Sequencing of Nivolumab-ipilimumab Combination Therapy and Targeted Systemic Therapies for the Treatment of Metastatic Renal Cell Carcinoma: Clinical Effectiveness and Cost-Effectiveness

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Acknowledgments:

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About CADTH: CADTH is an independent, not-for-profit organization responsible for providing Canada’s health care decision-makers with objective evidence to help make informed decisions about the optimal use of drugs, medical devices, diagnostics, and procedures in our health care system.
Research Questions

1. What is the clinical evidence regarding the use of targeted systemic therapies after progression on nivolumab-ipilimumab combination therapy for the treatment of metastatic renal cell carcinoma in patients who are deemed intermediate or poor risk?

2. What is the clinical evidence regarding the use of nivolumab-ipilimumab combination therapy after progression on targeted systemic for the treatment of metastatic renal cell carcinoma in patients who are deemed intermediate or poor risk?

3. What is the cost-effectiveness of targeted systemic therapies after progression on nivolumab-ipilimumab combination therapy for the treatment of metastatic renal cell carcinoma in patients who are deemed intermediate or poor risk?

4. What is the cost-effectiveness of nivolumab-ipilimumab combination therapy after progression on targeted systemic therapies for the treatment of metastatic renal cell carcinoma in patients who are deemed intermediate or poor risk?

Key Findings

Two systematic reviews, two randomized controlled trials, and three non-randomized studies were identified regarding sequencing of Nivolumab-ipilimumab combination therapy and targeted systemic therapies for the treatment of metastatic renal cell carcinoma.

Methods

A limited literature search was conducted on key resources including Ovid Medline, Embase, PubMed, The Cochrane Library, University of York Centre for Reviews and Dissemination (CRD) databases and a focused Internet search. No methodological filters were applied to limit retrieval by publication type. The search was limited to English language documents published between January 1, 2013 and July 11, 2018.

Selection Criteria

One reviewer screened citations and selected studies based on the inclusion criteria presented in Table 1.

Table 1: Selection Criteria

<p>| Population | Intermediate/poor risk patients with advanced or metastatic renal cell carcinoma (mRCC) Q1: who have failed/progressed on nivolumab-ipilimumab therapy (this is a type of immunotherapy) |</p>
<table>
<thead>
<tr>
<th><strong>Q2:</strong> who have failed/progressed on systemic therapies (TKIs or mTOR inhibitors)</th>
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<tr>
<td><strong>Intervention</strong></td>
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<td>Q1: Targeted systemic pharmacotherapies: with tyrosine kinase inhibitors (TKIs) axitinib, pazopanib, sunitinib, sorafenib, cabozantinib, or lenvatinib, or with mechanistic target of rapamycin inhibitors (mTOR) inhibitors (everolimus, temsirolimus).</td>
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<td>Q2: Combination immunotherapy with ipilimumab and nivolumab</td>
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<td><strong>Comparator</strong></td>
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<td><strong>Outcomes</strong></td>
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<tr>
<td>Q1. Q2. Clinical Effectiveness (including overall survival, progression-free survival, health-related quality of life; response rates) Treatment Duration Safety (including adverse events, discontinuation for any reason) Q3. Q4.: Cost-effectiveness</td>
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<tr>
<td><strong>Study Designs</strong></td>
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<td>Health technology assessments, systematic reviews, meta-analyses, randomized controlled trials, non-randomized studies, economic evaluations</td>
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**Results**

Rapid Response reports are organized so that the higher quality evidence is presented first. Therefore, health technology assessment reports, systematic reviews, and meta-analyses are presented first. These are followed by randomized controlled trials, non-randomized studies, and economic evaluations.

Two systematic reviews, two randomized controlled trials, and three non-randomized studies were identified for sequencing of nivolumab-ipilimumab combination therapy and targeted systemic therapies for the treatment of metastatic renal cell carcinoma.

Additional references of potential interest are provided in the appendix.

**Health Technology Assessments**

No Literature Identified

**Systematic Reviews and Meta-analyses**


Randomized Controlled Trials


Non-Randomized Studies


Economic Evaluations

No literature identified.
Appendix — Further Information

Previous CADTH Reports


Meta-analysis - Metastatic Renal Cell Carcinoma Not Specified


Randomized Controlled Trials - Ongoing Clinical Trials


Review Articles


Additional References - Metastatic Renal Cell Carcinoma Not Specified in Title or Abstract


