Meet the Professor

Dosing and toxicity management

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Mrs. Marie O.

- 78 years
- Right breast tumor: 50 mm, upper outer quadrant, Node: 0
- Biopsy (9 Dec 2009)
  - Invasive ductal carcinoma; SBR grade 3
  - Hormone receptors: negative
  - HER-2 status: negative
- Work-up
  - Bone scan: normal
  - Whole body scanner: 2 lung nodules < 5 mm
- Mastectomy and axillary dissection (29 Jan 2010): pT4b N3 M0
  - Tumor size: 55 mm
  - Nodes: 13 positive /20
  - Skin invasion
Oncological context

• Tumor board decision:
  – Radiation therapy
  – Adjuvant chemotherapy (with prior Geriatric Oncology evaluation)
    • 3 FEC 100
    • 3 Docetaxel
Geriatric oncology evaluation  
10 March 2010

• Social situation
  – Widow, alone in a little town
  – 2 daughters not living close
  – No caregiver

• Sensory functions
  – Vision: no problem: mild cataract; chronic glaucoma
  – Hearing: mild hearing loss

• Physical capacities
  – No regular activity
  – Painful joint disease of knee
  – No fall, correct gait and balance, one-leg standing > 5s

• Nutrition
  – Recent weight loss < 5%
  – BMI: 31
  – Albumin level: 50 g/l
Geriatric oncology evaluation

- **Cognition**
  - Little memory complaint, no disorientation, no language impairment
  - No impact in daily living

- **Psychological status**
  - Chronic depressive syndrome
  - Clobazam treatment
  - No active symptoms, no sleeping disorders

- **Continence**
  - Stress urinary incontinence
  - No anal problems

- **Functional status**
  - No dependence in basic activities of daily living
  - Shopping with her daughter
  - Home help (housekeeping, laundry): 2 hours/week
  - Not driving anymore
Geriatric oncology evaluation

- Comorbidities
  - Mellitus diabetes (metformine, glimepiride), no long-term complications, HbA1C 8.1%
  - High blood pressure (hydrochlorothiazide, irbesartan, moxonidine)
  - Carotid atherosis (aspirin)
  - Myelodysplastic syndrome / refractory anemia (Hb level: 100 g/L; ESA treatment)
  - Degenerative osteo-arthritis
  - Chronic kidney disease (Cockroft-Gault creatinine clearance around 35 ml/min)

- Patient's opinion
  - Agreement on adjuvant treatment options (chemotherapy an radiation therapy)
Chemotherapy

• FEC 100 regimen
  – C1: 19 March; C2: 09 April; C3: 04 May 2010
  – Full dose of cyclophosphamide and 5-FU (50 mg/m²) and 80%-dose epirubicin
  – Delay 3rd cycle: 4 days
  – Side-effects:
    • Cycle 2: diarrhea grade 2; anemia grade 2 (increase ESA dosage)

• Docetaxel regimen
  – C1 full dose (100 mg/m²): 25 May 2010
  – D16: Emergency hospitalization
Docetaxel toxicity: features

• **D16**
  – 4-day profuse diarrhea
  – Dyspnea
  – Hypothermia
  – Hypoglycemia (on metformine therapy)
  – No neutropenia

• **Emergency admission**
  – Diabetic ketoacidosis
  – Hypovolemia
  – Acute renal failure (creat. Cl. < 10 ml/min; anuria, hyperkaliemia)
  – S Aureus sepsis, then Candida albicans sepsis
Docetaxel toxicity: management

- 18-day stay in Intensive Care Unit
- Hydration
- Continuous dialysis
- Non-invasive ventilation
- IV antibiotic therapy (piperacilline + tazobactam, vancomycin)
- IV fluconazole therapy
Docetaxel toxicity: evolution

– Malnutrition
– Functional impairment in B-ADL and IADL
– Chemotherapy discontinued
– Radiation therapy
– Admission in geriatric rehabilitation unit (55-day stay)
  • Functional independency in B-ADL
  • Cognitive function: MMS 27/30
  • Medications: insulin therapy, anti-hypertensive treatment reduction (irbesartan)
  • Comorbidity: Creat. Cl. 35 ml/min
– Return at home
  • Increased home care services (visiting nurse, care assistant, home help, home-delivered meals)
Comments

• Older patient require careful management during chemotherapy
  – Patient failed to observe safety rules: she did not contact any physician at the diarrhea onset
  – A Nurse monitoring would have been appropriate to detect problems during chemotherapy

• Would we have been able to predict this event?
• What about chemotherapy dosage?
### Risk factors for Gr. 3-5 toxicity

<table>
<thead>
<tr>
<th>Risk factor</th>
<th>Patient's score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age ≥73 years</td>
<td>2</td>
</tr>
<tr>
<td>GI/GU cancer</td>
<td>0</td>
</tr>
<tr>
<td>Standard dose</td>
<td>3</td>
</tr>
<tr>
<td>Poly-chemotherapy</td>
<td>2</td>
</tr>
<tr>
<td>Hemoglobin (H: &lt;110, F: &lt;100)</td>
<td>0</td>
</tr>
<tr>
<td>Creatinine clearance &lt;34</td>
<td>0</td>
</tr>
<tr>
<td>≥1 falls in last 6 months</td>
<td>0</td>
</tr>
<tr>
<td>Hearing impairment (fair or worse)</td>
<td>2</td>
</tr>
<tr>
<td>Limited in walking one block (MOS)</td>
<td>0</td>
</tr>
<tr>
<td>Assistance required in medication intake</td>
<td>0</td>
</tr>
<tr>
<td>Decreased social activity (MOS)</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>9</strong></td>
</tr>
</tbody>
</table>

**Intermediate risk: 53%**

ROC: 0.72

Hurria A, J Clin Oncol 2011
Dosage adjustment

• Dose adjustment
  – No specific recommendations in ageing people
  – No recommendations in case of renal insufficiency

• Supportive care
  – Prophylactic use of GC-CSF
  – ESA support

Time for discussion!