

How to prevent delirium in nursing home

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CONFLICT OF INTEREST DISCLOSURE

I have no potential conflict of interest to report

Outline

1. Introduction
2. Nursing home resident
3. Risks factors of delirium in NH
4. Prevalence of delirium in NH
5. Complications of delirium in NH
6. Management strategies to prevent delirium in NH
7. Take home messages

1. Introduction

Delirium is often unrecognized (50 %)

The key components delirium diagnosis

1. Disturbance in attention and awareness
2. Onset over a short period (hours to days) with tendency to fluctuate over the course of the day
3. Change in cognition or perceptual disturbance
4. Changes not accounted for by an established underlying disease or coma
5. Evidence from the history, examination or investigations that the disturbance is caused by a general medical condition

2. Nursing home

- A nursing home is the usual place of residence
- Personal care, supervision for medication and some help to day to day activities
- 4.5 % > 65 year and 20 % > 85 year lived in nursing home (Soule 2005)
- High prevalence of dementia, older age, co-morbid illness and polypharmacy

3. Nursing home residents have a high risk of delirium

Risk factor of delirium

- Age
- Cognitive impairment
- Immobility
- Sensory impairment
- Medication use
- Physical restraints
- Protein energy malnutrition
-

Acute medical problem

- Respiratory infection
- Urinary tract infection
- Stroke
- Injury
- Pain
- Exacerbation of heart and/or lung disease
- Dehydration
- ...

4. Prevalence of delirium in NH

- Prevalence: from 3 to 33 %
- Duration: from 1 week to 3 months
- Underdiagnoses: from 33 to 75 %

5. Complication of delirium in nursing home

- Admission to Hospital
- Increase risk of mortality
- Decline of cognitive function
- Developing dementia
- Decline of ADL function
- Fall



No differences between residents who stay in NH and those who are hospitalized

6. Management strategies to prevent delirium in NH

Non-pharmacological intervention

- Target to one precipitating factor
- Target the multiples potential precipitating factors for delirium to reduce their cumulative effect
- Only 2 studies were identified

Pharmacological intervention

- There is no study in NH sitting

6. Management strategies to prevent delirium in NH

Culp et al 2003: RCT of a 4-week hydration management intervention

- 98 residents in 7 nursing homes in the United States
- Follow-up at 4 weeks post-randomisation
- Fluid goal intake was calculated according to participant body weight
 - No effect of a hydration-based intervention on delirium incidence

6. Management strategies to prevent delirium in NH

RCT of the Geriatric Risk Assessment Med Guide (GRAM) software program

- 3538 residents across 25 NH in the United States
- Identification of the medications that might contribute to delirium and falls
- Medication review by a pharmacist
- Proactive monitoring of side effects was initiated by NH staff
 - Significant reduction in delirium incidence by 58 %
 - No evidence of reduction in unplanned hospitalization, in mortality or in falls

6. Management strategies to prevent delirium in NH

Development and pilot-testing of a multicomponent specific management program to prevent delirium in NH setting adapted from the **Hospital Elder Life Program (HELP)**

- HELP has been shown to be effective on delirium prevention in hospital older adults
- Delirium risk factors :
 - Cognitive impairment
 - Immobility
 - Dehydration
 - Undernutrition
 - Sleep problems
 - Medications

Tailored prevention
to each resident

6. Management strategies to prevent delirium in NH

Development and pilot-testing of a multicomponent specific management program to prevent delirium in NH setting adapted from the **Hospital Elder Life Program (HELP)**

- Nursing assistant delivers delirium-risk-reduction component to each resident at the **beginning of an acute illness**
- 30 to 60 minutes per resident
- NA communicated with the NH staff regularly
- 143 residents during 231 acute illness episodes over a 18 months period
- 43 residents with acute illness did not receive the intervention

6. Management strategies to prevent delirium in NH

Hospital Elder Life Program (HELP)

Intervention Component	Delirium risk factor	Description
Cognitive impairment	Cognitive impairment	Day, month, year, season and place reviewed using props; hearing aids and glasses provided; daily
Cognitive impairment	Cognitive impairment	Discussion of past using resident's own or other pictures; reading, music, games w/props; daily
Mobilization	immobility	"Head-to-toe" physical activity at resident's max ability, including active range of motion, walking, chair stands; daily
Hydration	Dehydration	Two 6-ounce cups of fluid orally unless not indicated (e.g., congestive heart or renal failure or at risk for fluid overload); daily
Snack	Undernutrition	Yogurt or nutritional shake unless within 15 min before or after a meal; daily
Sleep or relaxation	Sleep problems; Medications	Massage, warm drink, quiet music for those who report sleep difficulties; daily in PM
Medication alerts	Medications	Computerized alerts to medical staff of prescribed meds associated with delirium

6. Management strategies to prevent delirium in NH

Development and pilot-testing of a multicomponent specific management program to prevent delirium in NH setting adapted from the **Hospital Elder Life Program (HELP)**

- Prevalence of delirium : 18 %
- Comparison with non intervention residents
 - Transferred to the hospital : 13.2 % vs 23.9 %
 - Mortality : 11.3 % vs 15.4 %
 - No comparison with prevalence of delirium

6. Management strategies to prevent delirium in NH

Development and pilot-testing of a multicomponent specific management program to prevent delirium in NH setting adapted from the **Hospital Elder Life Program (HELP)**

- NA intervention:
 - increased care intensity with an additional care of 30 to 60 minutes for each resident
 - reduce NH staff stress → improve job satisfaction
 - prevent hospital transfer → decrease healthcare costs and be cost-effective despite the extra staffing required
- More data need

6. Management strategies to prevent delirium in NH

Stop Delirium: multicomponent specific management program to prevent delirium in NH :
a mixed-methods feasibility study

- Evidence from research literature
- Its aims were to modify key resident and environmental delirium risk factors by improving the quality of care
- Delirium risks factors: pain, infection, dehydration, poor nutrition, constipation, polypharmacy, sensory impairment, limited mobility and sleep disturbance

6. Management strategies to prevent delirium in NH

Stop Delirium: a complex intervention to prevent delirium in care homes : a mixed-methods feasibility study

Description of home care staff :

- 75.9 % had not nursing training
- Little capacity to take new work
- Aggression and confusion are present every day
- Various strategies to manage delirium
- High turnover of NH staff, 32 % during 10 months

→ Most of NH staff need specific educational training

6. Management strategies to prevent delirium in NH

Stop Delirium: a complex intervention to prevent delirium in care homes : a mixed-methods feasibility study

- Specialist delirium practitioners (DP)
- Based on expertise of staff in knowing residents
- Interactive and flexible method based to the need of NH staff
- DP was identified opportunities for delirium prevention through the development of local care pathways
- Solutions were adapted to the NH environment

6. Management strategies to prevent delirium in NH

Stop Delirium: a complex intervention to prevent delirium in care homes : a mixed-methods feasibility study

Pilot trial of Stop Delirium! (PiTStop)

- Objectives:
 - determine the feasibility and the best methodology used for implementation of stop delirium
 - assess its impact :
 - on prevalence, severity and duration of delirium
 - on fall, mortality and hospital admission
- Study is underway 😊 ...

6. Management strategies to prevent delirium in NH

Development of a **Delirium Risk Screening Tool**

identify the NH-Resident who are most at risk of delirium

- 136 potential risks factors were considered and 20 risk factors were selected
- 206 residents without delirium at baseline in Canada
- 6 months follow-up
- 7.6 % delirium/week

6. Management strategies to prevent delirium in NH

Development of a **Delirium Risk Screening Tool**

- The best-performing screening tool :

1. Complete dependent on personal hygiene
2. Emotional problems
3. Restless

Already known by the NH staff

4. Inability to name correct month
5. Inability to copy design

Assessed at the bedside

6. Management strategies to prevent delirium in NH

Development of a **Delirium Risk Screening Tool**

Score $\geq 2/5$

- sensitivity 90 % and specificity 59 %
- positive predictive value 52 %

Score $\geq 3/5$

- Sensitivity 63 % specificity 85 %
- positive predictive value 66 %

- The residents identified **+** could be targeted for closer monitoring and preventives interventions
- Tool validation is needed

6. Management strategies to prevent delirium in NH

Symptoms of delirium predict incident delirium

- Does the presence of one or more Cognitive Assessment Method (CAM) core symptoms of delirium predict incidence of delirium ?
- 93 % of incidence episodes of delirium were preceded by one or more CAM core symptoms of delirium (Cole et al. 2012)

6. Management strategies to prevent delirium in NH

Symptoms of delirium predict incident delirium

CAM core symptoms of delirium

- Fluctuating course
- Inattention
- Disorganized thinking
- Altered level of consciousness

- 273 patients without delirium at the baseline were followed during 6 months

CAM criteria for delirium

1. **Acute** onset and fluctuating course
2. Inattention
- and**
3. Disorganized thinking
- or**
- Altered consciousness

- CAM was repeated weekly for six months

6. Management strategies to prevent delirium in NH

Symptoms of delirium predict incident delirium

→ 14.7 % delirium during 6 months of follow-up

- 1 CAM core symptom : HR 2.2
- 3 CAM core symptom : HR 3.8
- Time between the beginning presence of CAM core symptom and the delirium was 7.4 weeks

The more symptoms present
The greater is the risk.

6. Management strategies to prevent delirium in NH

Why CAM core symptoms of delirium predicted incident delirium ?

- The symptom of delirium may represent a **prolonged prodrome** to delirium
- The presence of the symptom may be a marker of an **underlying medical condition**
- The symptom of delirium may be represent a **sub syndromal delirium**
- A delirium may be present but unrecognized because the **full diagnosis is missed**

7. Take home messages

- The burden of delirium in nursing home is considerable
- A complex intervention is feasible and involves improving the quality of care for resident by focusing on the delirium risk factors
- There is no clinical or cost effective specific interventions to prevent delirium in NH setting
- Further research is needed

7. Take home messages

- The optimization of the prescription drug in any place is essential
- In last resort, the evidence from the hospital population may be apply to the NH setting without harming residents

Thank you for your attention

6. Management strategies to prevent delirium in NH

Success of the development of a prevention program

- Quality of solution proposed and material used
- Acceptable solutions for patients and nursing staff