Skin Cancer Screening in Germany

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“The Role of Cancer Registries in Cancer Screening Programs – a European Perspective”
Overview

• Burden of skin cancer
• Prevention of skin cancer
• Development of skin cancer screening
• Evaluation phase
• National skin cancer program
• First results
• Evaluation and cancer registration
• Conclusion and discussion
Burden of skin cancer

- **Group 1:**
  Malignant Melanoma of the skin (**MM**)  

- **Group 2:**
  Non Melanoma Skin Cancer (**NMSC**)  
  a) Basal cell carcinoma (**BCC**)  
  b) Squamous cell carcinoma (**SCC**)
Malignant Melanoma (MM)

ABCD - Rule
A- Asymmetry  B- Border  C- Color  D- Diameter

Prognosis (relative 5-year survival)
overall: ~84%
stage IV: <20%


**Basal Cell Carcinoma (BCC)**

BCC = 80% of NMSC

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**Prognosis:** "good", almost no metastases, but
- Quality of Life
- Relapse
Squamous Cell Carcinoma (SCC)

Prognosis (relative 5-year survival)
overall: ~89%
but chance of metastases
Skin cancer – epidemiological burden
Time trends MM in Germany

Age-standardized incidence and mortality in Germany, 1980 – 2004, ICD-10 C43
Cases/deaths per 100,000 (European Standard)

~ 3-fold increase since 1980

Cancer in Germany 2003-4, GEKID und RKI, 2008
Skin cancer – epidemiological burden

Age-specific incidence

**MM**

**NMSC**

**Higher incidence in younger women (compared to men)**

Reference: Cancer Registry Schleswig-Holstein, 2006
Skin cancer – epidemiological burden
Most frequent cancers in Germany

Selected tumour sites as a percentage of all cancer cases (100) excluding non-melanoma skin cancer in Germany in 2004
Source: estimate by Federal Cancer Surveillance Unit at the Robert Koch Institute

- MM: ~15,000 cases
- NMSC: >100,000 cases

Cancer in Germany 2003-4, GEKID und RKI, 2008
Burden of skin cancer – first conclusion

• MM
  – starts in younger age (MM, 20-35)
  – very poor prognosis in higher tumor stage

• NMSC
  – disfiguring therapy, esp. when located in the face region → loss of LQ
  – high risk of relapse
  – high economic impact (high incidence)

⇒ NEED FOR PREVENTION
Prevention of skin cancer

• Primary prevention
  – main risk factor: *ultra violet radiation*
  – meaningful approaches for primary prevention available
    • avoiding high UV levels, using sunscreen etc.
    • avoiding sun beds, forbidden by law for kids (<18 years)

• Secondary prevention
  – but risk factors (acquired (sunburns) or individual (skin type, multiple naevi etc.) are raising skin cancer risk extremely
    → sec. prevention is essential
  – excellent survival in early stages
  – skin cancer is rather easy to detect → skin examination

→ **MAIN TASK OF THE ADP SINCE 1989**
Campaigns of the ADP and German Cancer Aid

www.hautkrebs-screening.de
• The skin cancer screening test should fulfill international rules, as
  – simple, safe, precise and validated
  – acceptable
  – agreed policy on the further diagnostic investigation of individuals with a positive test result

[http://www.screening.nhs.uk/criteria#fileid7866]
Skin cancer screening test

Standardized visual examination of the entire body

- Simple
- Safe
- Acceptable
- Validated

Sensitivity: ~ 80%
Specificity: ~ 80%
Implementation and evaluation

- Different phases of evaluation and implementation
  - Field phase 2001 in Schleswig-Holstein

- Important elements of implementation
  - Quality assurance
  - Obligatory training program for participating physicians
  - Documentation!
  - Cooperation with cancer registry
Project “Skin Cancer Screening” in Schleswig-Holstein

The project was carried out in Schleswig-Holstein, northern most federal state with a population of 2.8 million, from 1st July 2003 to 30th June 2004
Participation 2003/04

366,000 skin cancer screenees

%
**Detected malignant tumours**
(with histopathological confirmation)

<table>
<thead>
<tr>
<th>Type of Tumor</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Melanoma (incl. in situ)</td>
<td>568</td>
</tr>
<tr>
<td>Basal cell carcinoma</td>
<td>2,115</td>
</tr>
<tr>
<td>Squamous cell carcinoma</td>
<td>375</td>
</tr>
<tr>
<td>Rare malignant skin tumors</td>
<td>12</td>
</tr>
</tbody>
</table>

**TOTAL** 3,070
Incidence trends of MM in Schleswig-Holstein

Skin cancer screening

- Men (incl. in situ)
- Women (incl. in situ)
- Men
- Women
Mortality trends MM
Schleswig-Holstein vs. Germany
Nationwide Skin Cancer Screening in Germany
Commencement of the German skin cancer screening program

15.11.2007:
The National Committee of Physicians and Health Insurances decided the implementation of the skin cancer screening as part of the German legal cancer early detection program

- Starting mid 2008
- After 5-years evaluation intended
  (evidence for effectiveness is necessary for the long-term implementation)
## The German skin cancer screening Basics

<table>
<thead>
<tr>
<th>Eligibility requirements:</th>
<th>Screening:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Member of a health insurance • &gt;= 35 years old • Every 2 years</td>
<td>• One phase • Two phases</td>
</tr>
<tr>
<td></td>
<td>(1. examination by a dermatologist)</td>
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<tr>
<td></td>
<td>(1. examination by a general practitioner 2. examination by a dermatologist)</td>
</tr>
</tbody>
</table>

**Conditions:**
- Malignant melanoma
- Basal cell carcinoma
- Squamous cell carcinoma
The German skin cancer screening - a two step screening

Screened Population: age 35 or older (45 million)
every second year

1. Step
- General practitioner
  Internist Ca. 60,000

2. Step
- Dermatologist
  Ca. 3,300

- excision and histopathological examination (gold standard)

THERAPY
The German skin cancer screening
Information of the public
about benefits and disadvantages

- Internet
- Leaflets
- Doctor-patient-communication
- Counseling by other medical staff (company physicians, medical assistant, nurse, …)
- …

- with support of the German Cancer Aid
## The German skin cancer screening
### First results - Participation

- Eligible population: 45 Million persons (>=35 years)

<table>
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<tr>
<th>1,720,257 screening examinations</th>
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<td>(quarter 4/2008)</td>
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</table>

Estimated participation in 2 years: **31%**

- Extrapolation based on data of 11 Associations of Physicians.
  - (GOP 01745 und 01746)
  - (one-time screening/eligible population)
The German skin cancer screening
Basic electronic documentation

Non-Dermatologist
1. Registration code
2. Age / Sex
3. Screening diagnosis
   – MM
   – BCC
   – SCC
4. Embedded with routine health check

Dermatologist
1. Registration code
2. Age/ Sex
3. If referral: screening diagnosis of Non-Dermatologist
4. Own suspected diagnosis
   – MM
   – BCC
   – SCC
5. Histopathological statement/ grading
The German skin cancer screening Evaluation

- The typical German way!
  (see other cancer screening programs)

- Only weak evidence, no RCT to prove effectiveness before or during implementation
  (this was not wanted and the chance now has passed up …)

- Only a very brief evaluation of process quality is intended

- Effectiveness evaluation unclear (who, how, when ...?)
  (Screening guideline names “trails”)

- No concepts or funding for endpoint evaluation are present until now
The German skin cancer screening
Evaluation

• Chance for cancer registries!
• The only organization with actual population-based skin cancer data!
• Therefore federal cancer registries might play an essential role in assessing the effectiveness, but
  – registration by dermatologists and pathologists has to be complete
  – cancer registries have to register MM and **NMSC** (BCC/SCC) completely, including information on **staging**
Conclusion and discussion
Skin Cancer Screening in Germany

• German skin cancer screening program fulfills most important criteria for cancer screening (Condition, Test, Treatment, Program - [see http://www.screening.nhs.uk/criteria#fileid7866])

• The possibilities of mortality reduction (MM) and improvement of QL (NMSC) are given

• Actual intended evaluation is “weak”

• Further evaluation (effectiveness) urgently needed

• Cancer registries will play an important role in the evaluation of skin cancer screening
Thank you!

GEKID