Epidemiology of melanoma in older patients

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Age distribution melanoma patients

Source: Eindhoven Cancer Registry

Literature:

Elderly with melanoma compared to younger patients:

• Incidence up to 10-fold higher
• Greater increase in incidence and mortality over time
• More rapid increase among males → reverse male-female ratio
• Increase in incidence of thick melanomas (>4.0 mm); only among elderly males
• Poorer survival


Elderly melanoma patients

Trends in age-specific incidence

Risk factor: sun bathing

Sun protection campaigns:

Stabilization of incidence in younger age groups
campaigns have not reversed the early-life sun exposure in older age groups

However,

Poorer survival for elderly

Source: Eindhoven Cancer Registry

Elderly have a poorer survival

Possible explanations:
- More males among elderly than among younger patients
- Other subtype distribution
- More late diagnosis
- Weaker immune system
- More serious comorbidity and decreased organ functions
- Less aggressive treatment

More males among elderly

Elderly present with more nodular melanomas and lentigo maligna melanomas:
- Survival of nodular melanoma is significantly poorer
- Appear more frequently in hard-to-see anatomical sites (head&neck, scalp and back)

Other subtype distribution

More late diagnosis

- Elderly present with more thick melanomas (>4.0 mm):
  - Males: 20% (age 65+) vs 8% (age <65)
  - Females: 16% (age 65+) vs 5% (age <65)
- Increase in thick melanomas over time among elderly males
- Less sentinel node metastasis at a given thickness:
  Possibly explained by a weaker immune system
**Possible reasons for late diagnosis**

Elderly:
- Increased proportion of nodular melanomas, which lack early melanoma signs and symptoms
- Less attentive to changes on their skin
- Perform self-examination less often
- More melanomas in hard-to-see anatomical sites
- Deteriorating vision
- Loss of partner
- Development of benign skin lesions \(\rightarrow\) lower consciousness of melanoma
- Participate less often in skin cancer screening programs

**Weaker immune system**

Melanoma is a highly immunogenic tumour

Weaker immune system in elderly:
- Reduces a patient’s reaction to infections and cancer
- May reduce the sensitivity of sentinel node biopsy (Azimi et al. JCO 2012)
- May lower the response to immune-based treatment

**More comorbidity**

Males

<table>
<thead>
<tr>
<th>Age (Years)</th>
<th>Incidence (%)</th>
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<tbody>
<tr>
<td>70-74</td>
<td>6.3</td>
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<tr>
<td>75-79</td>
<td>8.4</td>
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<td>80-84</td>
<td>10.0</td>
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<tr>
<td>85+</td>
<td>12.7</td>
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</table>

Females

<table>
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<tr>
<th>Age (Years)</th>
<th>Incidence (%)</th>
</tr>
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<tbody>
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<td>70-74</td>
<td>5.2</td>
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<tr>
<td>75-79</td>
<td>7.3</td>
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<tr>
<td>80-84</td>
<td>9.1</td>
</tr>
<tr>
<td>85+</td>
<td>11.7</td>
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</tbody>
</table>

Source: Eindhoven Cancer Registry

**Less aggressive treatment**

- More complex treatment due to comorbidity/polypharmacy/reduced functional reserves and weaker immune system
- Surgery: Generally a minor procedure that can be performed under local anaesthesia. Elderly have more lentigo maligna melanomas that tend to arise more often on functionally and aesthetically important areas (e.g., around eyes, nose, mouth) \(\rightarrow\) difficult surgery (Lasithiotakis et al. Melanoma Res 2010)
- Sentinel node biopsy and sentinel node dissection: Fear for lymphedema, nerve damage and wound complications, although there is no evidence for a higher complication rate in elderly (Lee et al. J Clin Oncol 2004)
- Adjuvant therapy in melanoma (e.g., interferon-\(\alpha\)): Potential benefit should outweigh the expected toxic effects
- Treatment of metastasized disease: Toxicity and costs are high. Adverse events among trial patients are associated with poor performance status (Jatoi et al. J Geriatr Oncol 2012)

**Summary and conclusions**

Elderly:
- Strong increase in incidence and mortality of melanoma
- More often late diagnosis
- Poorer prognosis
- Currently, early detection is best chance of influencing behaviour
- Perhaps future screening campaigns should focus on elderly (especially men)
- Safety and effects of treatments need to be further investigated in elderly, with a special emphasis on Quality-of-Life