No ‘cure’ within 12 years of diagnosis amongst breast cancer patients who are diagnosed via mammographic screening

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Definition
‘Cure’... the point at which no excess hazard of death is observed

- Not clinical
- Not individual
- Net survival framework
- Alternative examination of data
- Additional epidemiological tool
Motivation

But what about asymptomatic women?

original article

‘Cure’ from breast cancer among two populations of women followed for 23 years after diagnosis

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New study

Examination of women by individually-derived screening status

Flexible methods

No ‘cure’ within 12 years of diagnosis among breast cancer patients who are diagnosed via mammographic screening: women diagnosed in the West Midlands region of England 1989–2011

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Patients

- 19,800 women with breast cancer
- West Midlands region of England
- Diagnosed 1986-2011
- Follow-up to 2012
- Aged 50-70 at diagnosis
- Individually linked to Breast Screening data
- Continuously eligible for screening from age 50 years

Methods

- Estimation of net survival
- Analysis by deprivation, ethnicity, age, tumour stage
- Correction for lead time for screen-detected
- ‘Cure’ evaluated
  - Examined visually (net survival curves)
  - Flexible parametric log-cumulative excess hazard regression models
Results

Non-screen-detected woman

Non-screen-detected women, localised disease

Screen-detected women

Screen-detected women, localised disease
Results

<table>
<thead>
<tr>
<th></th>
<th>All women</th>
<th>Screen-detected women</th>
<th>Non-screen-detected women</th>
</tr>
</thead>
<tbody>
<tr>
<td>All women</td>
<td>No evidence</td>
<td>No evidence</td>
<td>No evidence</td>
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<tr>
<td>by age group</td>
<td>No evidence</td>
<td>No evidence</td>
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<tr>
<td>by tumour stage</td>
<td>No evidence or no convergence</td>
<td>No evidence</td>
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<tr>
<td>by ethnicity</td>
<td>No evidence</td>
<td>No evidence or no convergence</td>
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<tr>
<td>by deprivation</td>
<td>No evidence</td>
<td>No evidence</td>
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Localised cases only

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<tr>
<td>by deprivation</td>
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</tbody>
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Conclusions and implications

- Favourable survival, massively increased over time
- Screen-detection affords much higher survival (independent of lead-time bias)
- Small but persistent increased risk of death (at least until 10th anniversary of diagnosis)
Conclusions and implications

• ‘Cure’ absent in all groups
  even for women with localised, screen-detected cancers
• Best communication of long-term risk?
  – women recently diagnosed with breast cancer
  – women considering attending screening for breast cancer

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