Transition to Palliative Care for People with Metastatic Prostate Cancer & their Caregivers: A Population Cohort Study

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Background

Metastatic prostate cancer (mPCa) associated with significant morbidity for individuals and healthcare system

- Second leading cause of cancer death in males
- Median survival after refractory mPCa < 18 mths for those treated with docetaxel-based chemotherapy (1)
- Associated with significant healthcare expenditure, with 60% of total costs occurring in last 6 months of life (2)
- Few studies (small samples n <280) on the specific palliative care needs and access to services by men with mPCa

Background

Increasing evidence of benefits associated with palliative care

✓ **Patients:** improved symptom relief, QOL, mood, communication, satisfaction with care, survival

✓ **Carers:** improved QOL, mood & bereavement outcome

✓ **Health system:** reduced aggressive EOL care and ED presentation, increased deaths outside hospital

Background

Variability in access to palliative care

• Several barriers associated with PC introduction
  Both patient & health system factors

• Variable engagement with PC
  Access rates \( \sim 30 - 70\% \) (1-2)

• Often late engagement
  Median time to death = 22 – 42 days (3-4)

• Current ‘needs-based’ models of PC delivery
  Can lead to late or ad-hoc referral

Background

Timeliness of referral important to achieve benefits

- Perception of being referred “too late” associated with higher unmet needs/reported concerns, & lower satisfaction (1)
- PC referral (IP &/or OP setting) > 1-3 months associated with fewer: ED visits, hospitalisations, hospital deaths (2-4)
- Hospital PC consultation within 6 days of admission reduces overall costs by 14% (−$1,312) (5)
- PC referral within 30-60 days of adv. dx: improved 1-year survival (15% difference compared to 3-mth waitlist control) (6) and improved caregiver mood (7)

Aims

To describe the illness trajectory of people who die from metastatic prostate cancer (mPCA), with a view to identify transition points for optimal integration of palliative care.

⇒ Health service use

⇒ Disease- and treatment- related complications

⇒ Diagnostic & therapeutic procedures

⇒ Quality end-of-life care characteristics
Design

Mixed Method Study

1. **Population cohort study:** using 10 years of linked hospital, emergency and death data.

2. **Qualitative study:** interviews with patients, current/bereaved caregivers and health professionals.

3. **Delphi study:** set of recommended points drafted by a core group will be subjected to a two-round online survey of experts to build systematic consensus.

⇒ **Leading to guidelines on integration of palliative care in advanced cancer**
Method


DATA SOURCES

Unique identifiers
Inpatient data: VAED
ED data: VEMD
Victorian Death Index

First admission with metastatic disease

Washout period (3 years)

Site A
Site B
Site B

Hospital admissions in Victoria from 2000 - 2010

Diagnoses (ICD-10AM)
Procedures (ACHI)
Service utilisation

Victorian Death Index

Method

Results

- Description of the cohort (N = 4,436)
  - 64% Australian born
  - 91% ≥ 65 years
  - 49% living in major city
  - 76% partnered
  - 53% utilised some private health insurance

- At first admission:
  - 28% Charlson comorbidity index >1
  - 84% had mets to bone, 11% lymph nodes, 8% lung, 8% liver; 19% had ≥ 2 metastatic sites
Results

Health Service Use

First admission with metastatic disease

61% ED Presentation
- Median 1 ED Presentation (IQR 0,2)
- Median 3 admissions (IQR 1, 9)
- Median total 35 bed days (IQR 18, 63)

Median survival after admission
- 4 months (1, 12)

25% presented at same-day admission

77% died in hospital:
- 55% acute
- 42% PC
## Results

### Treatment- or disease- related complications

**Across metastatic illness trajectory:**

<table>
<thead>
<tr>
<th>Diagnoses</th>
<th>Inpatient procedures</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Median 5 complications (3, 8)</strong></td>
<td><em>73% therapeutic procedure</em></td>
</tr>
<tr>
<td>33% ≥ 7 complications</td>
<td><em>45% ≥ 2 procedures</em></td>
</tr>
<tr>
<td>- LUTS (50%)</td>
<td>- Blood transfusions (48%)</td>
</tr>
<tr>
<td>- Infections (52%)</td>
<td>- Chemotherapy (38%)</td>
</tr>
<tr>
<td>- Anaemia (43%)</td>
<td>- Local procedures (27%)</td>
</tr>
<tr>
<td>- Skeletal events (21%)</td>
<td>eg. TURP (11%)</td>
</tr>
<tr>
<td>- Constipation (32%)</td>
<td>- Radiotherapy (16%)</td>
</tr>
</tbody>
</table>
Results

Palliative Care Engagement

- 60% of men received palliative approach to care PC, 39% accessed PC bed

First admission with metastatic disease

For 64%, PC approach first initiated in final admission

Death

Median survival after admission: 4 months (1, 12)

Median 1 mth: (0.4, 2.5)

Median 2 mths: (0, 10)

Median 4 admissions: (2, 9)

11 PC bed days: (5, 22)

60% of men received palliative approach to care PC, 39% accessed PC bed.
### Results

#### Indicators of Quality End of Life Care*

<table>
<thead>
<tr>
<th>Aggressiveness of care (last 30 days of life)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt; 1 ED presentation</td>
<td>311 (7)</td>
</tr>
<tr>
<td>&gt; 1 acute hospital admission</td>
<td>2,124 (48)</td>
</tr>
<tr>
<td>Length of stay ≥14 days</td>
<td>2,451 (55)</td>
</tr>
<tr>
<td>Intensive care admission</td>
<td>90 (2)</td>
</tr>
<tr>
<td>Chemistry in last 14 days of life</td>
<td>527 (12)</td>
</tr>
<tr>
<td>At least one indicator</td>
<td>3,685 (83)</td>
</tr>
<tr>
<td>≥ 2 indicators</td>
<td>1,464 (33)</td>
</tr>
</tbody>
</table>

Summary of Results

• Patients with mPCA experience high symptom burden, undergo multiple therapeutic interventions and have several admissions

• While 60% have a palliative approach to care in place by death, this is initiated by most (64%) in the final admission, a median of just 1 month prior to death

• Multi-day admission with metastatic disease is itself an important flag to initiate palliative care supports, if not already in place
Discussion & Future Work

• Population level data important source to capture statewide health service outcomes relating to delivery of quality care

• Data not without limitations – e.g. ideal to link to community data & routine recording of more specific palliative care referral and service information

• Interviews with consumers and other important stakeholders for more in-depth exploration currently underway

• Results expected to inform recommendations surrounding routine integration of palliative care, for inclusion in guideline document
Questions?

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## Results

### Indicators of Poor Survival, Cox Proportional Hazards Model

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Hazard Ratio (95% Confidence Interval)</th>
<th>p Value*</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age (years)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt; 65</td>
<td>0.58 (0.52 – 0.65)</td>
<td>&lt;0.001*</td>
</tr>
<tr>
<td>65-74</td>
<td>0.69 (0.64 – 0.74)</td>
<td>&lt;0.001*</td>
</tr>
<tr>
<td>75 +</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td><strong>SEIFA index of economic disadvantage</strong></td>
<td>0.95 (0.93 – 0.97)</td>
<td>0.001*</td>
</tr>
<tr>
<td><strong>Multi-day admission</strong></td>
<td>1.34 (1.20 – 1.50)</td>
<td>&lt;0.001*</td>
</tr>
<tr>
<td><strong>Renal failure</strong></td>
<td>1.21 (1.10 – 1.32)</td>
<td>&lt;0.001*</td>
</tr>
<tr>
<td><strong>Metastasis to liver</strong></td>
<td>1.98 (1.77 – 2.21)</td>
<td>&lt;0.001*</td>
</tr>
<tr>
<td><strong>Metastasis to brain</strong></td>
<td>1.49 (1.25 – 1.78)</td>
<td>&lt;0.001*</td>
</tr>
<tr>
<td><strong>Metastasis to lung</strong></td>
<td>1.33 (1.19 – 1.48)</td>
<td>&lt;0.001*</td>
</tr>
<tr>
<td><strong>Metastasis to lymph nodes</strong></td>
<td>0.86 (0.78 – 0.95)</td>
<td>0.003*</td>
</tr>
<tr>
<td><strong>Receipt of antineoplastic agent</strong></td>
<td>0.87 (0.78 – 0.97)</td>
<td>0.012*</td>
</tr>
<tr>
<td><strong>Fluid, electrolyte or nutritional disorder</strong></td>
<td>1.20 (1.10 – 1.29)</td>
<td>&lt;0.001*</td>
</tr>
<tr>
<td><strong>Infection</strong></td>
<td>1.19 (1.10 – 1.32)</td>
<td>0.001*</td>
</tr>
</tbody>
</table>
Results

Multi-day admission is itself an important flag