The importance of patient care in optimising treatment outcomes in senior adults

Florian Scotté
Hôpital Européen Georges Pompidou
The Multinational Association for Supportive Care in Cancer (MASCC) defined **supportive care** in 1990:

"Supportive care in cancer is the prevention and management of the adverse effects of cancer and its treatment. This includes management of physical and psychological symptoms and side effects across the continuum of the cancer experience from diagnosis through anticancer treatment to post-treatment care."
Adequate supportive care prolongs survival

- Randomized trial in metastatic lung cancer
- Compares standard oncological therapy ± better supportive care
- Supportive care is associated with:
  - **Longer survival**  
    \[ p=0.02 : 11.6 \text{ vs } 8.9 \text{ months} \]
  - **Better quality of life**  
    \[ p=0.03 \]
  - **Fewer depressive symptoms**  
    \[ p=0.02 \]

Perception is not just a product of the stimulus, but also of mental activity – that we see with the mind as well as the eye

John F. Kihlstrom
Perceptions et Réalités

Basch, NEJM 2010
Supportive care for outpatients in medical oncology department

- Optimize outpatient care organization
- Manage treatment-related adverse events
Perception is not just a product of the stimulus, but also of mental activity – that we see with the mind as well as the eye

John F. Kihlstrom

What do you see:
a duck or a rabbit?

Supportive care for outpatients in medical oncology department

- Optimize outpatient care organization
- Manage treatment-related adverse events
EP-GP in the past

• Delays in collecting chemotherapy adverse events data from patients
  • Delays in managing adverse events
  • Treatments frequently modified, postponed or cancelled

Patients quality of life worsens

Patients benefit less from treatment

---

EP-GP now

PROCHE
“Program of Optimization of CHEmotherapy administration”

EP-GP: European Hospital – Georges Pompidou; AE: Adverse event
PROCHE: Practical approach

Hospital

1. Physician sends patient enrollment form to call center nurse

Medical Call Center

2. Call center nurse calls patient to collect toxicity data

3. Call center receives lab work results

Patient

4. Call center nurse sends patient data to the pharmacy

5. After physician's validation, pharmacist prepares the chemotherapy

6. Oncology team is ready for patient arrival. Chemotherapy is waiting for patient!

SELF EVALUATION

Weight
Fever
Fatigue
Pain
Neuropathy
Diarrhea
Constipation
Stomatitis
Nausea
Vomiting
Dry skin
Hand foot syndrome
Nail change
Infection
Allergy

Scotté F. et al European J Cancer 2013
### General state at the time of call

<table>
<thead>
<tr>
<th>Severity</th>
<th>Weight</th>
<th>General state (PS)</th>
<th>Current fever</th>
<th>Current symptoms</th>
<th>Tiredness</th>
<th>Pain</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N/A</td>
<td>0</td>
<td>N/A</td>
<td>N/A</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

**Nurse comments**

Patient impressions: 0

### Infections

<table>
<thead>
<tr>
<th>NCI Criteria</th>
<th>Fever</th>
<th>Infections</th>
<th>Antibiotics</th>
<th>Allergies</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0</td>
<td>0</td>
<td>Which one</td>
<td>Last taken</td>
</tr>
<tr>
<td>Entitled</td>
<td>No</td>
<td>No</td>
<td>N/A</td>
<td>No</td>
</tr>
</tbody>
</table>

### Allergies

<table>
<thead>
<tr>
<th>Allergies</th>
<th>Started on</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N/A</td>
</tr>
</tbody>
</table>

### Dermatological disorders

<table>
<thead>
<tr>
<th>Disorder</th>
<th>NCI Criteria</th>
<th>Entitled</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skin dryness</td>
<td>0</td>
<td>No</td>
</tr>
<tr>
<td>Acne</td>
<td>0</td>
<td>No</td>
</tr>
<tr>
<td>Nail changes</td>
<td>0</td>
<td>No</td>
</tr>
<tr>
<td>Hand-foot syndrome</td>
<td>0</td>
<td>No</td>
</tr>
</tbody>
</table>

### Neurological disorders

<table>
<thead>
<tr>
<th>Disorder</th>
<th>Type</th>
<th>Sensitive</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neuropathy</td>
<td>2</td>
<td>Interferes with role but not with ADL</td>
</tr>
</tbody>
</table>

### Gastrointestinal disorders

<table>
<thead>
<tr>
<th>Disorder</th>
<th>NCI Criteria</th>
<th>Entitled</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nausea</td>
<td>0</td>
<td>No</td>
</tr>
<tr>
<td>Vomiting</td>
<td>0</td>
<td>No</td>
</tr>
<tr>
<td>Diarrhea</td>
<td>0</td>
<td>No</td>
</tr>
<tr>
<td>Weight loss</td>
<td>0</td>
<td>No</td>
</tr>
<tr>
<td>Mucositis</td>
<td>0</td>
<td>No</td>
</tr>
<tr>
<td>Constipation</td>
<td>0</td>
<td>No</td>
</tr>
</tbody>
</table>

### Others

<table>
<thead>
<tr>
<th>Disorder</th>
<th>Estimated severity</th>
<th>Nurse comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rash</td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>
Optimize chemotherapy outpatient unit:
- Decrease unnecessary hospital stay,
- Limit drugs vastage

Manage AEs and comorbidities:
- Supportive care enhancement and anticipation

Improve:
- Follow-up at home,
- Quality of life,
- Quality of care
- Survival?
Aims and methods (next slide) might be moved to beginning (after slide 59 introducing PROCHE)

Walter Fürst; 18/09/2013
1,037 patients were enrolled (Jan 2009 – Feb 2011)

- i.e. 86% of patients treated in the outpatient unit of the oncology department
- Control group (n=513 enrolled from June 2008 to December 2008)

8,345 evaluation questionnaires were completed
may need clarification what is surveyed by the questionnaires

Walter Fürst; 18/09/2013
Reduces length of stay in outpatient unit

Scotté F. et al. European J Cancer 2013
Number of sessions from 20/d to 25/d → + 25%
to my mind slides 65 and 66 illustrate the issue of increasing patient load to the hospital and should come earlier or at least before slide 64.

Here, they are somehow disruptive

Walter Fürst; 18/09/2013
Chemotherapy Sessions Evolution

Number of Sessions per Place per Day from 1,35/j to 1,75/j → + 30%
Adverse events incidence

Scotté F. et al  European J Cancer 2013

<table>
<thead>
<tr>
<th>Condition</th>
<th>% Patients (N=1,037)</th>
<th>% Questionnaires (N=8,345)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fatigue</td>
<td>96%</td>
<td>78%</td>
</tr>
<tr>
<td>Pain</td>
<td>70%</td>
<td>37%</td>
</tr>
<tr>
<td>Neuropathy</td>
<td>62%</td>
<td>29%</td>
</tr>
<tr>
<td>Nausea</td>
<td>54%</td>
<td>18%</td>
</tr>
<tr>
<td>Diarrhoea</td>
<td>30%</td>
<td>7%</td>
</tr>
<tr>
<td>Nail changes</td>
<td>27%</td>
<td>8%</td>
</tr>
<tr>
<td>Vomiting</td>
<td>16%</td>
<td>3%</td>
</tr>
</tbody>
</table>
## Adverse events grade

**Fatigue, pain, neuropathy: main grade ≥3 adverse events**

<table>
<thead>
<tr>
<th>Event/Severity</th>
<th>Grade 1 (%)</th>
<th>Grade 2 (%)</th>
<th>Grade 3 (%)</th>
<th>Grade 4 (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fatigue</td>
<td>48</td>
<td>26.3</td>
<td>5.8</td>
<td>0.5</td>
</tr>
<tr>
<td>Pain</td>
<td>19</td>
<td>18.4</td>
<td>3.2</td>
<td>0.5</td>
</tr>
<tr>
<td>Neuropathy</td>
<td>14</td>
<td>9.4</td>
<td>2.4</td>
<td>0.04</td>
</tr>
<tr>
<td>Dry skin</td>
<td>14</td>
<td>5.4</td>
<td>0.2</td>
<td>0.2</td>
</tr>
<tr>
<td>Nausea</td>
<td>14.8</td>
<td>4.8</td>
<td>0.3</td>
<td>-</td>
</tr>
<tr>
<td>Vomiting</td>
<td>3</td>
<td>1</td>
<td>0.02</td>
<td>0.04</td>
</tr>
<tr>
<td>Diarrhea</td>
<td>7.6</td>
<td>0.6</td>
<td>0.02</td>
<td>-</td>
</tr>
<tr>
<td>Constipation</td>
<td>19.4</td>
<td>1.8</td>
<td>0.1</td>
<td>0.06</td>
</tr>
<tr>
<td>Stomatitis</td>
<td>5.7</td>
<td>3</td>
<td>0.6</td>
<td>0.02</td>
</tr>
<tr>
<td>Ungueal Change</td>
<td>5.3</td>
<td>1</td>
<td>0.07</td>
<td>-</td>
</tr>
<tr>
<td>Infection</td>
<td>4.8</td>
<td>0.02</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Fever</td>
<td>3.5</td>
<td>0.34</td>
<td>0.02</td>
<td>-</td>
</tr>
<tr>
<td>Weight loss</td>
<td>2.5</td>
<td>0.13</td>
<td>0.04</td>
<td>-</td>
</tr>
<tr>
<td>Hand-Foot syndrom</td>
<td>2.1</td>
<td>0.8</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Rash</td>
<td>1.5</td>
<td>0.02</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Allergy</td>
<td>0.7</td>
<td>0.02</td>
<td>0.02</td>
<td>-</td>
</tr>
</tbody>
</table>

PROCHE program: data on file
Variation from baseline for the occurrence of Fatigue (A) and Pain (B) related to chemotherapy.

Scotté F. et al  European J Cancer 2013
Financial burden

- Gain per year = 520 k€
  
  based on 5 pts more per day with facturation per day per session of €397

- Operational Cost per year = 188 K€ (with taxes…)


are these savings vs. control group?
Some other results…
Patient satisfaction

Time progress of the program

- New Organisation
- Day hospital stay improvement

<table>
<thead>
<tr>
<th>Date</th>
<th>% Satisfaction</th>
</tr>
</thead>
<tbody>
<tr>
<td>oct-08</td>
<td>64%</td>
</tr>
<tr>
<td>nov-08</td>
<td>54%</td>
</tr>
<tr>
<td>janv-09</td>
<td>55%</td>
</tr>
<tr>
<td>feb-09</td>
<td>48%</td>
</tr>
<tr>
<td>mar-09</td>
<td>57%</td>
</tr>
<tr>
<td>apr-09</td>
<td>44%</td>
</tr>
<tr>
<td>mar-10</td>
<td>44%</td>
</tr>
<tr>
<td>jun-09</td>
<td>91%</td>
</tr>
<tr>
<td>jul-09</td>
<td>75%</td>
</tr>
<tr>
<td>aug-09</td>
<td>50%</td>
</tr>
<tr>
<td>sep-09</td>
<td>65%</td>
</tr>
<tr>
<td>oct-09</td>
<td>57%</td>
</tr>
<tr>
<td>nov-09</td>
<td>83%</td>
</tr>
<tr>
<td>dec-09</td>
<td>80%</td>
</tr>
<tr>
<td>jan-10</td>
<td>79%</td>
</tr>
<tr>
<td>feb-10</td>
<td>100%</td>
</tr>
<tr>
<td>mar-10</td>
<td>100%</td>
</tr>
</tbody>
</table>
Patient satisfaction

Time progress of the program

- Nurse team discussion time
- Team listening

% Satisfaction

Date

Oct-08  Nov-08  Jan-09  Feb-09  Mar-09  Apr-09  Jun-09  Sept-09  Dec-09  Mar-10

68%  38%  46%  66%  83%  94%  89%  88%  77%  100%  90%  86%
Leading cause for cancelation or modification of chemotherapy

<table>
<thead>
<tr>
<th></th>
<th>Bad performance status</th>
<th>Toxicity</th>
</tr>
</thead>
<tbody>
<tr>
<td>PROCHE</td>
<td>18%</td>
<td>4%</td>
</tr>
<tr>
<td>Other ambulatory chemotherapy department</td>
<td>46%</td>
<td>13%</td>
</tr>
</tbody>
</table>
## Chemotherapy (CT) wastage

<table>
<thead>
<tr>
<th></th>
<th>Wastage CT preparation</th>
</tr>
</thead>
<tbody>
<tr>
<td>PROCHE</td>
<td>3%</td>
</tr>
<tr>
<td>Other ambulatory</td>
<td>6%</td>
</tr>
<tr>
<td>chemotherapy department</td>
<td></td>
</tr>
</tbody>
</table>
PROCHE, Organisation HDJ
PROCHE in practice

Oncologist (D-8 or earlier)
- Offers patients to take part in a call-assisted program
- Obtains their signatures on informed consent forms

Pharmacist (D-4)
- Transfers patients encrypted list to the call center

Call center nurse (D-2)
- Contacts patients
- Gathers clinical and biological data
- Sends patients (encrypted) data to the pharmacist

Scotté F. et al  European J Cancer 2013
**Oncologist (D-1)**
- Reviews clinical and biological data for each patient
- Approves treatment implementation (“Chemo OK”)*

*Depending on results, the oncologist can also modify, postpone or cancel the treatment session

**Pharmacist (D-1)**
- Validates the oncologist prescription
- Requests anticipated infusion preparation**

**If the compounding of chemotherapy drugs is stable

**Hospital nurse (D day)**
- Brings the already-made infusion bag
- Administers the chemotherapy infusion

Scotté F. et al  European J Cancer 2013
Supportive care for outpatients in medical oncology department

- Optimize chemotherapy logistics
- Manage treatment-related adverse events
Treatment-related adverse events

- Neutropenia
- Hot flashes
- Anemia
- Diarrhea
- Skin & Nail changes

SUPPORTIVE CARE
Grade ≥3 toxicity incidence

Neutropenia
- 81.7% (Grade ≥3)
- Febrile = 7.5%

Anemia
- 10.5% (Grade ≥3)

Diarrhea
- 6.2% (Grade ≥3)

EORTC guidelines

AFSOS recommendations

2. AFSOS recommendations. Referential meeting January 2011. In press
CBZP: Cabazitaxel + prednisone. MP: Mitoxantrone + prednisone. OS: Overall survival.

**French experience with cabazitaxel: ‘Supportive care’ might prolong survival**

<table>
<thead>
<tr>
<th></th>
<th>TROPIC – Global</th>
<th>TROPIC – France</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mitoxantrone</strong> (n=377)</td>
<td>12.7</td>
<td>14.3</td>
</tr>
<tr>
<td><strong>Cabazitaxel</strong> (n=378)</td>
<td>15.1</td>
<td><strong>18.0</strong></td>
</tr>
<tr>
<td><strong>Mitoxantrone</strong> (n=44)</td>
<td>18%</td>
<td>11%</td>
</tr>
<tr>
<td><strong>Cabazitaxel</strong> (n=46)</td>
<td>14%</td>
<td>0%</td>
</tr>
</tbody>
</table>

*‘Supportive care’ includes early detection and management of treatment-related adverse events

*Mainly due to complications of neutropenia

Febrile neutropenia – Assessment algorithm

**Step 1**
Assess frequency of FN associated with the planned chemotherapy regimen

- FN risk ≥20%
- FN risk 10-20%
- FN risk <10%

**Step 2**
Assess factors that increase the frequency/risk of FN

<table>
<thead>
<tr>
<th>High risk</th>
<th>Age &gt;65 years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increased risk (level I and II evidence)</td>
<td>Advance disease</td>
</tr>
<tr>
<td></td>
<td>History of prior FN</td>
</tr>
<tr>
<td></td>
<td>No antibiotic prophylaxis, no G-CSF use</td>
</tr>
<tr>
<td>Other factors (level III and IV evidence)</td>
<td>Poor performance and/or nutritional status</td>
</tr>
<tr>
<td></td>
<td>Female gender</td>
</tr>
<tr>
<td></td>
<td>Hemoglobin &lt;12g/dL</td>
</tr>
<tr>
<td></td>
<td>Liver, renal or cardiovascular disease</td>
</tr>
</tbody>
</table>

**Step 3**
Define the patient’s overall FN risk for planned chemotherapy regimen

- Overall FN risk ≥20%
  - Prophylactic G-CSF recommended
- Overall FN risk <20%
  - Prophylactic G-CSF not indicated

Aapro MS et al. Eur J Cancer 2011;47:8-32. EORTC guidelines

FN: Febrile neutropenia
G-CSF: a New Algorithm?

FN risk >20%

FN risk between 10 and 20%

Evaluation of individual risk factors

Yes

No

FN risk <10%

In 1962, 91% of patients with leukemia died from FN

In 2007, FN-related death rate was 13% in solid tumors and 9% in hematological malignancies

Long-acting G-CSF (ex: pegfilgrastim) (+/- prophylactic antibiotherapy?)

Short acting G-CSF (ex: filgrastim) (+/- prophylactic antibiotherapy?)

Klastersky JA, et al. MASCC 2012
Diarrhea – AFSOS recommendations

• **Definition**
  • 3 (or more) loose or liquid stools per day

• **Prevention**
  • Drink fluids
  • Eat five or six small meals, instead of 3 large ones
  • Avoid dairy products, spicy food, etc.
Diarrhea – AFSOS recommendations

**Grade 1-2 intervention**

- Home care
- Oral hydration
- Loperamide oral
  - 4 mg following the first episode
  - 2 mg every 4 hours
  or
  - 2 mg after each episode
- Octreotide SC
  - If no effect after 48h
  - 100 to 500 μg every 8 hours

**Grade 3-4 intervention**

- Hospitalisation
  - Lab tests
  - Infectious tests
  - IV hydration
- Octreotide SC
  - 100 to 500 μg every 8 hours
  - Increase dose until efficacy

AFSOS recommendations. Referential meeting January 2011. In press
Frozen glove/sock can reduce docetaxel-induced nail and skin toxicity

### Skin toxicity (P<0.0001)

<table>
<thead>
<tr>
<th>Grade</th>
<th>Control (n=45)</th>
<th>Glove (n=45)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>38%</td>
<td>67%</td>
</tr>
<tr>
<td>1</td>
<td>44%</td>
<td>22%</td>
</tr>
<tr>
<td>2</td>
<td>9%</td>
<td>2%</td>
</tr>
<tr>
<td>Lost</td>
<td>9%</td>
<td>9%</td>
</tr>
</tbody>
</table>

### Nail toxicity (P<0.0001)

<table>
<thead>
<tr>
<th>Grade</th>
<th>Control (n=45)</th>
<th>Glove (n=45)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>49%</td>
<td>89%</td>
</tr>
<tr>
<td>1</td>
<td>29%</td>
<td>11%</td>
</tr>
<tr>
<td>2</td>
<td>22%</td>
<td>0%</td>
</tr>
</tbody>
</table>

2. Scotté F et al. Cancer 2008;112:1625-31
Frozen glove/sock can reduce docetaxel-induced nail and skin toxicity

WITH glove  WITHOUT glove  WITH glove  WITHOUT glove

WITH sock  WITHOUT sock

Dyschromia - Onycholysis
Hot flashes

- Affect 60 to 80% of prostatic cancer patients
- Negative impact on quality of life

Decreasing hot flashes frequency & severity

- Gabapentine
- Pregabalin
Supportive care for ADT: Hot flashes

- Affect 60–80% of prostate cancer patients
- Negative impact on quality of life
- Treatments to reduce frequency and severity of hot flashes
  - Hormonal therapy: oestrogen-based and progesterone-based
  - Antidepressants, e.g. venlafaxine, gabapentine, pregabalin

ADT: androgen deprivation therapy.

Pregabalin decreases hot flashes in women

- Hot flash scores
  (changes from baseline)

- Hot flash frequencies
  (changes from baseline)

⇒ 69% and 74% patients satisfied with Pregabalin 75 and 150 mg BID
  vs 33% with placebo

Non-pharmacological care

Mind-body care
- Yoga
- Relaxation
- Sophrology
- Musicotherapy

Psychological care
- Individual
- Group

Social care

Rehabilitation care
- Dietetics
- Sleep
- Esthetics

Holistic care
- Auriculotherapy
- Osteopathy
- Reflexology

Physical care
- Physical exercise
- Cardio workout

Mind-body care
- Yoga
- Relaxation
- Sophrology
- Musicotherapy
Benefit of exercise to cancer patients

- Systematic review of randomised controlled trials found:
  - ↑ Quality of life
  - ↑ Psychological well-being
  - ↑ Physical strength
  - ↓ Fatigue
  - ↓ Nausea & diarrhoea
  - ↓ Pain
  - ↓ Depression
  - ↓ Anxiety
  - ↓ Sleeping problems

## Benefit of exercise on cancer-related fatigue during and after cancer therapy

<table>
<thead>
<tr>
<th>Study</th>
<th>Exercise</th>
<th>Control</th>
<th>Standardised mean difference (fixed)</th>
<th>Weight</th>
<th>Standardised mean difference (fixed)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>Mean SD</td>
<td>n Mean SD 95% CI</td>
<td></td>
<td>95% CI</td>
</tr>
<tr>
<td>Campbell 2005</td>
<td>1 0.0</td>
<td>1 0.0   (0.0)</td>
<td>0.0 Not estimable</td>
<td>0.0</td>
<td>Not estimable</td>
</tr>
<tr>
<td>Coleman 2003a</td>
<td>23 14.40 (7.60)</td>
<td>14 15.00 (5.60)</td>
<td>4.0 -0.08 (-0.75–0.58)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coumeya 2007a</td>
<td>78 -36.80 (10.40)</td>
<td>41 -34.90 (12.50)</td>
<td>12.3 -0.17 (-0.55–0.21)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coumeya 2007b</td>
<td>82 -36.30 (9.40)</td>
<td>41 -34.90 (12.50)</td>
<td>12.5 -0.13 (-0.51–0.24)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dimeo 1999</td>
<td>27 11.70 (8.90)</td>
<td>32 11.50 (8.60)</td>
<td>6.7 0.02 (-0.49–0.53)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Drouin 2005</td>
<td>13 60.90 (36.95)</td>
<td>8 86.00 (55.55)</td>
<td>2.2 -0.54 (-1.44–0.36)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Headley 2004</td>
<td>1 0.0 (0.0)</td>
<td>1 0.0 (0.0)</td>
<td>0.0 Not estimable</td>
<td>0.0</td>
<td>Not estimable</td>
</tr>
<tr>
<td>Mock 1994</td>
<td>1 0.0 (0.0)</td>
<td>1 0.0 (0.0)</td>
<td>0.0 Not estimable</td>
<td>0.0</td>
<td>Not estimable</td>
</tr>
<tr>
<td>Mock 1997</td>
<td>1 0.0 (0.0)</td>
<td>1 0.0 (0.0)</td>
<td>0.0 Not estimable</td>
<td>0.0</td>
<td>Not estimable</td>
</tr>
<tr>
<td>Mock 2005</td>
<td>54 3.50 (2.40)</td>
<td>54 3.70 (2.60)</td>
<td>12.4 -0.08 (-0.46–0.30)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mutrie 2007</td>
<td>82 -10.30 (10.40)</td>
<td>92 -36.00 (12.10)</td>
<td>19.6 -0.38 (-0.68–0.08)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Segal 2001a</td>
<td>40 58.80 (22.80)</td>
<td>20 62.60 (17.40)</td>
<td>6.1 -0.18 (-0.71–0.36)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Segal 2001b</td>
<td>42 57.00 (23.90)</td>
<td>21 62.60 (17.40)</td>
<td>6.4 -0.25 (-0.78–0.27)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Segal 2003</td>
<td>82 -41.60 (10.50)</td>
<td>73 -40.30 (9.40)</td>
<td>17.7 -0.13 (-0.45–0.19)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Windsor 2004</td>
<td>1 0.0 (0.0)</td>
<td>1 0.0 (0.0)</td>
<td>0.0 Not estimable</td>
<td>0.0</td>
<td>Not estimable</td>
</tr>
<tr>
<td>Total (95% CI)</td>
<td>528 0.0 (0.0)</td>
<td>401 0.0 (0.0)</td>
<td>100.0 -0.18 (-0.32 – -0.05)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Test for heterogeneity chi-square = 3.46; df = 9.4; I²= 0.0%
Test for overall effect = 2.72; p = 0.006
Benefit of exercise for ADT-related muscle loss in prostate cancer

- 57 patients with prostate cancer treated by ADT
- Randomised to usual care ± programme of resistance and aerobic exercise
- Exercise associated with:
  - ↑ Muscle mass and strength
  - ↑ Quality of life
  - ↓ Fatigue, nausea, dyspnoea

Exercise is associated with lower mortality in prostate cancer

- Health Professionals Follow-Up Study
  - 2,705 men with non-metastatic prostate cancer
  - Evaluated physical activity and time to overall death and prostate cancer-specific death

“Exercise is associated with lower mortality in prostate cancer”

RR = 0.67 (0.56–0.82)
RR = 0.51 (0.36–0.72)

“A modest amount of vigorous activity such as biking, tennis, jogging, or swimming for ≥ 3 hours a week may substantially improve prostate cancer-specific survival”
Auriculotherapy

- Electrical stimulation of auricular reflex points
- Helps patients to better cope with nausea, vomiting, hot flashes, dry mouth post-radiation therapy, anxiety, etc.

Harding C et al. BJU International 2008;103:186-90
‘Best supportive care’ team to improve treatment outcomes

Pain management
Specialist nurse
Psychologist
Dietetician

Social worker
Kinesitherapist
Sexologist

... and physical exercise