Kimberley Healthy Adults Project.
5 year follow-up of older Aboriginal Australians.
Dementia

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Melbourne Health, WA Centre for Healthy Aging,
Kimberley Aboriginal Medical Services Council
NHMRC Project Grant
Background:

• Aboriginal Australians- X 3-5 fold
  – 12.4% > 45 years (rural and remote, Kimberley) ¹
  – 13.4% > 60 urban NSW (La Perouse)²
  – Factors contributing: stroke, head injury, epilepsy

  ▪ Alberta First Nations: suggest a similar trend ³

Longitudinal data is needed for Indigenous groups

¹ Smith K et al 2010, ³ Broe A et al in press Alzheimer’s and Dementia, ⁴ Jacklin et al, 2013
Aims

1. To determine the incidence and predictors of dementia in a cohort of Aboriginal Australians over 5 years

2. To determine the stability of dementia diagnoses

2. To describe outcomes including death rates
What we did.

In 2004-2006: 363 people over the age of 45 years, living in 6 communities and 1 town were assessed: =Wave 1 (W1)

90% participation rate

All were invited to Wave 2 (W2):

74% participation rate

Included those in residential care facilities
Documented those who were away or had died
KHAP survey

• Adapted for local use

• Consultation and approval from previous communities

Information collected included
• KICA – Cog
• Lifestyle factors
• Medical History
• Functional abilities
• Carer information

• Summary reports sent to clinics and referrals made as appropriate
Doing the surveys
Specialist clinical review was organised for all people previously seen by specialist at W1; those at W2 with KICA score ≤36/39

Consensus diagnoses: Normal, Cognitive Impairment not Dementia (CIND) and Dementia
## Characteristics at wave 1 by cognitive status at W2 (percentages by row)

<table>
<thead>
<tr>
<th>W1</th>
<th>Normal (134)</th>
<th>CIND (27)</th>
<th>Dementia (28)</th>
<th>Deceased (109)</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>45-59yrs</td>
<td>97 (67.2)</td>
<td>11 (7.6)</td>
<td>3 (2.1)</td>
<td>33 (22.9)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>60-69</td>
<td>22 (35.5)</td>
<td>4 (6.5)</td>
<td>10 (16.1)</td>
<td>26 (41.9)</td>
<td></td>
</tr>
<tr>
<td>70-79</td>
<td>13 (20.6)</td>
<td>12 (19.0)</td>
<td>7 (11.1)</td>
<td>31 (49.2)</td>
<td></td>
</tr>
<tr>
<td>80+</td>
<td>2 (6.9)</td>
<td>0</td>
<td>8 (27.6)</td>
<td>19 (65.5)</td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>55 (39.8)</td>
<td>11 (7.8)</td>
<td>9 (6.5)</td>
<td>63 (45.6)</td>
<td>0.02</td>
</tr>
<tr>
<td>Female</td>
<td>79 (50)</td>
<td>16 (10)</td>
<td>19 (12)</td>
<td>46 (29)</td>
<td></td>
</tr>
</tbody>
</table>
Stability of cognitive diagnoses from W1 to W2

<table>
<thead>
<tr>
<th>Wave 1</th>
<th>Wave 2</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal (n=134)</td>
<td>Normal (n=230)</td>
<td>131 (57)</td>
<td>24 (10)</td>
<td>9 (4)</td>
</tr>
<tr>
<td>CIND (n=27)</td>
<td>CIND (n=28)</td>
<td>3 (11)</td>
<td>3 (11)</td>
<td>10 (35)</td>
</tr>
<tr>
<td>Dementia (n=28)</td>
<td>Dementia (n=40)</td>
<td>0 (0)</td>
<td>0 (0)</td>
<td>9 (23)</td>
</tr>
</tbody>
</table>

Those with dementia: 37% had AD, most unable to be classified
Dementia Incidence rate

• Participants were followed up 6.7±0.7 years

• Dementia
  – 7.3 (95% CI 3.7, 14.7) per 1,000 person years > 45 years
  – 21.0 (95% CI 10.5, 42.1) per 1,000 person-years in people aged > 60 years

• Cognitive impairment - CIND or dementia
  – 28.5 (95% CI 20.0, 40.5) per 1,000 person years > 45 years
  – 52.6 (95% CI 33.9, 81.5) per 1,000 person-years in people aged > 60 years
Longitudinal associations between factors measured at W1 and status at W2

Risk factors for decline from no cognitive impairment to cognitive impairment (dementia/CIND)

- Age 1.09 (1.05, 1.14)
- Head injury 2.62 (1.13, 6.08)
Cross-sectional associations between factors at W2 and status at W2

Factors associated with cognitive impairment (from normal cognition to CIND/dementia) were:

• Stroke 9.54 (2.39, 38.13)
• Head injury 3.74 (1.14, 12.24)
• Analgesics 13.48 (3.16, 57.44)
• Hypertension 1.03 (1.00, 1.06)
• Low BMI 0.90 (0.81, 1.00)
Conclusion

Dementia incidence is high in Aboriginal Australians living in remote regions

- 21/1000 person years over 60 years.
- Other high income countries (Ott et al 1997) - 9.2-10.7/1000 person yrs.
- Low-middle income (Prince et al 2012) - 9.9-15.7 per 1,000 person yrs

- Risk factors for developing cognitive impairment from normal cognition - age and head injury
- Associated factors - head injury, high systolic BP, analgesics, stroke, low BMI
- Potentially reversible factors: head injury, stroke, high BP. Analgesics??
Current and Future Studies

• Longitudinal study - urban area
• Explore our data on frailty, falls, incontinence, other conditions occurring at younger onset, mortality.
• Preventative measures, information sessions. Funding KAMSC population health. TAFE partnership.
• Improve detection at an earlier stage (KICA)
• Improve model of community care (Lungurra Ngoora)
• Caregiver empowerment, facilitating community based and caregiver driven support and care.
We gratefully acknowledge:
Participants (including those who are deceased), their family, council members, interpreters, health workers, clinics, KACS, KAMSC, KIS and many others

Communities of Ardyaloon, Mowanjum, Wirrimanu, Warmun, Looma, Junjuwa, Derby