Analysis of an Online Tool to Explore Evolving Practice Patterns in Renal Cell Carcinoma

CLINICAL CARE OPTIONS® ONCOLOGY

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Background

The complex and rapidly evolving treatment landscape for advanced renal cell carcinoma (RCC) poses significant challenges for treatment decision making. What is the best first-line therapy today? What is the best second-line therapy in a patient with TKI-refractory RCC? Given the multitude of options for first-line and subsequent-line therapies available today, these are important questions for healthcare providers (HCPs) who are making these decisions that can have an impact on patient outcomes.

In 2016, 5 RCC experts developed an interactive, online RCC decision support tool, in which HCPs entered RCC cases along with their treatment decisions. The tool reported treatment recommendations of the 5 RCC experts based on the key clinical factors. Nearly 500 cases entered by more than 300 HCPs were analyzed to explore practice patterns in RCC and to determine areas of agreement and difference in the first-line and second-line treatment recommendations compared with the 5 RCC experts. HCPs and the RCC experts generally agreed on sunitinib or pazopanib for first-line therapy for metastatic RCC, but there was substantial variation for all subsequent lines of therapy.

Since the tool was developed, multiple new agents, including nivolumab, cabozantinib, and lenvatinib/everolimus, have received regulatory approval for the treatment of advanced RCC, and multiple phase III clinical trials of novel therapies are ongoing, with promising results from phase I/II clinical trials. Given that the changes in the treatment landscape are leading to greater complexity than ever, we recreated the RCC decision support tool in 2017 to explore changes in practice patterns compared with 2016.

CCO Decision Support Tool for RCC

- Interactive, online decision support tool was developed by RCC experts:
  - 2017 tool: Thomas Hutson, Won Kim, Robert Motzer, Elizabeth Plimack, Brian Rini
  - 2016 tool: Toni Choueri, Thomas Hutson, Robert Motzer, Brian Rini, Charles Ryan
- Key clinical factors used in the support tool included histology, risk status, performance status, and prior therapies
- Using the tool:
  - HCPs enter cases, selecting the key clinical factors via pull-down menus
  - Users then submit their planned treatment approach
  - The tool displays the treatment recommendations of each of the 5 experts based on the key clinical factors; recommendations were based on clinical guidelines, available evidence, and experts' opinions at the time
  - Users are asked whether the expert recommendations confirmed or changed their intended clinical approach (clinical impact)
- 680 cases were entered by 420 HCPs between March 2017 and Sept 2017 (see Tables 1A and 1B); 470 cases entered in 2017 (data not shown)
- Tool online at: http://clinicaloptions.com/RCCTool

Results

User (HCPs) Demographics

- Approximately 81% of users were medical oncologists
- Approximately 25% of users were US based
  - Top 5 highest: US, India, Italy, United Kingdom, Spain

Case Demographics, 2017

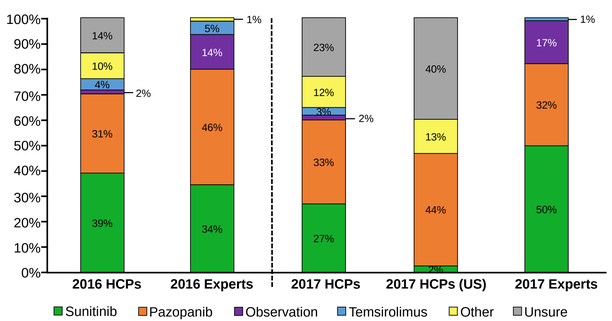
Table 1A. Cases Entered Into 2017 Tool, by Line of Therapy

Line of therapy	n (%; N = 680)
Treatment naive (first line)	304 (45)
After first-line TKI (second line)	271 (40)
Third line	105 (15)

Table 1B. Treatment-Naive Cases Entered Into 2017 Tool, by MSKCC Risk

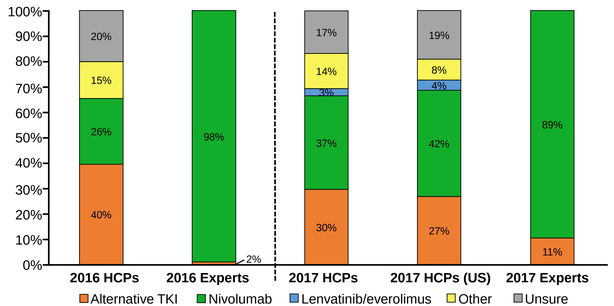
MSKCC Risk Status	n (%; N = 304)
Favorable	112 (37)
Intermediate	142 (48)
Poor	50 (16)

FIRST-LINE THERAPY



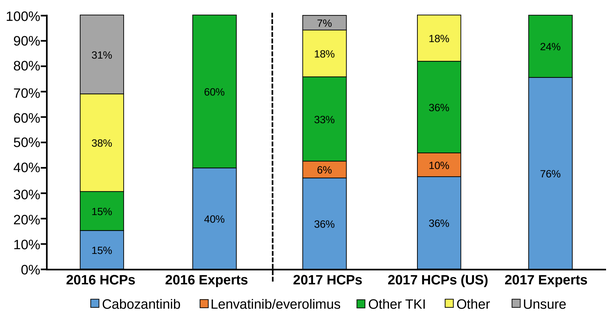
In 2016 and 2017, 65% of HCPs, compared with 81% of the experts, selected sunitinib or pazopanib as first-line therapy (*P* = .0014)

SECOND-LINE THERAPY (After 1st-Line TKI)



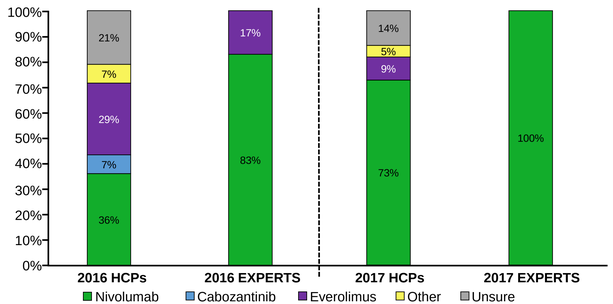
After first-line TKI therapy, experts more often selected nivolumab as second-line therapy compared with HCPs (2016: 98% vs 26%, *P* < .0001; 2017: 89% vs 37%, *P* < .0001). There was a slight increase in HCPs using nivolumab in the second-line setting in 2017 compared with 2016.

THIRD-LINE THERAPY (1st TKI, 2nd Nivolumab)



There were significant changes in practice patterns for both HCPs and experts for third-line therapy following a first-line TKI and second-line nivolumab between 2016 and 2017. In 2017, experts selected cabozantinib in 76% of cases compared with 40% in 2016. In 2017, 69% of HCPs selected a TKI as third-line therapy compared with only 30% in 2016.

THIRD-LINE THERAPY (1st TKI, 2nd Axitinib)

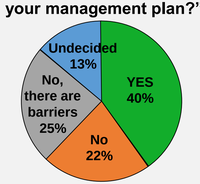


Nearly all experts in 2016 and 2017 selected nivolumab as third-line therapy following a first-line TKI and second-line axitinib. The proportion of HCPs selecting nivolumab as third-line therapy increased from 36% in 2016 vs 73% in 2017.

CLINICAL IMPACT

- 220 users answered the clinical impact questions in 2017
  - Overall, 46% of HCP users who differed in their treatment selection from expert recommendations indicated that the tool changed their intended treatment

HCPs who differed from experts in their treatment selection for second-line therapy after first-line TKI: "Did the expert recommendations change your management plan?"



Conclusions

- Practice patterns are changing rapidly in response to the evolving treatment landscape in advanced RCC
- Practice patterns between HCPs and RCC experts differed substantially in patients following first-line TKI therapy
- This online decision tool reveals significant and clinically relevant gaps between expert consensus and treatment decisions made by HCPs treating patients with RCC
- Given that the expert recommendations often changed an HCP's treatment plan, the potential of an online tool to improve clinical outcomes in advanced RCC warrants further investigation

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