THE UNIVERSITY of EDINBURGH

Centre for Cognitive Ageing and Cognitive Epidemiology

Added value:
links between CCACE and Informatics

Cognitive pathology cohorts

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Lifelong Health & Wellbeing
Research for Healthy Ageing

Cognitive pathology cohorts

- Identify those developing cognitive pathology in 'healthy' cohorts
- Case register of people identified as having cognitive pathology
- Pathology implies tissue
  - Rather 'non-normative' cognitive ageing
  - Dementia

Healthy cohort – 1
The 1932 Scottish Mental Survey

- Dr Tom Russ, Lecturer in Old Age Psychiatry
- Non-random geographical variation in dementia

Dementia case determination

- N=87,498 at age 11
- ISD SMR & GRO deaths
  - 19,272 men (44.3% overall)
  - 18,325 women (42.6% overall)
- Address at first hospital admission
  - Missing or erroneous for 7,854
  - Age 11 IQ missing for 804 men & 855 women
- 13,317 male and 13,423 female deaths
  - 10.4% men & 9.8% women identified alive

Analytic sample

- 14,864 men and 14,879 women (34%)
- 1307 male and 2298 female dementia cases were identified
- Geocode location of first hospital contact (generally mid-life)
- County of schooling at age 11

Ascertainment

- Similar % ascertainment across counties
- Death certificates alone missed 17.8% male & 16.3% female cases
- Glasgow NHS Nursing Home Practice
  - 4/12 male & 13/27female cases missed
  - Primary care had no record of 4/8 male & 3/14 women identified by ISD
- Prescribing information identified ~5% extra cases
  - No major geographical variation

Healthy cohort – 2
The 1932 Lothian Birth Cohort

- Dr Ruth Sibbett, Clinical Research Fellow
- Dementia outcomes

Dementia case determination

- N=550 Wave 1 age 79
- Wave 3 age 87 consent to health record linkage N=207
- CHI available N=196
  - 117 alive, 79 dead
- GRO N=391 dead
  - 42 alive & no consent for health outcomes

Dementia cases

- GRO 391 dead 55 with dementia
- TRAK
  - 25 cases alive with dementia, 9 cognitive decline
  - 79 dead on TRAK, 19 with dementia, 3 with cognitive decline
  - 18 cases dead with dementia on TRAK also reported by GRO
  - 10/18 (55.5%) have dementia on death certificate
- PiMS to be ascertained
- Overall currently 89 dementia cases +/-12
  - 16.2% minimum, 19.9% maximum

Dementia cohort
The Scottish Dementia Research Interest Register

- Scottish Dementia Clinical Research Network
- People with dementia who volunteer for research case register
- Consent to health record linkage

Acute hospital admissions

- N=730 (80% AD)
  - 47.8% female; mean±SD age 76.3±8.2 years, range 50-94, mean (SD) MMSE score 21.3 (6.0)
- 274 (37.5%) admitted over ±SD follow up of 1.2±0.8 years (range 2 days to 3.3 years)
- 146 (53.3%) had dementia correctly recorded on discharge (SMR-01)
  - cf 25/25 admitted to psychiatric hospital had dementia coded on discharge (SMR-04)

Admission risk factors

- Univariable (age- sex-adjusted)
  - non-AD, non-vascular dementia (age- and sex-adjusted HR; 95% CI: 1.67; 1.09-2.56)
  - any comorbidity (1.28; 1.00-1.65),
  - PSMS (HR per SD disadvantage; 95% CI: 1.18; 1.04-1.33)
  - NPI (1.22; 1.09-1.37)
- Multivariable (age- sex-adjusted)
  - only NPI score (HR per SD disadvantage; 95% CI: 1.21; 1.08-1.36)
  - Of NPI items, agitation (HR per SD increase; 95% CI: 1.28; 1.14, 1.43; P<0.001)

Conclusions

- Larger cohorts, ascertainment less certain
  - Sensitivity analyses only get you so far
  - Big picture work
- Longitudinal cohorts need consent to link at outset
  - Determining dementia outcomes allows reevaluation of previous results with hindsight
- Dementia cohorts allow assessment of the contribution of specific facets to important outcomes

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Acknowledgements

The work was undertaken by The University of Edinburgh Centre for Cognitive Ageing and Cognitive Epidemiology, part of the cross council Lifelong Health and Wellbeing Initiative (MR/K026992/1). Funding from the Biotechnology and Biological Sciences Research Council (BBSRC) and Medical Research Council (MRC) is gratefully acknowledged.

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