Treatment Plan

<table>
<thead>
<tr>
<th>Intended Use of Tool (n = 85)</th>
<th>Cases, %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specific patient in my clinical practice</td>
<td>44</td>
</tr>
<tr>
<td>Hypothetical patient case</td>
<td>56</td>
</tr>
</tbody>
</table>

Impact of Tool on Practice (n = 85)

| Changed management plans | 41 |

Conclusions
- Analysis of an online treatment decision support tool for PV and MF revealed significant variance between expert recommendations and intended treatment of HCPs.
- For patients with PV:
  - Experts are more likely to consider pegIFN for first-line treatment of patients at high risk for thrombosis.
  - Compared with expert recommendations, many HCPs would overtreat patients at low risk for thrombosis and underuse ruxolitinib and pegIFN for patients with prior intolerance/inadequate response to HU.
- For patients with MF:
  - Compared with expert recommendations, many HCPs would overtreat asymptomatic low/intermediate-1—risk patients.
  - Experts are more likely to recommend ruxolitinib for many higher-risk patients vs HCPs.
- Use of the tool had a positive impact on practice:
  - Expert recommendations changed the original management plans or confirmed the planned treatment approach for 82% of HCPs.
- Online tools that provide customized, patient-specific expert advice can increase the number of clinicians who make optimal treatment decisions for patients with PV and MF.

Acknowledgments and Disclosures
This tool was developed in a GME-certified program supported by an unrestricted educational grant from Incyte.

Ryan P. Topping, PhD; Jason J. Everly, PharmD; and Kevin L. Obholz, PhD, have no real or apparent conflicts of interest to report. Michael W. Deininger, MD, PhD, has disclosed that he has received consulting fees from Ariad, CTI Biopharma, Galena Biopharma, Incyte, and Novartis and travel for research support from Bristol-Myers Squibb; Galena Sciences, Novartis, and Pfizer. John Mancarenas, MD, has disclosed that he has received consulting fees from Ariad and Novartis and travel for research support from CTI Biopharma, Galena Sciences, and Incyte. Brady L. Stein, MD, MHS, has disclosed that he has received consulting fees from Incyte and Bristol-Myers Squibb; Galena Sciences, and Incyte. Kevin L. Obholz, PhD, has disclosed that he has received consulting fees from Incyte, Bristol-Myers Squibb, Galena Biopharma, Genentech, and Gilead Sciences; Incyte; Lilly Oncology; NS Pharma; Pfizer; Promedica, Roche; and Saddleback Genetics.