Metastatic Renal Cell Carcinoma (mRCC) treatment: a comparison between public and private institutions in Brazil

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Disclosures

I have nothing to disclose.
Introduction: frequency of RCC USA / Brazil

USA estimative - 2017
- 63,000 cases
- 3.8% of all new cancer cases
- Among the 10 most frequently diagnosed
- Almost twice in men than in women

Brazil estimative 2016-2017:
- National Cancer Institute (INCA) → high % of "ill-defined causes"
Sequential use of targeted therapies mRCC - USA

Patterns of care among patients receiving sequential targeted therapies for advanced renal cell carcinoma: A retrospective chart review in the USA

1st TT
- TKI
  - Sunitinib: n = 1,173 (100%)
  - Sorafenib: n = 869 (74.1%)
  - Pazopanib: n = 133 (11.3%)
  - Axitinib: n = 16 (1.4%)

2nd TT
- TKI
  - Sunitinib: n = 637 (54.3%)
  - Sorafenib: n = 256 (21.8%)
  - Pazopanib: n = 165 (14.1%)
  - Axitinib: n = 127 (10.8%)

- mTOR Inhibitor
  - Everolimus: n = 326 (27.8%)
  - Temsirolimus: n = 210 (17.9%)

3rd TT
- No Subsequent Treatment
  - n = 564 (88.5%)
- Still on 2nd TT
  - n = 330 (51.8%)
- Died on 2nd TT
  - n = 87 (13.7%)
- No 3rd TT
  - n = 147 (23.1%)

TKI
- Sunitinib: n = 20 (3.1%)
- Sorafenib: n = 6 (0.9%)
- Pazopanib: n = 2 (0.3%)
- Bevacizumab: n = 3 (0.5%)
- Axitinib: n = 5 (0.8%)

mTOR Inhibitor
- Everolimus: n = 40 (6.3%)
- Temsirolimus: n = 11 (1.7%)

mTOR Inhibitor
- Everolimus: n = 3 (0.6%)
- Temsirolimus: n = 2 (0.4%)

mTOR Inhibitor
- Everolimus: n = 60 (11.2%)
- Temsirolimus: n = 10 (1.9%)
- Bevacizumab: n = 11 (2.1%)
- Axitinib: n = 30 (5.6%)

No Subsequent Treatment
- n = 461 (88.0%)
- Still on 2nd TT
  - n = 221 (41.2%)
- Died on 2nd TT
  - n = 101 (18.8%)
- No 3rd TT
  - n = 139 (25.9%)

Rates of attrition between

- 1\textsuperscript{st} and 2\textsuperscript{nd} line therapy
- 2\textsuperscript{nd} and 3\textsuperscript{rd} line therapy

Brazilian cohort vs IMDC

Brazilian data versus Daniel Heng International Metastatic Database Consortium (IMDC) dataset
Antiquated or unconventional regimens

- Targeted therapies
- Chemotherapy
Aim of this study:

Formal comparison of non-standard therapies utilization by institutional type

Objective

• Public institutions
  • “universal”
  • 70-80% of all health care delivery in Brazil

• Private institutions
  • Insurance (~30%)
  • Rare patients who can afford
Methods

Commercial Database: *Close-Up International*®

Research strategy
- 2000 physicians contacted (15% Response Rate)
- Data are audited and confirmed by research staff before entry database

Methods
- Data were collected pertaining to
  - Demographics
  - Histology
  - Heng risk
  - Systemic therapy
- Time-frame: 2013-2016

Statistical analysis
- The z-test was used to compare two independent proportions:
  - standard vs non-standard tx in
  - private vs public institutions.
## Results – Patients characteristics

<table>
<thead>
<tr>
<th>Overall Cohort</th>
<th></th>
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<tbody>
<tr>
<td>n</td>
<td>4,379</td>
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<tr>
<td>Age, median (range)</td>
<td>59.5</td>
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<tr>
<td></td>
<td>(13-98)</td>
</tr>
<tr>
<td>Female</td>
<td>1418</td>
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<tr>
<td></td>
<td>(32%)</td>
</tr>
<tr>
<td>Male</td>
<td>2961</td>
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<tr>
<td></td>
<td>(68%)</td>
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<td>Histology</td>
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<td>Clear cell</td>
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<td>(80%)</td>
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<tr>
<td>Non-clear cell</td>
<td>248</td>
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<tr>
<td></td>
<td>(5.5%)</td>
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<tr>
<td>Unknown</td>
<td>635</td>
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<tr>
<td></td>
<td>(14.5%)</td>
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<tr>
<td>Heng Risk</td>
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<td>Good Risk</td>
<td>928</td>
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<td>(26%)</td>
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<tr>
<td>Intermediate Risk</td>
<td>1,670</td>
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<tr>
<td></td>
<td>(48%)</td>
</tr>
<tr>
<td>Poor Risk</td>
<td>908</td>
</tr>
<tr>
<td></td>
<td>(26%)</td>
</tr>
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</table>
Results: Sequential use of targeted therapies mRCC - Brazil

1st TT n=3149 (91.1%)
- TKI n=2717 (86%)
  - Sunitinib n=1777 (56.5%)
  - Pazopanib n=867 (27.5%)
  - Sorafenib n=73 (2.3%)
  - Axitinib: n=0

2nd TT n=641 (20.4%)
- TKI n=285 (44.5%)
  - Sorafenib: 104 (15.8%)
  - Pazopanib: 101 (16.2%)
  - Sunitinib: 77 (12%)
  - Axitinib: 3 (0.5%)

3rd TT n=152 (4.8%)
- TKI n=51 (33.5%)
  - Sunitinib n=27 (18%)
  - Sorafenib n=25 (16.5%)
  - Pazopanib n=20 (13%)

mTOR Inhibitor n=297 (46.5%)
- Everolimus n=249 (39%)
- Temsirolimus n=48 (7.5%)

mTOR inhibitor n=192 (6%)
- Everolimus: 29 (1%)
- Temsirolimus n=163 (5%)

Other n=240 (7.5%)
Other n=59 (9%)
Other n=19 (12.5%)
Results:
Standard therapies (STx) - Comparative analysis

Private institutions (PRI) vs Public (PUB)

First line setting (1 L)
PRI 96% vs PUB 89%, p=0.0001

Second line setting (2L)
PRI 97% vs PUB 90%, p=0.0002
Comparative analysis in **first line** therapy

- classes of drugs
- Public + Private institutions
Results: Non-Standard therapies – Second Line

Comparative analysis in second line therapy
- classes of drugs
- Public + Private institutions

n=32

Chemotherapy
- Bleomycin
- Gemcitabine
- Paclitaxel
- Vinflunine
- Carboplatin / Cyclophosphamide / Doxorubicin / Etoposide
- Fluorouracil / Vinblastine
- Doxorubicin / Gemcitabine
- Pemetrexed
- Cyclophosphamide / Vinblastine
- Carboplatin / Etoposide / Ifosfamide
- Carboplatin / Irinotecan
- Cisplatin / Gemcitabine
- Cisplatin / Etoposide
- Eribulin
- Vinblastine

Targeted Therapy
- Erlotinib

Interferon alpha

IFN Targeted Therapy Chemotherapy

72% 6% 23%
Conclusion

Brazil - representative developing country

- Patients at public institutions are more likely to be offered non-standard treatment options for mRCC
- Many non-standard therapies utilized have limited supportive data in mRCC

Underlying the observed practice patterns may be:

- Financial barriers
- Educational gaps should also be explored and addressed.
Brazil - representative developing country

- Patients at public institutions are more likely to be offered non-standard treatment options for mRCC
- Many non-standard therapies utilized have limited supportive data in mRCC

Underlying the observed practice patterns may be:
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- Educational gaps should also be explored and addressed.
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