Medikamentell og ikke-medikamentell håndtering av delirium

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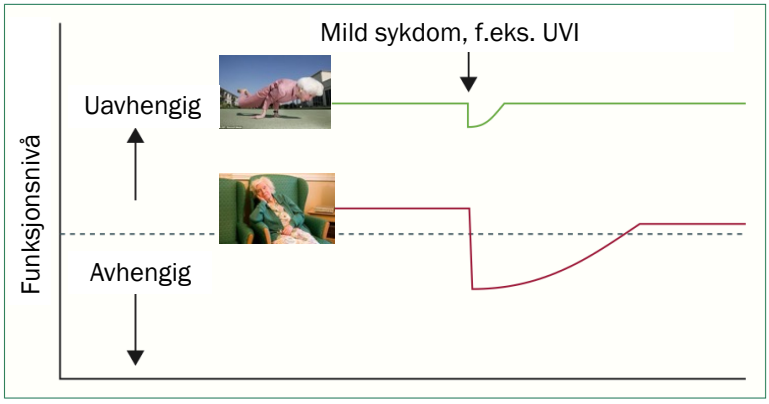


Clegg *et al.*, Lancet 2013

Gerd Andersen, 82 år gammel

Tidligere sykdommer:
Hypertensjon, atrieflimmer,
hjertesvikt NYHA kl II.
Innlagt med pneumoni 1 år siden.
Økende kognitiv svikt siste 3 år.

Tilsyn fra hj.spl hver morgen for å sikre at hun tar sine medisiner.

Den 9/10 kl 09.00: hj.spl finner henne sovende på sofaen. Ustelt. Må følges til badet, går med støtte. Må ha hjelp i stell.

Hva er et delirium?

En klinisk diagnose med følgende kjernesymptomer

Akutt kognitiv endring
Oppmerksomhetssvikt
Redusert våkenhet/agitasjon
Hallusinasjoner og vrangforestillinger

Har en underliggende årsak

Visitt på ortopedisk avdeling

1-sengen

82 år gammel dame, operert grunnet hoftebrudd for 2 dager siden. I natt: rebelsk, hallusinert, rev ut veneflon og urinkateter, prøvde å klatre ut av sengen. Fikk 2 mg Haldol, 5 mg Stesolid og 50 mg Nozinan før hun sovnet.

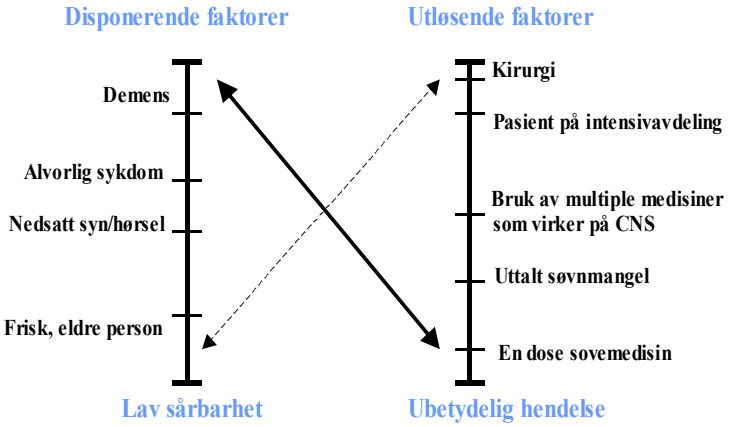
2-sengen

84 år gammel dame, operert grunnet hoftebrudd for 2 dager siden. Småslumrer, lar seg kun delvis vekke, svarer i hytt og vær.

Et delirium har alltid en årsak

Er et symptom på underliggende tilstand

Atferd er kommunikasjon!



Inouye et.al. JAMA 1996

Sykehuset i Vestfold

Hvor vanlig er delirium?

Tidsskriftet
DEN NORSKE LEGEFORENING

Delirium og kognitiv svikt blant eldre i norske akuttmottak

ORIGINALARTIKKEL

SIGURD EVENSEN
E-post: sigurd.evensen@ntnu.no
Diakonhjemmet Sykehus
og
Institutt for nevromedisin og bevegelsesvitenskap
NTNU
Han har bidratt med ideen til prosjektet, prosjektplanlegging, datainnsamling (St. Olavs hospital), primær utarbeiding av manus og har godkjent den siste manusversjonen.
Sigurd Evensen er spesialist i geriatri, overlege og stipendiat.
Forfatter har fylt ut ICMJE-skjemaet og oppgir ingen interessekonflikter.

INGVILD SALTVEDT

Sykehuset i Vestfold

Evensen et al., 2019

Eldre innlagt i sykehus: >20%

Hoftebruddspasienter: 50%

- Preoperativt delirium: 20% (OUS, Juliebø et al., 2009)

Etter TAVI (transkateter-aortaklaff innleggelse): 44%

Etter åpen klaffekirurgi: 66% (Eide et al, Am J Cardiol 2015)

Intensivavdelinger: svært varierende tall→ 30-80%
(Cavallazzi et al., Ann Intensive Care 2012)

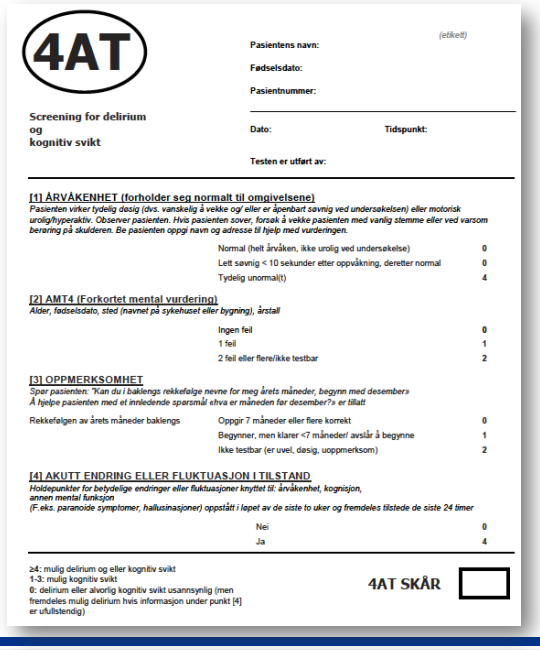
Delirium blir oversett

Delirium blir ikke oppdaget hos 50% av pasientene.

76 % av hypoaktive delirium ble ikke fanget opp av lege i akutt-mottak. (Han et al., Acad Emerg Med, 2009)

For hvert 2. døgn i aktivt delirium øker mortaliteten med 11%.
(Gonzales et al, Psychosomatics 2009)

Hypoaktivt delirium ofte assosiert med dårligere prognose.



4AT

Screening for delirium og kognitiv svikt

(etikett)

Pasientens navn:

Fødselsdato:

Pasientnummer:

Dato: Tidspunkt:

Testen er utført av:

[1] ÅRVÅKENHET (forholder seg normalt til omgivelsene)

Pasienten virker tydelig døsig (dvs. vanskelig å vekke og/ eller er åpenbart søvnig ved undersøkelsen) eller motorisk urolig/hyperaktiv. Observer pasienten. Hvis pasienten sover, forsøk å vekke pasienten med vanlig stemme eller ved varsom berøring på skulderen. Be pasienten oppgi navn og adresse til hjelp med vurderingen.

Normal (helt årvåken, ikke urolig ved undersøkelse)	0
Lett søvnig < 10 sekunder etter oppvåkning, deretter normal	0
Tydelig unormal(t)	4

[2] AMT4 (Forkortet mental vurdering)

Alder, fødselsdato, sted (navnet på sykehuset eller bygning), årstall

Ingen feil	0
1 feil	1
2 feil eller flere/ikke testbar	2

[3] OPPMERKSOMHET

Spør pasienten: "Kan du i baklengs rekkefølge nevne for meg årets måneder, begynn med desember»
Å hjelpe pasienten med et innledende spørsmål «hva er måneden før desember?» er tillatt

Rekkefølgen av årets måneder baklengs	Oppgir 7 måneder eller flere korrekt	0
	Begynner, men klarer <7 måneder/ avslår å begynne	1
	Ikke testbar (er uvel, døsig, uoppmerksom)	2

[4] AKUTT ENDRING ELLER FLUKTUASJON I TILSTAND

Holdepunkter for betydelige endringer eller fluktuasjoner knyttet til: årvåkenhet, kognisjon, annen mental funksjon
(F.eks. paranoide symptomer, hallusinasjoner) oppstått i løpet av de siste to uker og fremdeles tilstede de siste 24 timer

Nei	0
Ja	4

≥4: mulig delirium og eller kognitiv svikt
1-3: mulig kognitiv svikt
0: delirium eller alvorlig kognitiv svikt usannsynlig (men fremdeles mulig delirium hvis informasjon under punkt [4] er ufullstendig)

4AT SKÅR

Sykehuset i Vestfold

www.the4at.com

Bevissthetsnivå

The Richmond Agitation and Sedation Scale: The RASS

Skår	Uttrykk	Beskrivelse
+4	Aggressiv	Åpenlyst aggressiv, voldelig, umiddelbart til fare for personalet
+3	Meget agitert	Drar i eller fjerner tube(r) eller kateter(e); aggressiv
+2	Agitert	Hyppige bevegelser uten formål, slåss mot respirator
+1	Rastløs	Engstelig eller urolig, men bevegelsene ikke aggressive
0	Våken og rolig	
-1	Døsig	Ikke helt våken, men kan holde seg våken (åpner øynene/ øyekontakt) på tiltale **(≥10 sekunder)**
-2	Lett sedert	Lar seg vekke kortvarig med øyekontakt på tiltale **(<10 sekunder)**
-3	Moderat sedert	Bevegelse eller åpner øynene på tiltale **(men ingen øyekontakt)**
-4	Dypt sedert	Ingen respons på verbal oppfordring, men bevegelse eller åpner øynene ved fysisk stimulering
-5	Ikke vekkbar	Ingen respons på verbal eller fysisk stimulering

Verbal stimul

Fysisk stimul

Sykehuset i Vestfold

Sessler et al, AJRCCM 2002

Tommelfingerregel

All akutt endring må først oppfattes som et delirium

Sykehuset i Vestfold

For å svare på dagens tema:

Medikamentell og ikke-medikamentell
håndtering av delirium:

2 aspekter:

1. Forebygging
2. Håndtering

Sykehuset i Vestfold

Predikere
og
forebygge

Think delirium

Sykehuset i Vestfold

Delirium kan forebygges

Kompensere for nedsatt **syn og hørsel**

Kompenser for **kognitiv svikt** → reorientering; klokke, kalender, årstid, bosted, kognitivt stimulerende aktiviteter. Pårørende. Trygge omgivelser med passe stimuli.

Søvnhygieniske råd, ro på avdelingen, lys på dagtid.

Forebygge **dehydrering og obstipasjon**. Overvåk tarm- og blærefunksjon; oppdag tømningsproblemer.

Mobilisering. Unngå immobilisering hvis det er mulig (fysiske hindringer som kateter og i.v. væske)

Sykehuset i Vestfold

Delirium kan forebygges

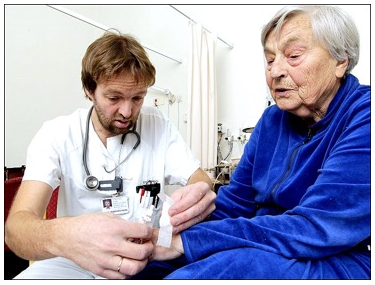
Vurder medikamentlisten; om mulig, unngå risiko-medikamenter samt polyfarmasi

Adekvat smertelindring

Væske og elektrolyttbalanse

Saturasjon

God ernæring



Sykehuset i Vestfold

Virker det?

Sykehuset i Vestfold

The New England
Journal of Medicine

VOLUME 340 MARCH 4, 1999 NUMBER 9

A MULTICOMPONENT INTERVENTION TO PREVENT DELIRIUM IN HOSPITALIZED OLDER PATIENTS

SHARON K. INOUYE, M.D., M.P.H., SIDNEY T. BOGARDUS, JR., M.D., PETER A. CHARPENTIER, M.P.H., LINDA LEO-SUMMERS, M.P.H., DENISE ACAMPORA, M.P.H., THEODORE R. HOLFORD, PH.D., AND LEO M. COONEY, JR., M.D.

ABSTRACT

Background Since in hospitalized older patients delirium is associated with poor outcomes, we evaluated the effectiveness of a multicomponent strategy for the prevention of delirium.

Methods We studied 852 patients 70 years of age or older who had been admitted to the general-medicine service at a teaching hospital. Patients from one intervention unit and two usual-care units were enrolled by means of a prospective matching strategy. The intervention consisted of standardized protocols for the management of six risk factors for delirium: cognitive impairment, sleep deprivation, immobility, visual impairment, hearing impairment, and dehydration. Delirium, the primary outcome, was assessed daily until discharge.

Results Delirium developed in 9.9 percent of the intervention group, as compared with 15.0 percent of the usual-care group (matched odds ratio, 0.60; 95

DELIRIUM, also known as acute confusional state, is a common, serious, and potentially preventable source of morbidity and mortality among hospitalized older patients.[1-3] Delirium has particular importance because patients over 65 years of age account for more than 48 percent of all days of hospital care.[4] Each year, delirium complicates hospital stays for more than 2.3 million older people, involves more than 17.5 million inpatient days, and accounts for more than $4 billion (in 1994 dollars) of Medicare expenditures.[5] Substantial additional costs accrue after discharge from the hospital, because of the increased need for institutionalization, rehabilitation, and home care.[6,7] Moreover, the incidence of delirium will probably increase with the aging of the population.[8]

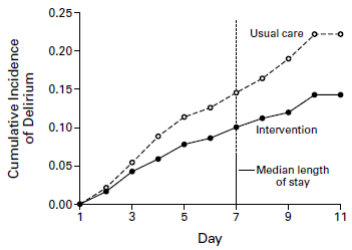
Previous interventional studies of delirium have fo-

Sykehuset i Vestfold

HELP-program (Hospital Elder Life Program)

Delirium-forebygging satt i system

Reduserer forekomsten av delirium med 30 %



Sykehuset i Vestfold

Sykepleier	Lege	Administrasjon
Kognitiv reorientering: • Reorientering i forhold til tid, sted, person og hvilken rolle du har. • Kognitivt stimulerende aktiviteter. • Regelmessig besøk av familie og venner. • Kommuniser tydelig, forklar aktiviteter. Gjenta beskjeder.	Generell homeostase: • Korriger elektrolyttforstyrrelser, • Gi febernedsettende, • Korriger anemi • adekvat saturasjon.	Unngå unødige flyttinger av pasienter.
	Adekvat smertebehandling	Unngå at skrøpelige pasienter ligger på korridor.
Sikre adekvat ernæring og forebygg dehydrering. Før kost- og drikkeliste hos pasienter med redusert inntak. Unngå langvarig faste.		
	Kritisk gjennomgang av legemiddelliste	Klokke og kalender synlig på alle pasientrom.
Søvnhygeniske råd: ro og hvile. Unngå at medisiner gis eller prosedyrer legges til natt om mulig.		
Sikre eliminasjon; forhindre/tidlig avdekke obstipasjon og urinretensjon		
Tidlig mobilisering. Minimer bruk av begrensninger slik som i.v. behandling der infusjon er festet til stativ på seng, O2 i vegg og urinkateter. Der slik behandling er nødvendig sørg for fri mobilitet ved å bruke infusjonstativ på hjul, O2 kolbe og feste urinpose til legg.		

Sykehuset i Vestfold

Awake and Breathing Coordination

- ↓ Duration of mechanical ventilation
- ↓ Duration of coma
- ↓ Mortality

Choose light sedation & avoid benzos

- ↓ Duration of mechanical ventilation
- ↓ Mortality
- ↓ Delirium

Delirium monitoring & management

- ↑ Delirium detection
- ↑ Delirium predictor of mortality and morbidity

Early Mobility & Environment

- ↓ Duration of delirium
- ↓ Disability
- ↓ ICU Length of Stay
- ↓ Rehospitalization/Mortality

VANDERBILT UNIVERSITY MEDICAL CENTER

Morandi et al Curr Opin Crit Care 2011;17:43-9
Vasilevskis et al Crit Care Med 2010;38:S683-91
Vasilevskis et al Chest 2010;138:1224-1233
Zaal et al, ICM 2013;39:481-88
Colombo et al, Minerva Anest 1012;78:1026-33

Sykehuset i Vestfold

Bilde fra John Hopkins Hospital

Early physical and occupational therapy in mechanically ventilated, critically ill patients: a randomised controlled trial

William D Schweickert, Mark C Pohlman, Anne S Pohlman, Celerina Nigos, Amy J Pawlik, Cheryl L Esbrook, Linda Spears, Megan Miller, Mietka Franczyk, Deanna Deprizio, Gregory A Schmidt, Amy Bowman, Rhonda Barr, Kathryn E McCallister, Jesse B Hall, John P Kress

Lancet 2009; 373: 1874–82
Published Online May 14, 2009
DOI:10.1016/S0140-6736(09)60658-9

Summary

Background Long-term complications of critical illness include intensive care unit (ICU)-acquired weakness and neuropsychiatric disease. Immobilisation secondary to sedation might potentiate these problems. We assessed the efficacy of combining daily interruption of sedation with physical and occupational therapy on functional outcomes in patients receiving mechanical ventilation in intensive care.

Methods Sedated adults (≥18 years of age) in the ICU who had been on mechanical ventilation for less than 72 h, were expected to continue for at least 24 h, and who met criteria for baseline functional independence were eligible for enrolment in this randomised controlled trial at two university hospitals. We randomly assigned 104 patients by computer-generated, permuted block randomisation to early exercise and mobilisation (physical and occupational therapy) during periods of daily interruption of sedation (intervention; n=49) or to daily interruption of sedation with therapy as ordered by the primary care team (control; n=55). The primary endpoint—the number of patients returning to independent functional status at hospital discharge—was defined as the ability to perform six activities of daily living and the ability to walk independently. Therapists who undertook patient assessments were blinded to treatment assignment. Secondary endpoints included duration of delirium and ventilator-free days during the first 28 days of hospital stay. Analysis was by intention to treat. This trial is registered with ClinicalTrials.gov, number NCT00322010.

Findings All 104 patients were included in the analysis. Return to independent functional status at hospital discharge occurred in 29 (59%) patients in the intervention group compared with 19 (35%) patients in the control group (p=0·02; odds ratio 2·7 [95% CI 1·2–6·1]). Patients in the intervention group had shorter duration of delirium (median 2·0 days, IQR 0·0–6·0 vs 4·0 days, 2·0–8·0; p=0·02), and more ventilator-free days (23·5 days, 7·4–25·6 vs 21·1 days, 0·0–23·8; p=0·05) during the 28-day follow-up period than did controls. There was one serious adverse event in 498 therapy sessions (desaturation less than 80%). Discontinuation of therapy as a result of patient instability occurred in 19 (4%) of all sessions, most commonly for perceived patient-ventilator asynchrony.

Interpretation A strategy for whole-body rehabilitation—consisting of interruption of sedation and physical and occupational therapy in the earliest days of critical illness—was safe and well tolerated, and resulted in better functional outcomes at hospital discharge, a shorter duration of delirium, and more ventilator-free days compared with standard care.

Funding None.

Introduction

Advances in the management of mechanically ventilated patients have improved outcomes and survival rates for this patient population.[1–3] As patients survive acute to reduce distress and oxygen consumption;[4] however, this approach can result in long periods of unconsciousness and immobility.[5,6] Protocols geared to keeping sedation to a minimum, such as daily inter-

Schweickert et al., Lancet, 2009

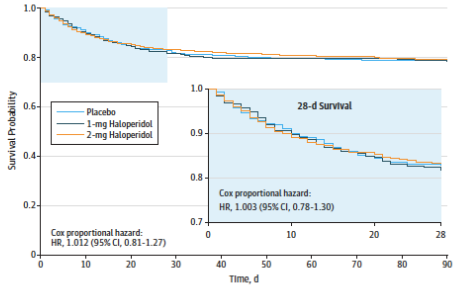
Table 5. Selected Delirium Prevention Studies, Last 6 Years[a]

Sources by Category	Study Design	Setting (Study Duration)	Sample Size (Intervention/Control)	Intervention	Control	Outcome	Results, Intervention vs Control, No.(%)	Overall Quality Score[b]
Antipsychotics (Typical and Atypical)								
Fukata et al,[67] 2014	Randomized, open-label, prospective	Elective GI/orthopedic surgery (2007-2012)	119 (59/60)	Haloperidol, intravenous (2.5 mg/d, postoperative days 1-3)	No haloperidol	Delirium incidence	25/59 (42.4) vs 20/60 (33.3) $P = .31$	5
Hakim et al,[68] 2012	RCT	Cardiac surgery (2007-2010)	101 (51/50)	Risperidone, oral (0.5 mg/12 h postoperative day)	Placebo	Delirium incidence among those with subsyndromal delirium	7/51 (13.7) vs 17/50 (34) $P = .03$	6
Vochteloo et al,[69] 2011	PCT	Hip fracture surgery (2008-2009)	378 (173/205)	Haloperidol, oral (1 mg/twice daily in high-risk patients)	No haloperidol in lower-risk patients	Delirium incidence	73/173 (42.4) vs 29/205 (14.1) $P < .001$[c]	3
Wang et al,[70] 2012	RCT	Noncardiac surgery (2009-2010)	457 (229/228)	Haloperidol, intravenous (1.7 mg/d, postoperative day 1)	Placebo	Delirium incidence	35/229 (15.3) vs 53/228 (23.4) $P = .03$	4
Melatonin or Ramelteon								
Al-Aama et al,[71] 2011	RCT	Hospital, medical (2007-2008)	122 (61/61)	Melatonin, oral (0.5 mg/d)	Placebo	Delirium incidence	2/56 (3.6) vs 10/52 (19.2) $P < .02$[d]	5
de Jonghe et al,[72] 2014	RCT	Hip fracture surgery (2008-2012)	378 (186/192)	Melatonin, oral (3 mg/d)	Placebo	Delirium incidence	55/186 (29.6) vs 49/192 (25.5) $P = .40$	6
Hatta et al,[73] 2014	RCT	Hospital, medical (2011-2012)	67 (33/34)	Ramelteon, oral (8 mg/d)	Placebo	Delirium incidence	1/33 (3) vs 11/34 (32) $P = .003$	6
Perioperative Interventions[e]								
Ashraf et al,[74] 2015	RCT	Elective cardiac cathertization[f]	93 (47/46)	Premedication with diphenhydramine (25 mg) and diazepam (5 mg)	No premedication	Delirium incidence	0/47 (0) vs 0/46 (0) NS	4
Lurati et al,[75] 2012	RCT	Noncardiac surgery (2006-2010)	385 (184/201)	Sevoflurane	Propofol	Delirium incidence	21/184 (11.4) vs 29/201 (14.4) $P = .38$	6
Oh et al,[76] 2016	Retrospective	Hip fracture surgery (2012-2014)	174 (78/96)	Sugammadex, intravenous (2 mg/kg)	Neostigmine, intravenous (0.05 mg/kg) + glycopyrrolate, intravenous (0.01 mg/kg)	Delirium incidence	26/78 (33.3) vs 35/96 (36.5) $P = .75$	4
Stoppe et al,[77] 2013	RCT	Cardiac surgery (2011)	30 (15/15)	Xenon	Sevoflurane	Delirium incidence	3/15 (20) vs 4/15 (27) $P = .67$	4
Whitlock et al,[78] 2015	RCT	Cardiac surgery (2007-2013)	7507 (3755/3752)	Methylprednisolone, intravenous (250 mg at induction and at initiation of cardiopulmonary bypass)	Placebo	Delirium incidence	295/3755 (8) vs 289/3752 (8) $P = .80$	6
Djaiani et al,[79] 2016	RCT	Cardiac surgery (2011-2014)	183 (91/92)	Dexmedetomidine (0.4 µg/kg bolus, then 0.2-0.7 µg/kg/h)	Propofol (25-50 µg/kg/min)	Delirium incidence	16/91(17.5) vs 29/92 (31.5) $P = .03$	6
Liu et al[80] 2016	RCT	Orthopedic surgery (2014-2015)	197 (99/98)	Dexmedetomidine (0.2-0.4 µg/kg/h)	Placebo	Delirium incidence	In 65- to 75-year-olds, 7/31 (22.6) vs 16/30 (43.3) $P < .013$[g]	5

Sykehuset i Vestfold

Ref: Oh, E. Et al., JAMA 2017

Figure 2. Survival Analysis at 28 and 90 Days



For the 28-day end point, follow-up for the 1-mg haloperidol group was a median of 28 days (interquartile range [IQR], 28-28 days); for the 2-mg group, 28 days (IQR, 28-28 days); and for the placebo group, 28 days (IQR, 28-28 days). For the 90-day end point, follow-up for the 1-mg haloperidol group was 90 days (IQR, 90-90 days), for the 2-mg haloperidol group, 90 days (IQR, 90-90 days); and for the placebo group, 90 days (IQR, 90-90 days).

Secondary Outcomes

90-Day Survival, Delirium Incidence, Delirium- and Coma-Free Days

The median number of days patients survived in 90 days in the 2-mg haloperidol group was 90 days vs 90 days in the placebo group (difference, 0 days; 95% CI, 0-0; $P = .86$; Figure 2).

The delirium incidence between the haloperidol and placebo groups was not statistically different, 33.3% vs 33.0% (proportion difference, 0.4%; 95% CI, −4.6 to 5.4). The number of days until delirium developed also did not differ between the groups. Patients who developed delirium and subsequently received open-label haloperidol according to the study protocol, were treated for a similar duration. In both groups, the median number of days of open label delirium treatment was 2

5.5% in the placebo group) were excluded from the per-protocol analysis. Again, no statistically significant differences were found between groups in the per-protocol analysis for any of the reported outcome measures (eTable in Supplement 2).

Safety Issues

Five serious adverse events were reported. Three patients died, 1 in each of the 3 groups (Table 2). None of the serious adverse events were likely related to the study medication. Two patients in the 1-mg haloperidol group and 1 patient in the 2-mg haloperidol group had a monomorphic ventricular tachycardia. One patient in the 2-mg haloperidol group developed refractory shock. One patient in the placebo group had a suspected malignant neu-

Sykehuset i Vestfold

Van den Boogaard et al., JAMA 2018

Håndtering

Din pasient har delirium, hva gjør du?

Sykehuset i Vestfold

Behandling

Det viktigste i behandling av delirium er å:

Identifisere underliggende årsak og behandle denne

Sykehuset i Vestfold

Parallelt med dette bør de ikke-farmakologiske tiltakene kontinueres

Sykehuset i Vestfold

Har medikamenter noen plass?

Ingen legemidler som har helbredende effekt på delirium

Farmakologiske tiltak indisert ved

- sterk uro/angst for å dempe pasientens plager
- for å kunne gjennomføre adekvate undersøkelser/iverksette behandling

Sykehuset i Vestfold

Har medikamenter noen plass?

- Haloperidol?
- Risperidon?
- Heminevrin?
- Kolinesterasehemmer?
- Benzodiazepiner?
- Dexmedetomidin?

Sykehuset i Vestfold

Antipsykotika er best dokumentert behandling, dokumentasjonen er beskjeden

Omgjør et hyperaktivt delirium til et hypoaktivt?

Sykehuset i Vestfold

Metaanalyse ved Karin Neufeld et al., JAGS 2016:

Current evidence does not support the use of antipsychotics for prevention or treatment of delirium.

Additional methodologically rigorous studies using standarized outcome measures are needed.

Table 6. Selected Delirium Treatment (Typical and Atypical Antipsychotics) Studies, Last 6 Years[a]

Sources by Category	Study Design	Setting (Study Duration)	Sample Size (Intervention/ Control)	Intervention	Control	Outcome	Results, Intervention vs Control, No.(%)	Overall Quality Score[b]
Atalan et al,[93] 2013	RCT	Cardiac surgery (2010-2012)	53 (27/26)	Morphine sulfate, intramuscular (5 mg, up to 20 mg/d)	Haloperidol, intramuscular (5 mg, up to 20 mg/d)	Delirium duration in those with hyperactive delirium	31.56 h vs 33.9 h *P* = .61	4
Boettger et al,[94] 2015	Open-label, matched	Hospital, oncology (2000-2006)	84 (21 haloperidol/21 risperidone, 21 aripiprazole, 21 olanzapine)	Haloperidol (5.5 mg)	Risperidone (1.3 mg) Aripiprazole (18.3 mg) Olanzapine (7.1 mg) (mean doses 4-7 d)	Delirium resolution and adverse-effect profiles (typical vs atypical)	16/21 (76.2) vs 18/21 (85.7) [risperidone], 16/21 (76.2) [aripiprazole], and 13/21 (61.9) [olanzapine] *P* = .42	3
Kishi et al,[95] 2012	Case series	Hospital, cancer[d]	29 (intervention)	Risperidone, oral (0.5-1 mg to start, then titrated)	No control group	Delirium severity (responder, 25% reduction in the DRS-R-98 from baseline to day 7)	No significant differences in the number of treatment responders vs nonresponders, 14/29 (48) vs 15/29 (51)	2
Maneeton et al,[96] 2013	RCT	Hospital, medical (2009-2011)	52 (24/28)	Quetiapine, oral (25-100 mg/d for 1-7 d)	Haloperidol, oral (0.5-2 mg/d for 1-7 d	Delirium severity by DRS-R-98 (higher score = more severe)	22.9 (6.9) vs 21.7 (6.7) *P* = .59	5
Schrøder Pedersen et al,[97] 2014	Prospective cohort	Cardiac surgery (2012)	240 (123/117)	Standardized treatment with haloperidol, oral (2.5-5 mg 3 times daily ×1.5 d, then taper)	No standardized treatment protocol	Delirium duration	3 (range, 1-5) d vs 1 (range, 1-4) d *P* = .23	3
Yoon et al,[98] 2013	Prospective observa-tional	Hospital, medical surgical[d]	80 (23 haloperidol/21 risperidone, 18 olanzapine, 18 quetiapine)	Haloperidol, oral (0.5-10 mg/d)	Risperidone, oral (0.25-4 mg/d) Olanzapine, oral (1-20 mg/d) Quetiapine, oral (25-200 mg/d)	Delirium severity ≥50% reduction from baseline by DRS-R	15/23 (65.2) vs 14/21 (66.6) [risperidone], 12/18 (66.6) [olanzapine], and 13/18 (72.2) [quetiapine] *P* = .97	2
Agar et al,[99] 2017	RCT	Inpatient hospice, hospital palliative care (2008-2014)	249 (81 haloperidol, 82 risperidone/86 placebo)	Haloperidol, risperidone, oral (0.25 mg every 12 h, up to 2 mg/d)[e]	Placebo	Delirium symptom scores on day 3 (higher score = more severe)	Haloperidol vs placebo: 0.24 U higher in haloperidol group, *P* = .009 Risperidone vs placebo: 0.48 U higher in risperidone group, *P* = .02	6

Abbreviations: DRS-R-98, Korean version of the Delirium Rating Scale–Revised-98 (DRS-R-98); RCT, randomized clinical trial.

[a] Some studies were excluded if studies were conducted exclusively in the intensive care unit or the duration of intensive care unit stay could not be determined. Studies with overall quality score less than 2 were also excluded.

[b] The quality rating was based on the Cochrane risk of bias overall quality score, with 1 point assigned for each of 6 domains found to be at low risk of bias. Low risk of bias, 6 (low risk of bias in all domains), unclear risk of bias = not enough information to make a clear judgment (high or unclear risk of bias on 1 or more domains); high risk of bias, less than 4 (high risk of bias on ≥2 domains).

[c] Adverse effects: extrapyramidal symptoms (haloperidol, 4 of 21 [19%]; risperidone, 1 of 21 [4.8%]), sedation (olanzapine, 6 of 21 [28.6%]).

[d] Study duration not reported.

[e] The study had different loading, initial, and maximum doses for participants 65 years or younger and for participants older than 65 years. Participants 65 years or younger received a 0.5-mg loading dose with the first dose of 0.5 mg, then 0.5-mg maintenance dose every 12 hours. Doses could be titrated by 0.25 to 0.5 mg, with maximum dose of 4 mg. For participants older than 65 years, the loading, initial, and maximum doses were halved.

Sykehuset i Vestfold

Prognose

Er det farlig å gjennomgå delirium?

Sykehuset i Vestfold

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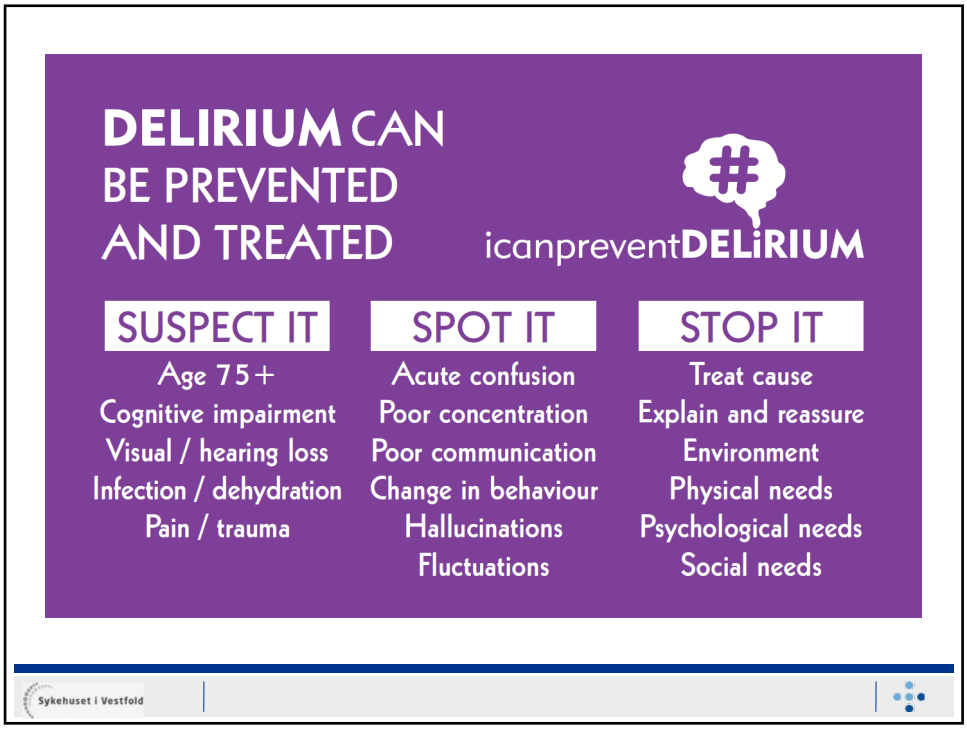
DELIRIUM CAN BE PREVENTED AND TREATED
icanpreventDELIRIUM
SUSPECT IT
Age 75+
Cognitive impairment
Visual / hearing loss
Infection / dehydration
Pain / trauma
SPOT IT
Acute confusion
Poor concentration
Poor communication
Change in behaviour
Hallucinations
Fluctuations
STOP IT
Treat cause
Explain and reassure
Environment
Physical needs
Psychological needs
Social needs
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