5th Congress of the European Academy of Neurology

Oslo, Norway, June 29 - July 2, 2019

Teaching Course 8

Medical management issues of dementia – Role of the neurologist (Level 2)

Medical management issues in dementia

Kristian Steen Frederiksen
Copenhagen, Denmark

Email: kristian.steen.frederiksen@regionh.dk

Rigshospitalet
Danish Dementia Research Centre

FACULTY OF HEALTH AND MEDICAL SCIENCES
UNIVERSITY OF COPENHAGEN

REGION

Medical management issues in dementia

Teaching course "Medical management issues in dementia – Role of the neurologist" at EAN 2019

Kristian Steen Frederiksen, MD, PhD
Danish Dementia Research Centre
Rigshospitalet
Copenhagen, Denmark

GLOBAL EXCELLENCE IN HEALTH

REGION
Rigshospitalet
Danish Dementia Research Centre

FACULTY OF HEALTH AND MEDICAL SCIENCES
UNIVERSITY OF COPENHAGEN

I have nothing to disclose

Rigshospitalet Danish Dementia Research Centre

FACULTY OF HEALTH AND MEDICAL SCIENCES
UNIVERSITY OF COPENHAGEN

NEW European Academy of Neurology Guideline on "Medical management issues in dementia"

ean
the home of neurology

Rigshospitalet Danish Dementia Research Centre

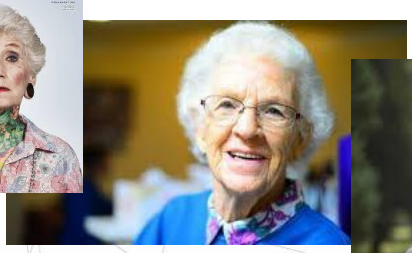
FACULTY OF HEALTH AND MEDICAL SCIENCES
UNIVERSITY OF COPENHAGEN

- **The need for medical management in dementia**
- **Specific medical management issues in dementia**

Rigshospitalet Danish Dementia Research Centre

FACULTY OF HEALTH AND MEDICAL SCIENCES
UNIVERSITY OF COPENHAGEN

Dementia has great impact on

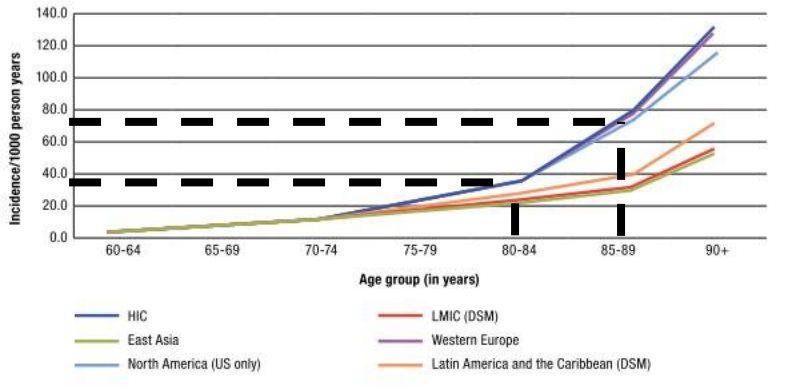


Rigshospitalet Danish Dementia Research Centre

FACULTY OF HEALTH AND MEDICAL SCIENCES
UNIVERSITY OF COPENHAGEN

7.45 million people in Europe suffer from dementia, with the number expected to increase to 9.9 million in 2030

Largest increase in prevalence is projected in low and middle income countries



Prince et al, 2015

Rigshospitalet Danish Dementia Research Centre

FACULTY OF HEALTH AND MEDICAL SCIENCES
UNIVERSITY OF COPENHAGEN

Years lived with disability

WHO GBD (2004)		
Condition	Million DALYs (% contribution to total)	Rank order
Ischaemic heart disease	67.6 (15.0%)	1
Stroke	55.4 (12.3%)	2
Chronic obstructive pulmonary disease	33.1 (7.3%)	3
Visual impairment	30.9 (6.9%)	4
Dementia	**18.8 (4.2%)**	**5**
Diabetes	15.5 (3.4%)	6
Hearing loss	13.0 (2.9%)	7
Trachea, bronchus or lung cancer	12.8 (2.8%)	8
Hypertensive heart disease	9.7 (2.2%)	9
Osteoarthritis	8.1 (1.8%)	10
Total (all conditions)	450.9	

Disability adjusted life years

WHO GBD (2004)		
Chronic disease/ condition	Million YLD (% contribution to total)	Rank order (YLD)
Visual impairment	20.9 (26.4%)	1
Dementia	**15.4 (13.1%)**	**2**
Hearing loss	13.0 (11.1%)	3
Musculoskeletal disorders	11.2 (9.6%)	4
Mental disorders	7.0 (6.0%)	5
Chronic respiratory	5.8 (5.0%)	6
Heart disease	4.7 (4.0%)	7
Diabetes/ endocrine	4.6 (3.9%)	8
Stroke	4.4 (3.8%)	9
Cancer	2.6 (2.2%)	10
Genitourinary disorders	0.8 (0.7%)	11
Digestive disorders	2.2 (1.9%)	12
Total YLD burden (all diseases)	117.0 (100%)	

Prince et al, 2015

Rigshospitalet Danish Dementia Research Centre

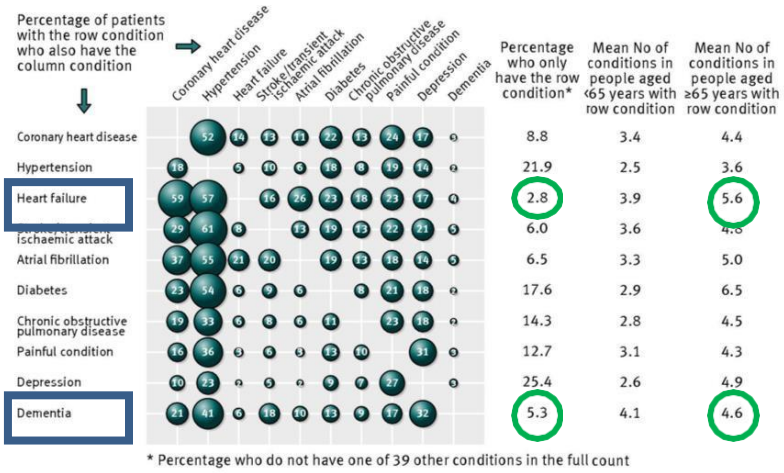
FACULTY OF HEALTH AND MEDICAL SCIENCES
UNIVERSITY OF COPENHAGEN

Why do patients with dementia need to see a neurologist ?

Rigshospitalet Danish Dementia Research Centre

FACULTY OF HEALTH AND MEDICAL SCIENCES
UNIVERSITY OF COPENHAGEN

It is a disease with many comorbidities



Guthrie et al, BMJ 2012;345:e6341

Rigshospitalet Danish Dementia Research Centre

FACULTY OF HEALTH AND MEDICAL SCIENCES
UNIVERSITY OF COPENHAGEN

Patients with dementia often also have…

- Loss of insight
- Loss of autonomy

Rigshospitalet Danish Dementia Research Centre

FACULTY OF HEALTH AND MEDICAL SCIENCES
UNIVERSITY OF COPENHAGEN

Patients with dementia often also have…

- Loss of insight
- Loss of autonomy
- Difficulties in communicating due to language impairment
- Have altered perception e.g. of pain
- Communicate discomfort differently
- Display behaviour not easily interpreted as elicited by discomfort
- Memory impairment which may prevent patients from reporting on symptoms

Rigshospitalet Danish Dementia Research Centre

FACULTY OF HEALTH AND MEDICAL SCIENCES
UNIVERSITY OF COPENHAGEN

- **Follow-up should be preplanned and proactive**
  - ”Call if you experience side-effects” will not be useful
- **Use caregivers as a ressource**
  - Make sure caregivers are present at consultations
- **Enhance communication**
  - Ask direct and specific questions instead of openended ones.
  - Adjust communication to the patients´abilities, e.g.
    - Speak slower than usual
    - Keep language simple
    - Ask one question at a time
    - Don´t rush responses

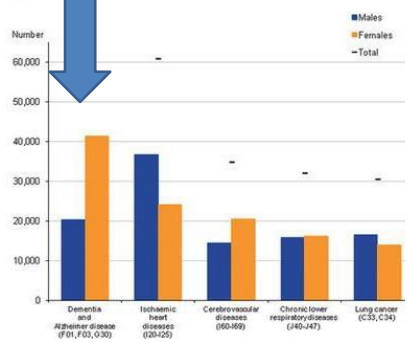
Rigshospitalet Danish Dementia Research Centre

FACULTY OF HEALTH AND MEDICAL SCIENCES
UNIVERSITY OF COPENHAGEN

In many cases dementia is caused by a progressive neurodegenerative disease

Figure 1: Number of deaths from top 5 leading causes, 2015

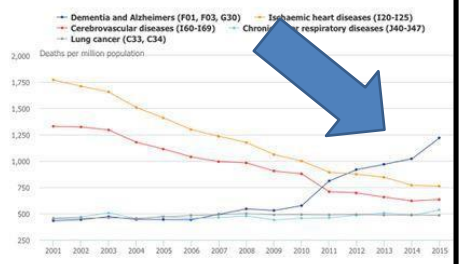
England an es



Source: Office for National Statistics

Figure 3: Female age-standardised mortality rates, for top 5 leading causes, 2001 to 2015

England and Wales



Source: Office for National Statistics

Rigshospitalet Danish Dementia Research Centre

FACULTY OF HEALTH AND MEDICAL SCIENCES
UNIVERSITY OF COPENHAGEN

Patients with dementia suffer from a number of associated neurologic and psychiatric symptoms

- **Behavioural and psychological symptoms of dementia**
  - Aggression, agitation
  - Depression, anxiety
  - Psychotic symptoms (e.g. delusions and visual hallucinations)
  - Wandering
  - Apathy
  - Irritability, hyperactivity
- **Motor symptoms**
  - Hemiparesis, dysarthria, urge incontinence
  - Unsteady gait and falls
  - Parkinsonism
  - Chorea, dystonia
- **Seizures/epilepsy**
- **Sleep disturbances**

Rigshospitalet Danish Dementia Research Centre

FACULTY OF HEALTH AND MEDICAL SCIENCES
UNIVERSITY OF COPENHAGEN

Knowledge about specific dementia diseases is required

Lewy body dementia:

- Hypersensitivity to antipsychotics
- Management of REM sleep behaviour disorder
- Management of hallucinations
- Management of parkinsonism with dopaminergic drugs

Genetic counselling

Rigshospitalet Danish Dementia Research Centre

FACULTY OF HEALTH AND MEDICAL SCIENCES
UNIVERSITY OF COPENHAGEN

Medical management issues in dementia

Rigshospitalet Danish Dementia Research Centre

FACULTY OF HEALTH AND MEDICAL SCIENCES
UNIVERSITY OF COPENHAGEN

Medical management issues in dementia

- **Vascular risk factors**
- **Nutrition**
- **Motor symptoms**
- **Driving**
- **Sleep**
- **Seisures and epilepsy**
- **Review of medications**
- **Assessment of pain**
- **End of life decisions and palliative care**

Rigshospitalet Danish Dementia Research Centre

FACULTY OF HEALTH AND MEDICAL SCIENCES
UNIVERSITY OF COPENHAGEN

Management of vascular risk factors

- Hypertension
- Hypercholesterolemia
- Atrial fibrillation
- Type 2 diabetes
- Obesity and inactivity

Rigshospitalet Danish Dementia Research Centre

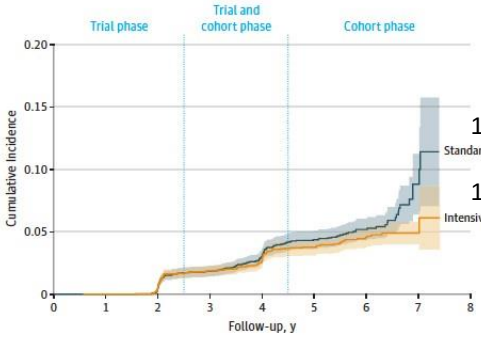
FACULTY OF HEALTH AND MEDICAL SCIENCES
UNIVERSITY OF COPENHAGEN

JAMA | Original Investigation

Effect of Intensive vs Standard Blood Pressure Control on Probable Dementia
A Randomized Clinical Trial

The SPRINT MIND Investigators for the SPRINT Research Group

Figure 2. Probable Dementia by Treatment Group



176 dementia cases

149 dementia cases

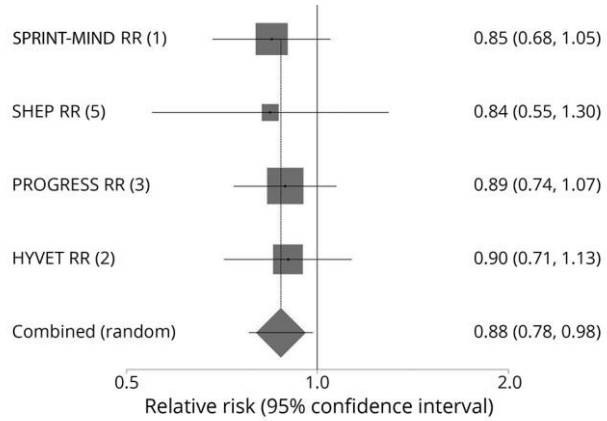
No. at risk

Standard treatment	4285	4282	4168	3886	2829	2107	989	87	0
Intensive treatment	4278	4277	4171	3917	2893	2189	1027	93	0

Rigshospitalet Danish Dementia Research Centre

FACULTY OF HEALTH AND MEDICAL SCIENCES
UNIVERSITY OF COPENHAGEN

Hypertension
Prevention of dementia/MCI



Peters et al, Neurology. 2019 May 21;92(21):1017-1018

Rigshospitalet Danish Dementia Research Centre

FACULTY OF HEALTH AND MEDICAL SCIENCES
UNIVERSITY OF COPENHAGEN

Effects of Hypertension on Cerebrovascular Structure and Function

Vascular Remodeling and Stiffening

Small-Vessel Disease

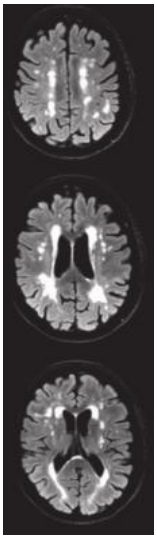
Microvascular rarefaction

Change in endothelial function

Disrupted neurovascular coupling and autoregulation

Deposition of beta-amyloid

Iadecola et al, Hypertension. 2016 December ; 68(6): e67–e94.



Rigshospitalet Danish Dementia Research Centre

FACULTY OF HEALTH AND MEDICAL SCIENCES
UNIVERSITY OF COPENHAGEN

Adverse events of antihypertensives

- **Falls**
  - 4 studies did not find an association in multivariate analysis (Allan 2009; Asada 1996; Eriksson 2007; Pellfolk, Gustafsson 2009)
- **Ortostatic hypotension**
  - 2 studies found that treatment was associated with increased risk of ortostatic hypotension (Anderson 2009; Mehrablan 2010)

Rigshospitalet Danish Dementia Research Centre

FACULTY OF HEALTH AND MEDICAL SCIENCES
UNIVERSITY OF COPENHAGEN

Management of hypertension in dementia

- Intensive vs. less intensive ?
- Should treatment targets from guidelines for cognitively healthy elderly patients be extrapolated to patients with dementia?

Rigshospitalet Danish Dementia Research Centre

FACULTY OF HEALTH AND MEDICAL SCIENCES
UNIVERSITY OF COPENHAGEN

EAN Guideline "Medical management issues in dementia"

Research Question 2: Does systematic management of vascular risk factors in patients with dementia slow the progression of dementia?

Level of evidence: There is insufficient evidence to make a general statement

Good practice statement: Systematic management of vascular risk factors should be performed in patients with mild to moderate dementia

Rigshospitalet Danish Dementia Research Centre

FACULTY OF HEALTH AND MEDICAL SCIENCES
UNIVERSITY OF COPENHAGEN

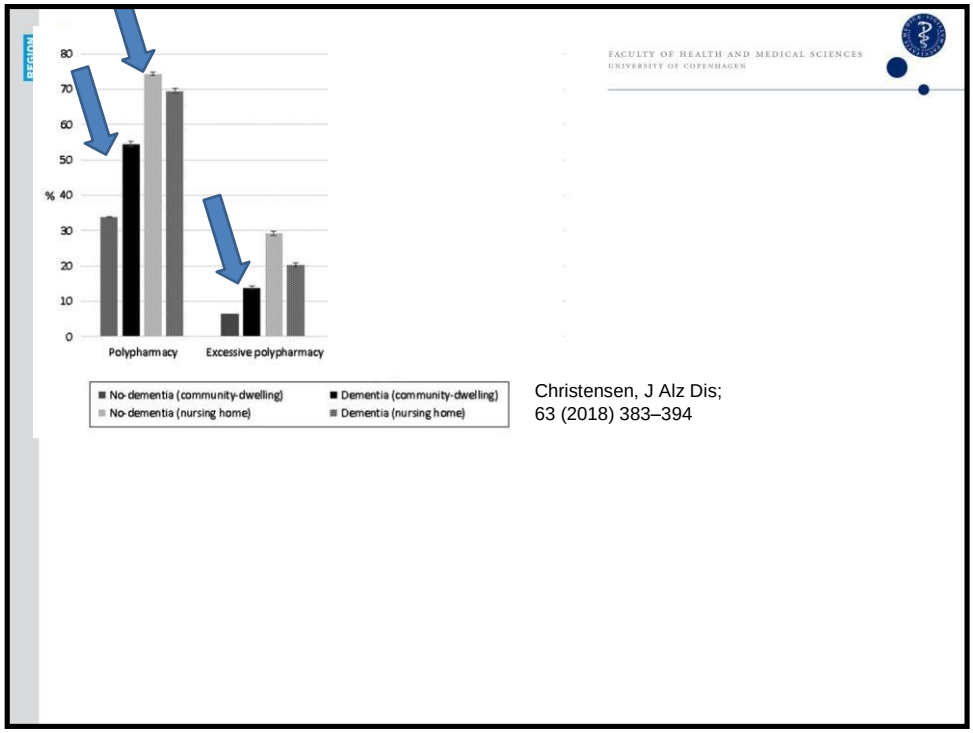
Good practice points

- There is no reason to believe that patients with dementia benefit less
- Prevention of vascular pathology may provide an important added value in patients with dementia.
- Treatment should be individualized. Consider treatment carefully in patients with
  - falls
  - low compliance
  - when life expectancy may be short and
  - advanced dementia due to safety concerns and uncertainty regarding the balance between harm and benefit

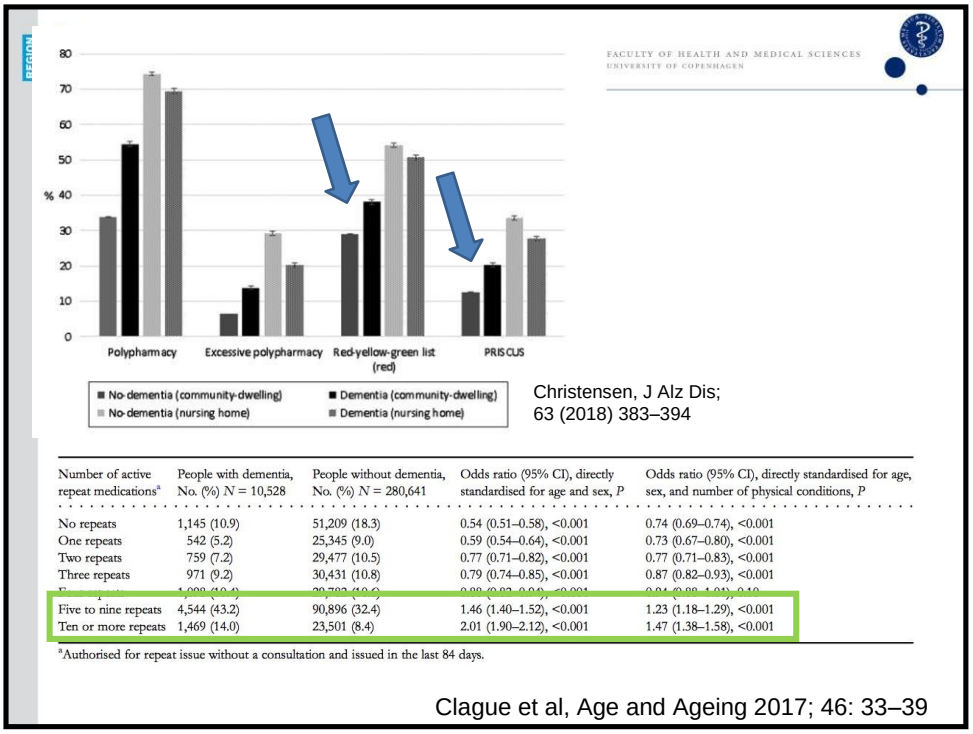
Rigshospitalet Danish Dementia Research Centre

FACULTY OF HEALTH AND MEDICAL SCIENCES
UNIVERSITY OF COPENHAGEN

Review of medication and inappropriate medication



Christensen, J Alz Dis; 63 (2018) 383–394

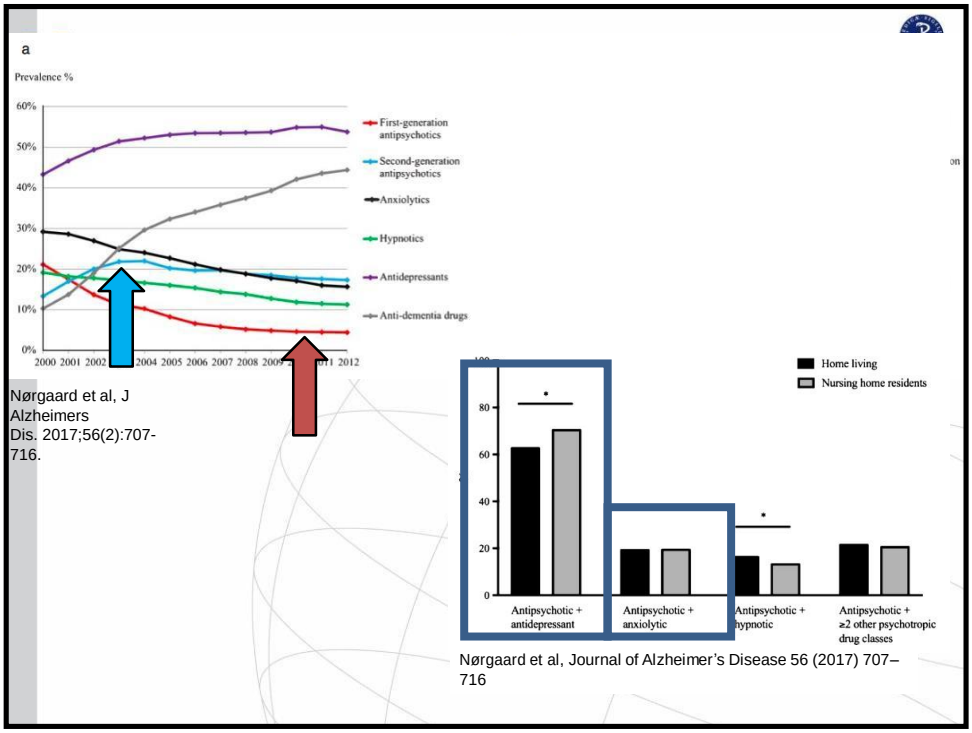


Christensen, J Alz Dis; 63 (2018) 383–394

Number of active repeat medications[a]	People with dementia, No. (%) N = 10,528	People without dementia, No. (%) N = 280,641	Odds ratio (95% CI), directly standardised for age and sex, P	Odds ratio (95% CI), directly standardised for age, sex, and number of physical conditions, P
No repeats	1,145 (10.9)	51,209 (18.3)	0.54 (0.51–0.58), <0.001	0.74 (0.69–0.74), <0.001
One repeats	542 (5.2)	25,345 (9.0)	0.59 (0.54–0.64), <0.001	0.73 (0.67–0.80), <0.001
Two repeats	759 (7.2)	29,477 (10.5)	0.77 (0.71–0.82), <0.001	0.77 (0.71–0.83), <0.001
Three repeats	971 (9.2)	30,431 (10.8)	0.79 (0.74–0.85), <0.001	0.87 (0.82–0.93), <0.001
Five to nine repeats	4,544 (43.2)	90,896 (32.4)	1.46 (1.40–1.52), <0.001	1.23 (1.18–1.29), <0.001
Ten or more repeats	1,469 (14.0)	23,501 (8.4)	2.01 (1.90–2.12), <0.001	1.47 (1.38–1.58), <0.001

[a]Authorised for repeat issue without a consultation and issued in the last 84 days.

Clague et al, Age and Ageing 2017; 46: 33–39



Nørgaard et al, J Alzheimers Dis. 2017;56(2):707-716.

Nørgaard et al, Journal of Alzheimer's Disease 56 (2017) 707–716

Rigshospitalet Danish Dementia Research Centre

FACULTY OF HEALTH AND MEDICAL SCIENCES
UNIVERSITY OF COPENHAGEN

Barriers to deprescribing and optimal prescribing of medication in patients with dementia

- Inadequate guidelines
- Incomplete medical histories
- Lack of time
- Avoidance of negative consequences
- Established beliefs in the benefits and harms of medication use and others
- Diminished decision making capacity
- Difficulties with comprehension and communication
- Difficulties establishing goals of care

Reeve et al, Curr Clin Pharmacol. 2015;10(3):168-77.

Rigshospitalet Danish Dementia Research Centre

FACULTY OF HEALTH AND MEDICAL SCIENCES
UNIVERSITY OF COPENHAGEN

Barriers to deprescribing and optimal prescribing of medication in patients with dementia

Inadequate guidelines:

Beers criteria J Am Geriatr Soc. 2015 Nov;63(11):2227-46.

STOPP (Screening Tool of Older Persons' potentially inappropriate Prescriptions) criteria Age Ageing. 2015 Mar;44(2):213-8

PRISCUS (Potentially inap- propriate medications in the elderly) list Dtsch Arztebl Int 107, 543-551

- Difficulties with comprehension and communication
- Difficulties establishing goals of care

Reeve et al, Curr Clin Pharmacol. 2015;10(3):168-77.

Rigshospitalet Danish Dementia Research Centre

FACULTY OF HEALTH AND MEDICAL SCIENCES
UNIVERSITY OF COPENHAGEN

Barriers to deprescribing and optimal prescribing of medication in patients with dementia

Avoidance of negative consequences

Established beliefs in the benefits and harms of medication use and others

"If it ain't broke, don't try to fix it"

"This problem with medication is too complex/take too much time"

"But that's what they came in on"

Reeve et al, Curr Clin Pharmacol. 2015;10(3):168-77.

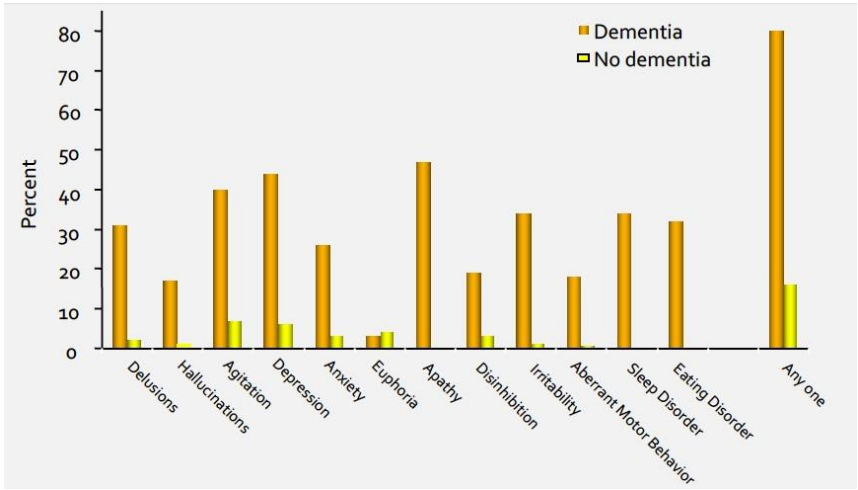
Rigshospitalet Danish Dementia Research Centre

FACULTY OF HEALTH AND MEDICAL SCIENCES
UNIVERSITY OF COPENHAGEN

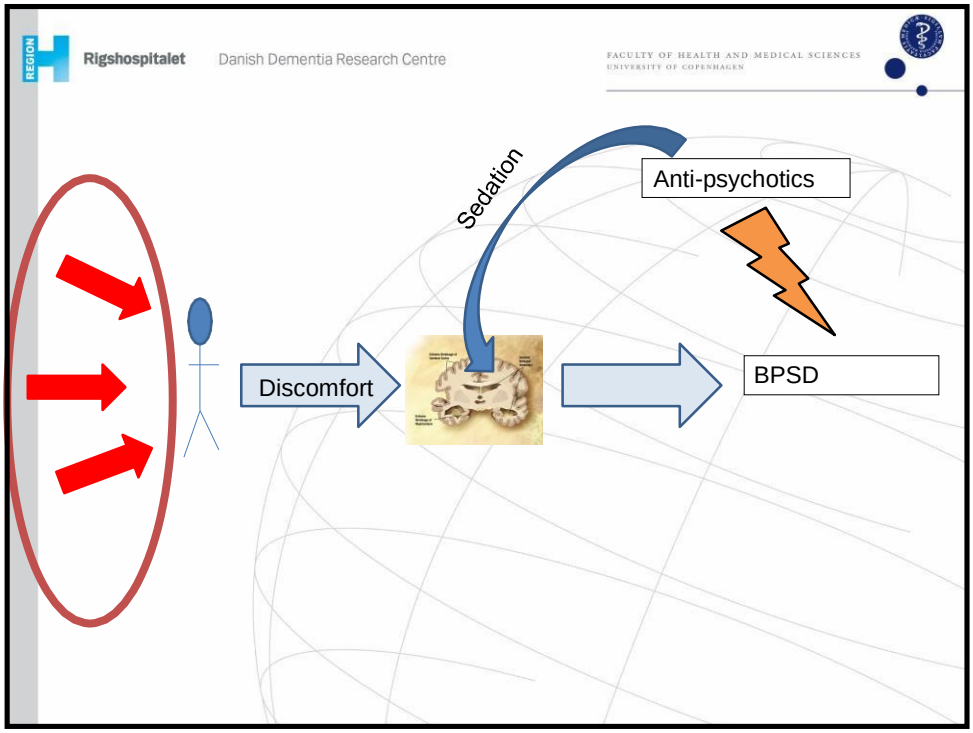
Treatment of behavioural and psychological symptoms of dementia

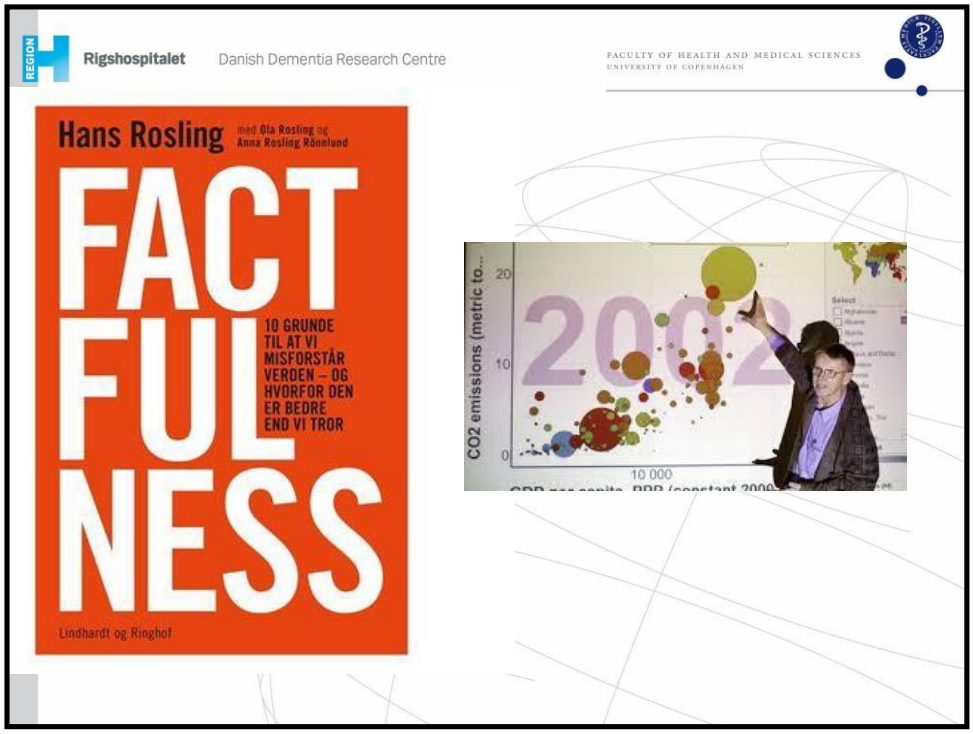
Rigshospitalet Danish Dementia Research Centre

FACULTY OF HEALTH AND MEDICAL SCIENCES
UNIVERSITY OF COPENHAGEN



LyketsosCG et al. Am J Psychiatry. 2000;157:708-714.
LyketsosCG et al. JAMA. 2002;288:1475-1482.
Steffens et al. Am J Alz Dis Other Dem.2005;20:367-373


Rigshospitalet
Danish Dementia Research Centre
FACULTY OF HEALTH AND MEDICAL SCIENCES
UNIVERSITY OF COPENHAGEN
Sedation
Anti-psychotics
Discomfort
BPSD


Rigshospitalet
Danish Dementia Research Centre
FACULTY OF HEALTH AND MEDICAL SCIENCES
UNIVERSITY OF COPENHAGEN
Hans Rosling
med Ola Rosling og Anna Rosling Rönnlund
FACTFULNESS
10 GRUNDE TIL AT VI MISFORSTÅR VERDEN – OG HVORFOR DEN ER BEDRE END VI TROR
Lindhardt og Ringhof
CO2 emissions (metric to...
20
10
0
2002
10 000

Rigshospitalet Danish Dementia Research Centre

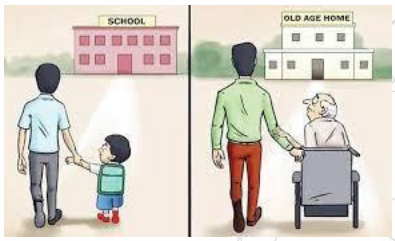
FACULTY OF HEALTH AND MEDICAL SCIENCES
UNIVERSITY OF COPENHAGEN

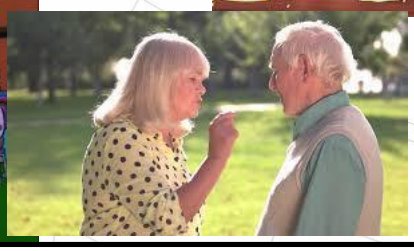
1. Define the problem behavior
   a. Who is the person with the problematic behavior?
2. Define when/where it occurs
   a. Did something trigger the behavior?
3. Document and measure the behavior
   a. Helps to determine treatment goal
   b. Events which happened yesterday is given higher importance than events further in the past → is there a problem ?
4. Determine what is the desired change
   a. Mutual understanding and cooperation with caregivers is paramount

Rigshospitalet Danish Dementia Research Centre

FACULTY OF HEALTH AND MEDICAL SCIENCES
UNIVERSITY OF COPENHAGEN

Always carry out a physical assessment in combination with necessary laboratory examinations





Rigshospitalet Danish Dementia Research Centre

FACULTY OF HEALTH AND MEDICAL SCIENCES
UNIVERSITY OF COPENHAGEN

Institute interventions directed at the underlying cause

- Operant conditioning
- Changes in physical environment
- Change in routine
- Physical activity (e.g. against sleep disturbances)
- Education for carers

Rigshospitalet Danish Dementia Research Centre

FACULTY OF HEALTH AND MEDICAL SCIENCES
UNIVERSITY OF COPENHAGEN

Consider treatment with anti-psychotics:

Severe Aggression which puts the patient or surroundings in danger

Psychotic symptoms

In many instances aggression may be handled with non-pharmacological interventions

Institute anti-dementia medication were indicated

Rigshospitalet Danish Dementia Research Centre

FACULTY OF HEALTH AND MEDICAL SCIENCES
UNIVERSITY OF COPENHAGEN

Take home message

- Medical management in dementia goes beyond anti-dementia medication
- Dementia is associated with a high prevalence of comorbidities and related symptoms
- Contact and interaction with professional caregivers may be challenging for patients with dementia due to reduced insight and difficulties in communication
- Follow-up should be proactive and preplanned to ensure adequate treatment
- Upcoming EAN guideline on ”Medical management issues in dementia” in early 2020.