Pre-stroke mobility associated with worse outcomes in dementia patients with stroke – data from the Swedish Dementia (SveDem) and Stroke registries

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CONFLICT OF INTEREST DISCLOSURE

I have no potential conflict of interest to report
Background

- Stroke is a common cause of morbidity and mortality in dementia

- Pre-stroke dementia is associated with worse outcomes
  - Higher rate of disability and mortality

- Baseline mobility is an important predictor of functioning and mortality after stroke

- Investigate the relationship between mobility and dementia
Methods

• Longitudinal cohort study based on SveDem, the Swedish Dementia Registry and Riksstroke, the Swedish Stroke Registry.

• Riksstroke- a Swedish national quality register for stroke care primarily aimed at health professionals and decision makers in health care.
SveDem-Swedish Dementia Registry

- National quality registry to improve diagnostics, treatment and care in dementia

- **Aim:** to follow the patient through the chain of care with yearly follow-ups starting at the time of diagnosis

SveDem patients are therefore
- ✓ at specialist units (100%)
- ✓ in primary care or (75%)
- ✓ in nursing homes

*At present 71,000 individuals with a recent dementia diagnosis*
RESEARCH ARTICLE

SveDem, the Swedish Dementia Registry – A Tool for Improving the Quality of Diagnostics, Treatment and Care of Dementia Patients in Clinical Practice

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Inclusion

- 58154 patients with dementia in SveDem 2007-2014
- Of these 2233 patients had also suffered a stroke and were registered in Riksstroke
- Patients ≤ 65 years old excluded
- Patients with dementia who had a stroke up to 7 years before the dementia diagnosis were excluded

- Resulted in 1689 patients
Methods

• 1689 patients > 65 years old with dementia registered in SveDem and suffering a first stroke between 2007 and 2014 registered in Riks-stroke

• 7973 non-dementia age and sex-matched controls with stroke (from Riks-stroke) but without dementia

• Data on accommodation, stroke severity, mobility, care, death
• Outcomes presented here:
  – accommodation at discharge
  – accommodation, mobility and death at 3 months

• Logistic regressions were performed for 3 months follow up, and for accommodation and mobility at 3 months
Pre-stroke dementia and non-dementia groups

<table>
<thead>
<tr>
<th></th>
<th>Dementia N=1689</th>
<th>Non-dementia N=7973</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (median) years</td>
<td>83</td>
<td>83</td>
</tr>
<tr>
<td>Nursing home</td>
<td>32%</td>
<td>8%</td>
</tr>
<tr>
<td>Pre-stroke independent mobility</td>
<td>61%</td>
<td>89%</td>
</tr>
<tr>
<td>Pre-stroke outdoor dependent mobility</td>
<td>25%</td>
<td>7%</td>
</tr>
<tr>
<td>Pre-stroke dependent mobility</td>
<td>14%</td>
<td>5%</td>
</tr>
</tbody>
</table>

The median time between dementia and stroke diagnosis was 512 days
Results

• Patients with dementia and stroke were more likely to be discharged to nursing home after a stroke than non-dementia stroke controls (51 vs 20% p<0.001).

<table>
<thead>
<tr>
<th>Place of discharge</th>
<th>Dementia N=1689</th>
<th>Non-dementia N=7973</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Home</td>
<td>457 (33%)</td>
<td>4008 (60%)</td>
<td>&lt; 0.001</td>
</tr>
<tr>
<td>Nursing home</td>
<td>712 (51%)</td>
<td>1335 (20%)</td>
<td>&lt; 0.001</td>
</tr>
</tbody>
</table>
Results: discharge

- Dementia and non-dementia patients who moved independently before the stroke were after the stroke more often discharged home (60% vs 28%).

<table>
<thead>
<tr>
<th>Discharge place</th>
<th>Mobility Independent at baseline</th>
<th>p-value</th>
<th>Mobility dependent outdoors at baseline</th>
<th>p-value</th>
<th>Mobility dependent at baseline</th>
</tr>
</thead>
<tbody>
<tr>
<td>Home</td>
<td>60%</td>
<td>&lt; 0.001</td>
<td>28%</td>
<td>&lt; 0.001</td>
<td>17%</td>
</tr>
<tr>
<td>Nursing home</td>
<td>19%</td>
<td>&lt; 0.001</td>
<td>56%</td>
<td>&lt; 0.001</td>
<td>75%</td>
</tr>
</tbody>
</table>
Results: discharge after stroke

• Among those who had independent mobility pre-stroke:

  – 43% dementia patients were discharged home compared to non-dementia controls (62%)

  – 37% dementia patients were discharged to nursing home compared to non-dementia controls (16%)

  – 19% dementia patients and 19% non-dementia controls were discharged to geriatric rehabilitation
Results at 3 months

• Dementia patients who had independent mobility pre-stroke were less likely to be mobility independent at 3 months post-stroke (48%) compared to non-dementia stroke patients (70%).

• Pre-stroke independent dementia patients had OR 2.56 (CI 2.05-3.20) of being completely dependent at 3 months compared to pre-stroke mobility independent non-dementia stroke patients.
Mortality at 3 months

• After the stroke, mortality at three months was higher in dementia patients (31 vs 23% p<0.001) non-adjusted.

• Dementia and non-dementia patients with independent mobility pre-stroke had the lowest mortality 19% compared to 52% in the dependent mobility group

• Mortality at 3 months did not differ between stroke patients with or without dementia within each mobility group
Conclusions

• Patients with dementia who suffer a stroke did not present higher 3 months mortality than stroke-patients without dementia, once previous mobility was accounted for.

• However, mobility and disability after stroke were worse in patients with dementia and present a high burden of disability after a stroke.

• Studies on how to best strengthen independent mobility in dementia patients are needed
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