Current evidence on dementia prevention, treatment, and care

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We have no relevant conflicts of interest.

Outline

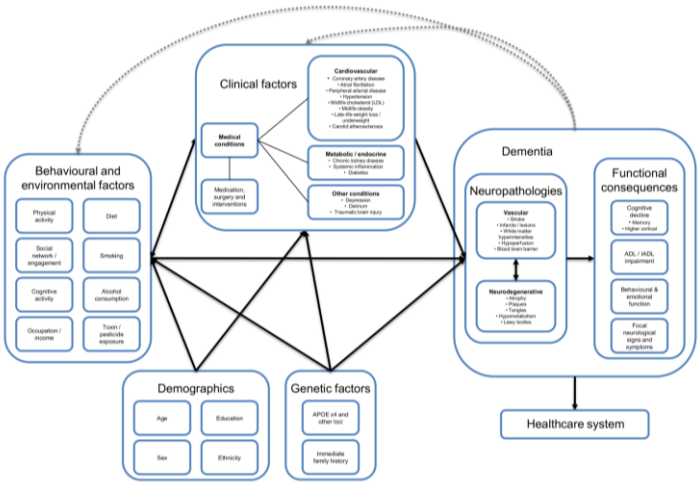
1. Prevention
2. Pharmacological interventions
3. Non-pharmacological interventions
4. Summarizing the evidence

William Utermohlen, 1999

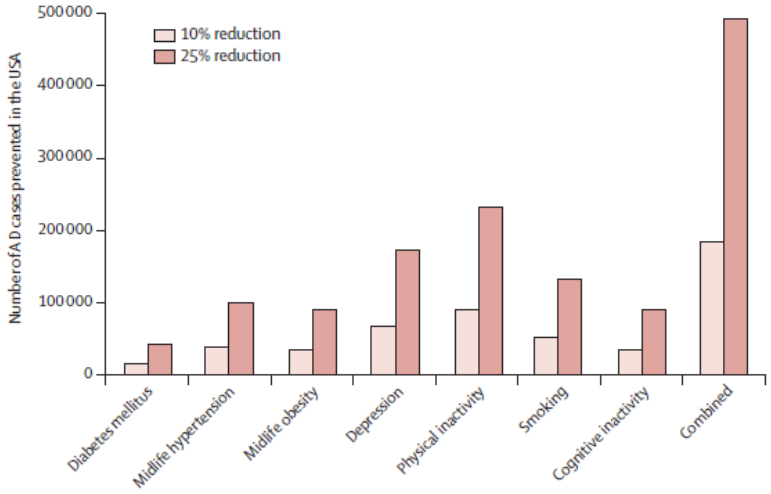
Dementia as a complex multicausal syndrome

1. Most people with dementia have a mixture of pathologies (not ‘pure’ AD)
2. There is a vascular and/or metabolic component to many (most?) cases
3. Targeting related risk factors is a key strategy
4. Dementia needs to be understood from a lifespan perspective
5. Little funding has been made available for primary prevention research

What are the risk factors for dementia?



AD cases potentially preventable through risk factor reduction



Barnes, D.E., & Yaffe, K. (2011). *Lancet Neurology.*

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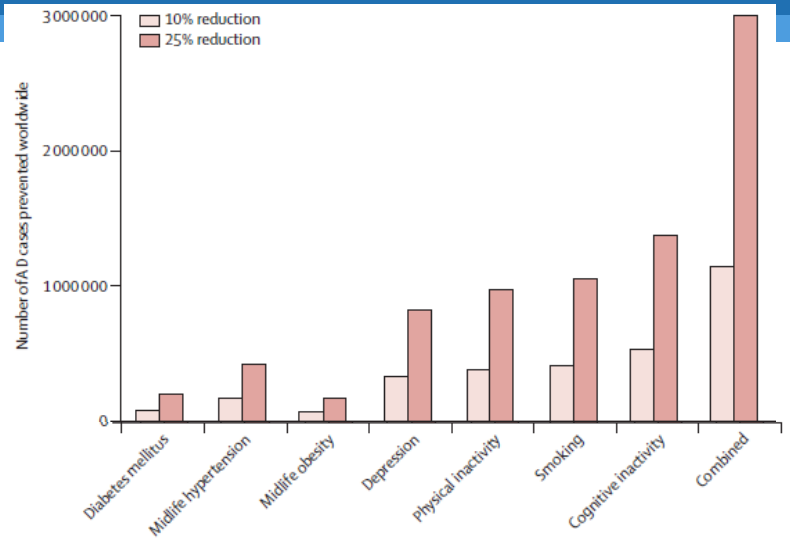

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Prospects of intervention

1. The search for ‘sufficient’ evidence for prevention is ongoing
2. Trials are often impractical or unethical (e.g. smoking and lung cancer)
3. The incidence of dementia may be declining due to modifiable risks (884,000 predicted in 2011 – 670,000 observed in CFAS II)
4. How long can we afford to ignore primary prevention?

Mathews, F.E., et al. (2013). *Lancet* .

NICE guidance

1.3.2 Preventive measures

1.3.2.1 The following interventions should not be prescribed as specific treatments for the primary prevention of dementia:

- statins
- hormone replacement therapy
- vitamin E
- non-steroidal anti-inflammatory drugs.

1.3.2.2 For the secondary prevention of dementia, vascular and other modifiable risk factors (for example, smoking, excessive alcohol consumption, obesity, diabetes, hypertension and raised cholesterol) should be reviewed in people with dementia, and if appropriate, treated.

http://publications.nice.org.uk/dementia-cg42/guidance#risk-factors-prevention-and-early-identification

A call for prevention

Public Health England

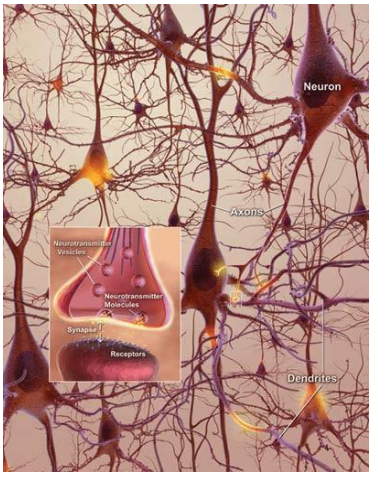
UK HEALTH PREVENTION FIRST FORUM

Blackfriars Consensus on promoting brain health:

Reducing risks for dementia in the population

http://www.ukhealthforum.org.uk/who-we-are/our-work/policy/dementia/

Current pharmacological treatments



Two main mechanisms:

1) Cholinesterase inhibitors slow disease activity that breaks down a key neurotransmitter. (*Donepezil*, *galantamine*, *rivastigmine* and *tacrine*.)

2) *Memantine* is an NMDA (N-methyl-D-aspartate) receptor antagonist, which works by regulating glutamate, a chemical messenger involved in memory.

How useful are current drugs?

Proven modest symptomatic benefits (including cognition) on a group level in trials

~half of patients benefit for around 6-12 months in practice

Some side effects

They do not treat the underlying disease

Target neurodegenerative pathways (not mixed or vascular pathology)

Primary care

Case management: improved client satisfaction and mental health; insufficient evidence on functional status, behavioural problems, carer stress, and cost-effectiveness

Integrated care: uncertain benefits – mortality, function, length of stay – NICE recommends

Consumer-directed care: improved patient and carer satisfaction but not clinical outcomes

Secondary care

Memory clinics: no evidence of better effectiveness or cost effectiveness of memory clinic follow-up than GP follow-up

Cognitive stimulation: benefits people with mild to moderate dementia in relation to cognitive function, quality of life, well-being

Little evidence on appropriateness or effectiveness of different models of secondary care for dementia

Community and social care

Community occupational therapy: improved patient symptoms; cost saving in a Dutch study

Information for PwD and carers: ↑ quality of life (both groups); no change symptoms, carer burden, ADLs, institutionalisation rates

Internet-based interventions and **Telephone support**: some benefit to carers

Telecare: benefits unclear. 2010 systematic review of 31 studies inconclusive

Residential care

Staff training: systematic reviews (2012, 2013): little evidence staff training improves BPSD, staff capacity, psychological well-being, or work performance. NICE supports

Environment: King's Fund *Enhancing the Healing Environment*: ↑ patient engagement, ↓ violence, aggression, falls, staff absence

Special Care Units: some benefits over normal nursing units for agitated behaviours

Non-pharma therapies (1)

Functional analysis for challenging behaviour: 2012 Cochrane Review: ↓ challenging behaviours, not mood, problem behaviours, carer burden.

Music therapy: 2011 Cochrane Review: no evidence to support or discourage

Reminiscence therapy: ↑ cognition, function, and mood at 4 to 6 weeks (Cochrane 2009); no evidence of effectiveness or cost-effectiveness at ten months vs usual care (2012 HTA)

Validation therapy: No evidence of benefit

Non-pharma therapies (2)

Exercise: Cochrane Review (2013; 16 trials): ↑ cognitive functioning and ADLs (not); unclear which components most important

Aromatherapy (Cochrane Review 2009)**, Light therapy** (Cochrane Review 2009), **Animal-assisted therapy, Massage, Environmental manipulation, Counselling, Acupuncture, Art therapies:** insufficient evidence to demonstrate benefit

Conclusions (1)

Interventions need to aggressively target a range of risk factors – no magic bullet

Pharmacological interventions give modest symptomatic benefits for some

In general, limited evidence regarding cost-effectiveness

Conclusions (2)

Good evidence for: case management, information services, cognitive stimulation therapy, exercise programmes

Compelling case for primary prevention (Blackfriars consensus)

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