Prise en charge du delirium

Romain Sonneville
Médecine intensive - réanimation
Hôpital Bichat-Claude Bernard, APHP
INSERM U1148

Delirium Diagnostic criteria

DSM V : Diagnostic Statistical Manual (of American Psychiatric Association)

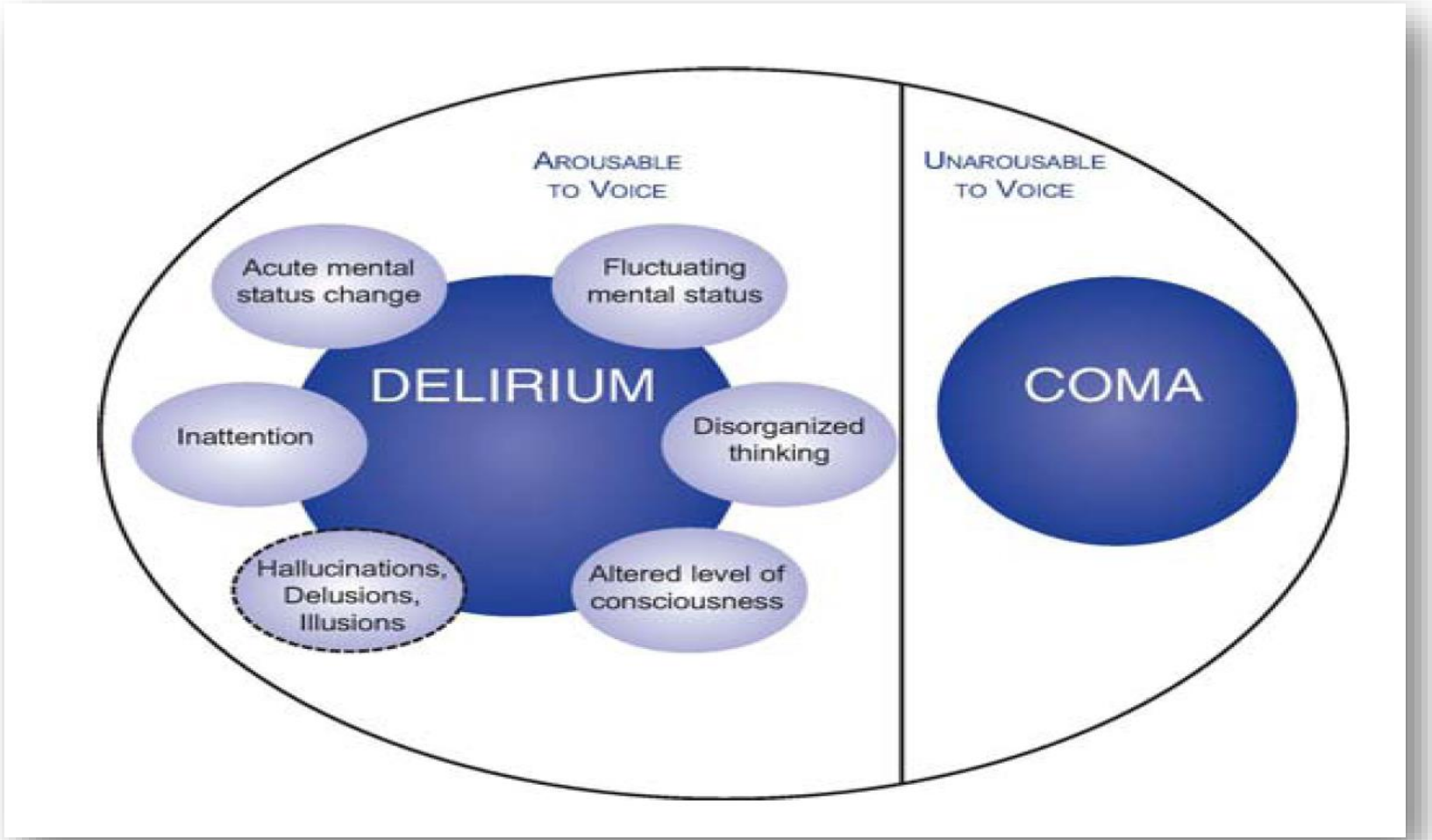
A. **Disturbance in attention** (i.e., reduced ability to direct, focus, sustain, and shift attention) **and awareness** (reduced orientation to the environment)

B. **The disturbance develops over a short period of time** (hours to a few days), represents a change from baseline attention and awareness**, and tends to fluctuate in severity** during the course of the day

C. **An additional disturbance in cognition** (e.g., memory deficit, disorientation, language, visuospatial ability, or perception)

D. The disturbances in criteria A and C are **not explained by another pre-existing, established, or evolving neurocognitive disorder** and do not occur in the context of a severely reduced level of arousal, such as coma

E. The disturbance is a **direct physiological consequence of another medical condition, substance intoxication or withdrawal** (i.e., because of a drug of abuse medication), or exposure to a toxin, or is because of multiple etiologies



Morandi et al., ICM 2008

Question 1 : quelle est la prévalence du delirium chez les patients ventilés en réanimation ?

- A. 10%
- B. 20%
- C. 20-40%
- D. 40-60%
- E. 60-80%

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- A. 10%
- B. 20%
- C. 20-40%
- D. 40-60%
- E. 60-80%

OPEN ACCESS

Outcome of delirium in critically ill patients: systematic review and meta-analysis

Jorge I F Salluh,[1] Han Wang,[2] Eric B Schneider,[2] Neeraja Nagaraja,[2] Gayane Yenokyan,[3] Abdulla Damluji,[4] Rodrigo B Serafim,[1,5] Robert D Stevens[6]

Delirium was identified in **5280 of 16 595 (31.8%)** critically ill patients reported in **42 studies.**

BMJ 2015

Delirium as a Predictor of Mortality in Mechanically Ventilated Patients in the Intensive Care Unit

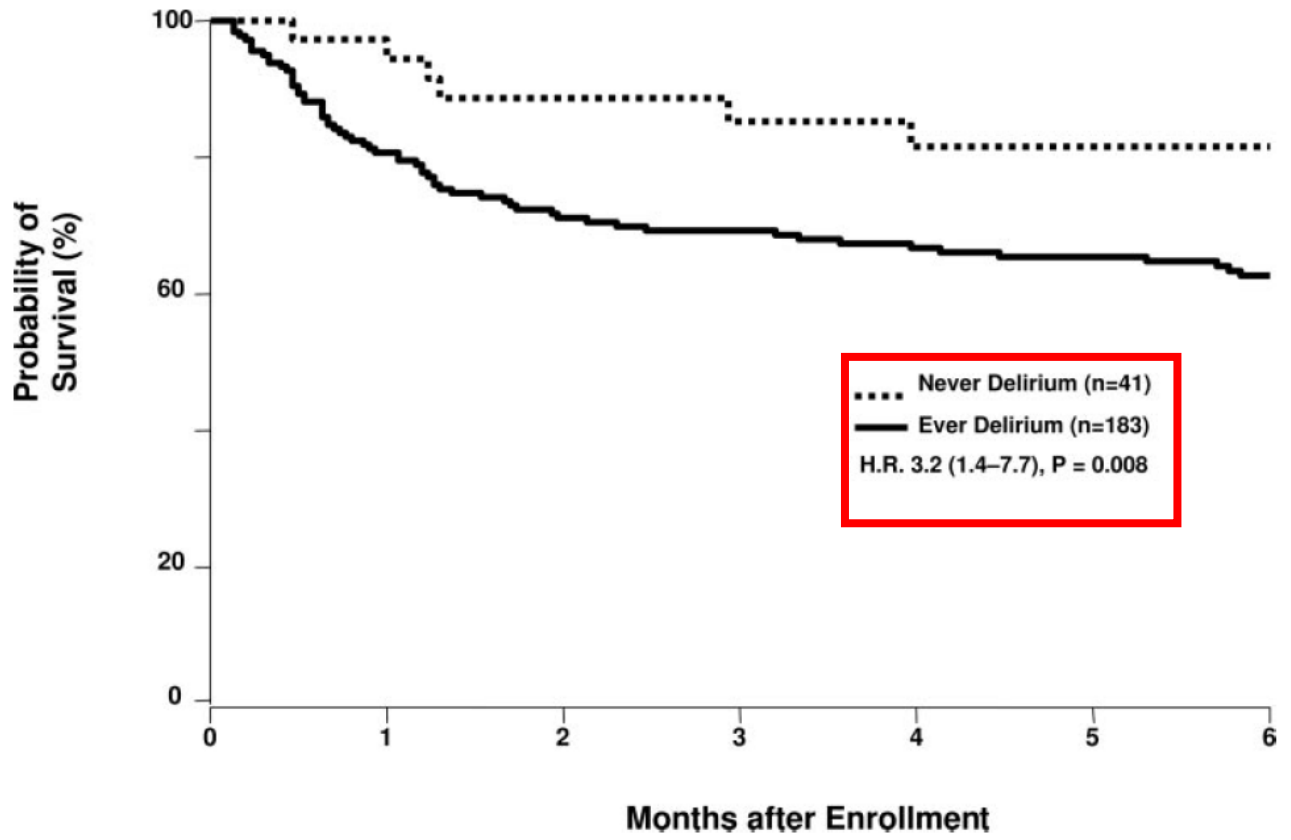

FIGURE 1. Delirium in ICU patients is a risk factor for 6-month mortality. Kaplan-Meier curves of survival to 6 months among ICU patients. Patients with delirium in the ICU had a significantly higher mortality rate than patients without delirium. Used with permission from Ely et al.[9] H.R. = hazard ratio. Data in parenthesis indicate confidence interval.

JAMA. 2004;291:1753-1762

Delirium as a Predictor of Mortality in Mechanically Ventilated Patients in the Intensive Care Unit

Table 3. Delirium Status and Clinical Outcomes Including 6-Month Mortality and Lengths of Stay

	No Delirium	Delirium	Adjusted *P* Value
6-Month Mortality			
No.	41	183	
Rate, No. (%)	6 (15)	63 (34)	
Adjusted HR (95% CI)*	Reference	3.2 (1.4-7.7)	.008
Hospital Stay			
No.	41	183	
Median (IQR), d	11 (7-14)	21 (19-25)	
Adjusted HR (95% CI)*	Reference	2.0 (1.4-3.0)	<.001
Post-ICU Stay†			
No.	40	156	
Median (IQR), d	5 (2-7)	7 (4-15.5)	
Adjusted HR (95% CI)*	Reference	1.6 (1.1-2.3)	.009

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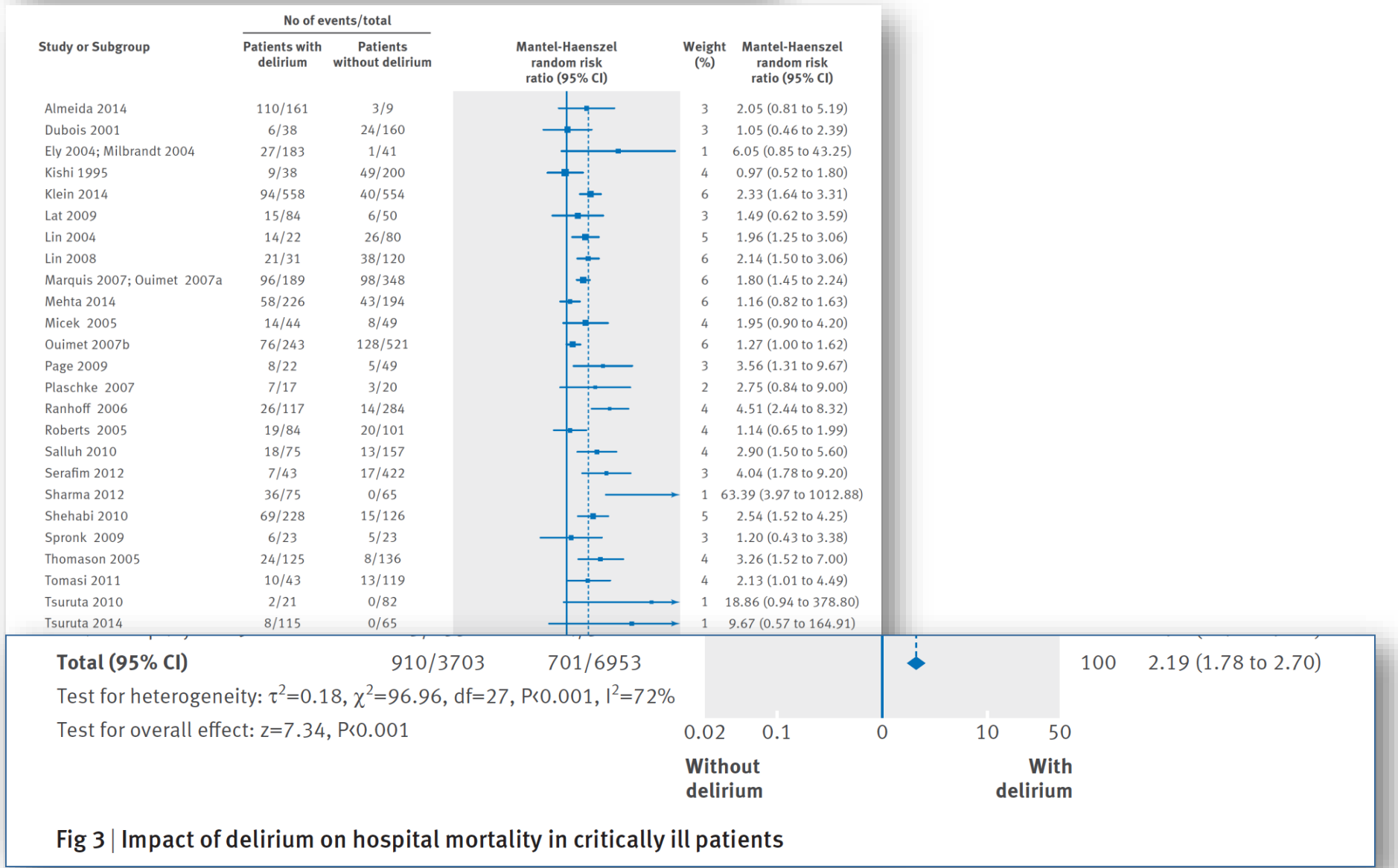
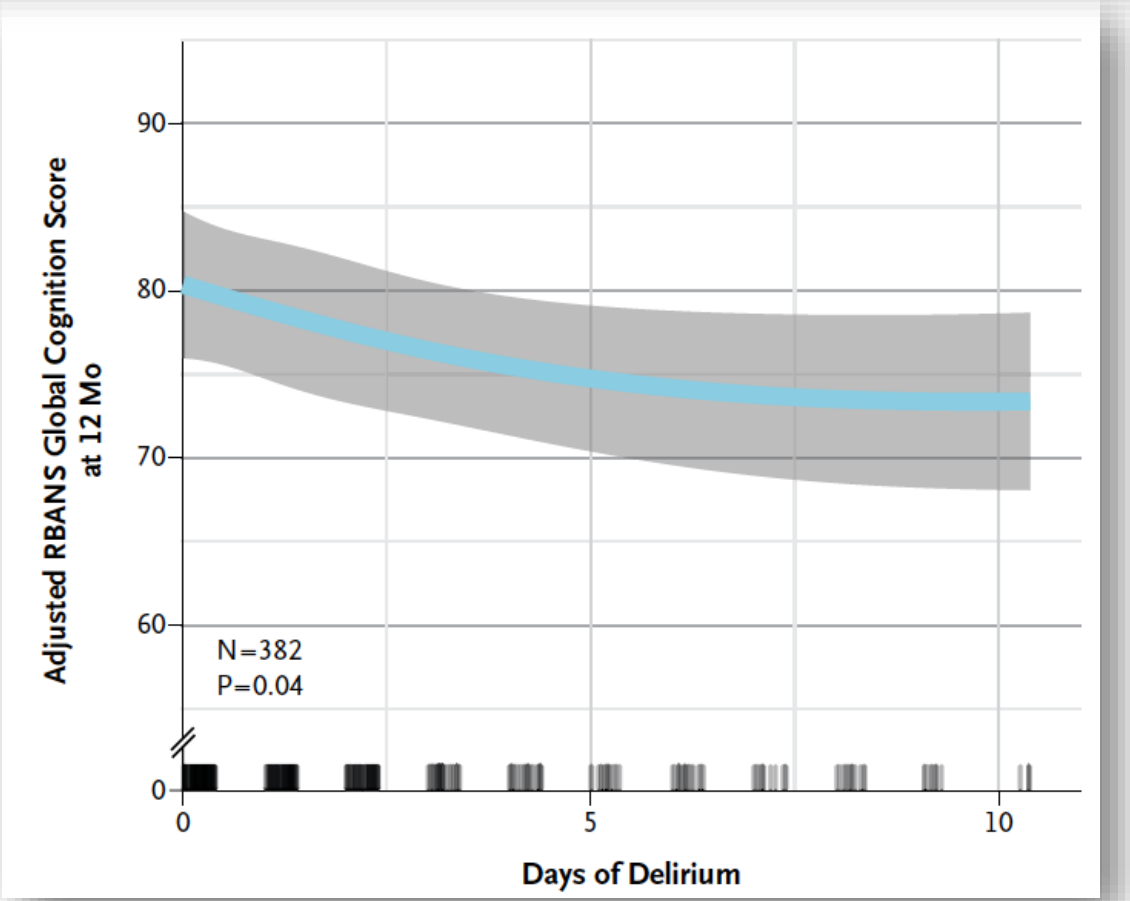


Fig 3 | Impact of delirium on hospital mortality in critically ill patients

The NEW ENGLAND JOURNAL of MEDICINE

Long-Term Cognitive Impairment after Critical Illness



Pandharipande, New Eng J Med 2013

The association between brain volumes, delirium duration, and cognitive outcomes in intensive care unit survivors: The VISIONS cohort magnetic resonance imaging study*

Max L. Gunther, PhD; Alessandro Morandi, MD, MPH; Erin Krauskopf, BS; Pratik Pandharipande, MD, MSCI; Timothy D. Girard, MD, MSCI; James C. Jackson, PsyD; Jennifer Thompson, MPH; Ayumi K. Shintani, PhD; Sunil Geevarghese, MD, MSCI; Russell R. Miller III, MD, MPH; Angelo Canonico, MD; Kristen Merkle, BA; Christopher J. Cannistraci, MS; Baxter P. Rogers, PhD; J. Chris Gatenby, PhD; Stephan Heckers, MD, MSC; John C. Gore, PhD; Ramona O. Hopkins, PhD; E. Wesley Ely, MD, MPH; for the VISIONS Investigation (VISualizing Icu SurvivOrs Neuroradiological Sequelae)

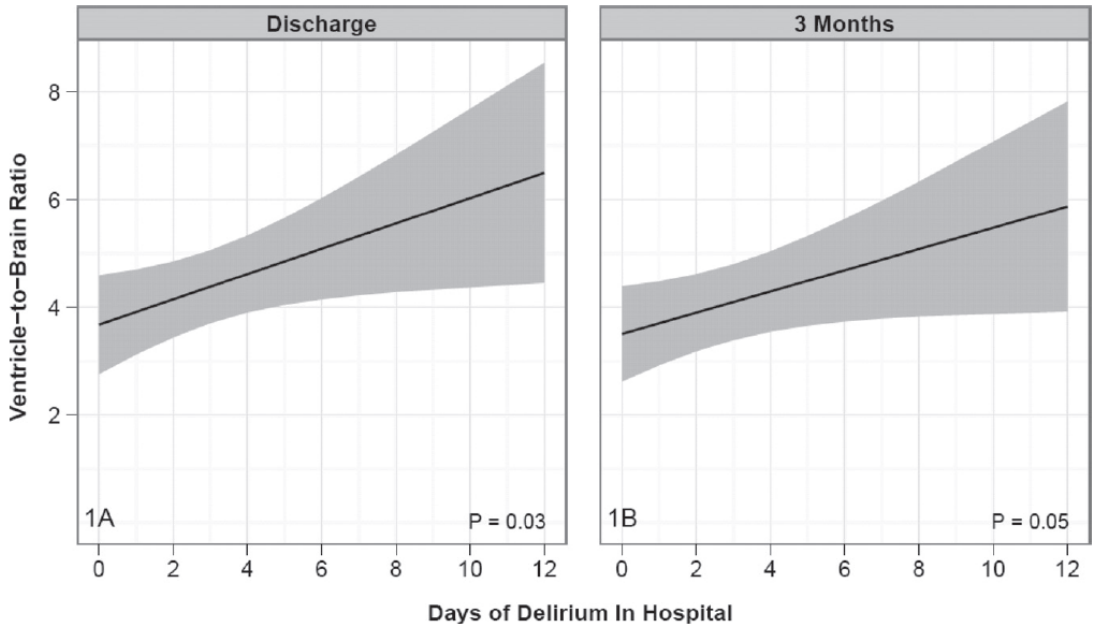


Figure 1. Delirium duration and ventricle-to-brain ratio (VBR) in intensive care unit patients. Increased duration of delirium was independently associated with smaller overall brain volumes (defined by VBR) both at hospital discharge and at 3-month follow-up after adjusting for age, highest Sequential Organ Failure Assessment score in the intensive care unit, and presence of sepsis. Increased VBR indicates increase in cerebral spinal fluid due to loss of brain volume. VBR is shown on the y-axis of *A* and *B*. The x-axis for both figures represents the duration of delirium measured in days. The *solid black line* indicates adjusted brain volume for a given value of delirium duration, adjusted for confounders; the "*ribbon*" indicates the 95% confidence bounds.

Critical Care medicine 2012

The association between brain volumes, delirium duration, and cognitive outcomes in intensive care unit survivors: The VISIONS cohort magnetic resonance imaging study*

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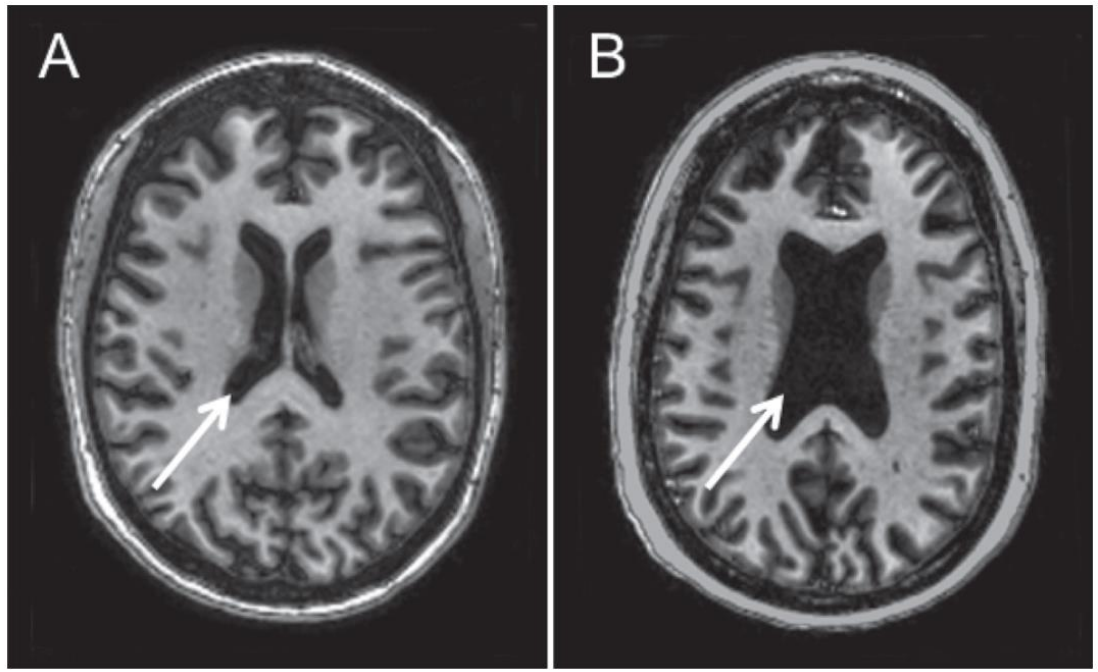

Critical Care medicine 2012

Prise en charge

1. Identifier les patients à risque dés l'admission
2. Evaluer les patients à l'aide d'outils validés
3. Eviter la sédation excessive, prévenir la neurotoxicité
4. Mobiliser précocement les patients
5. Autres mesures

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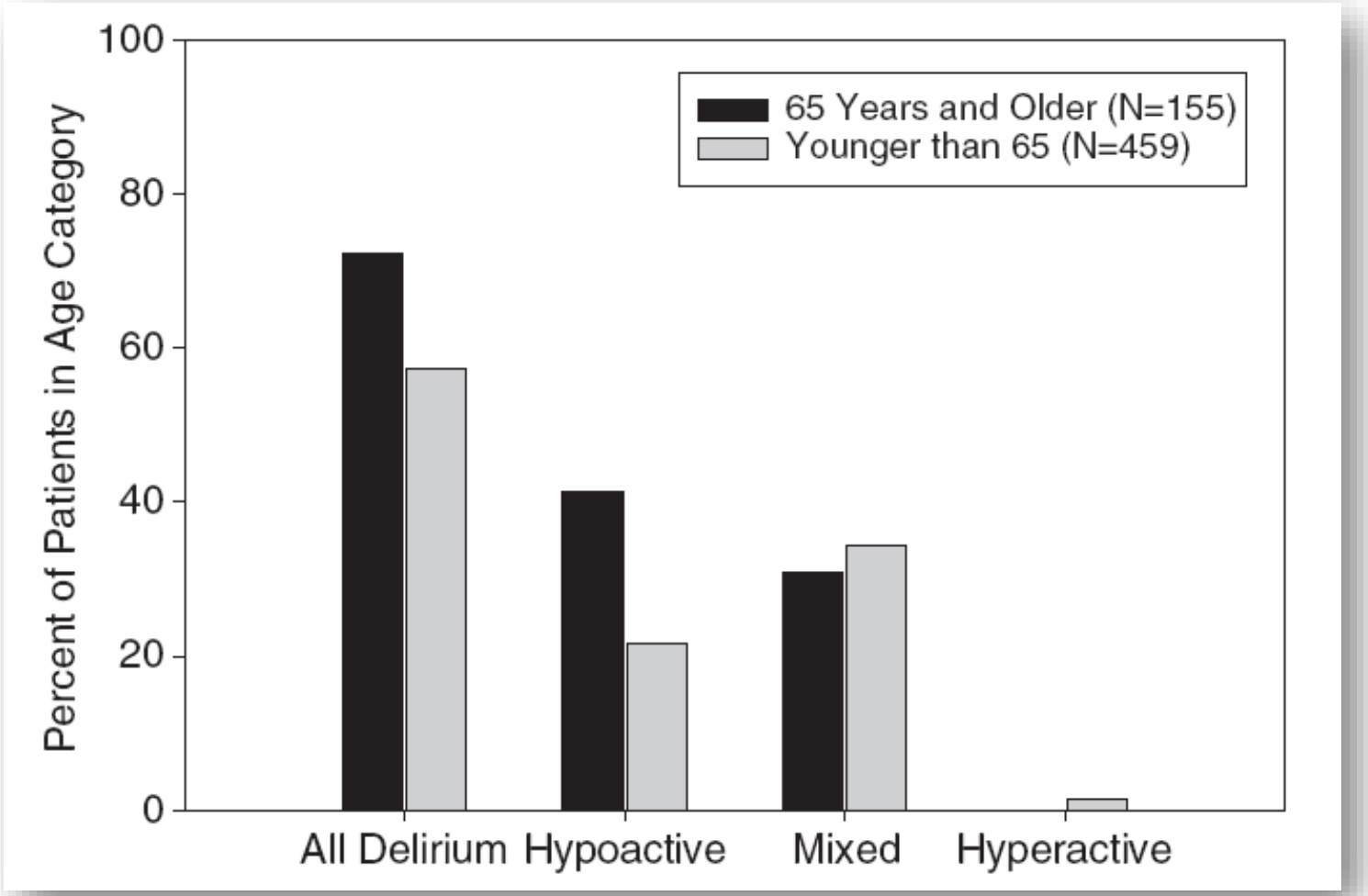
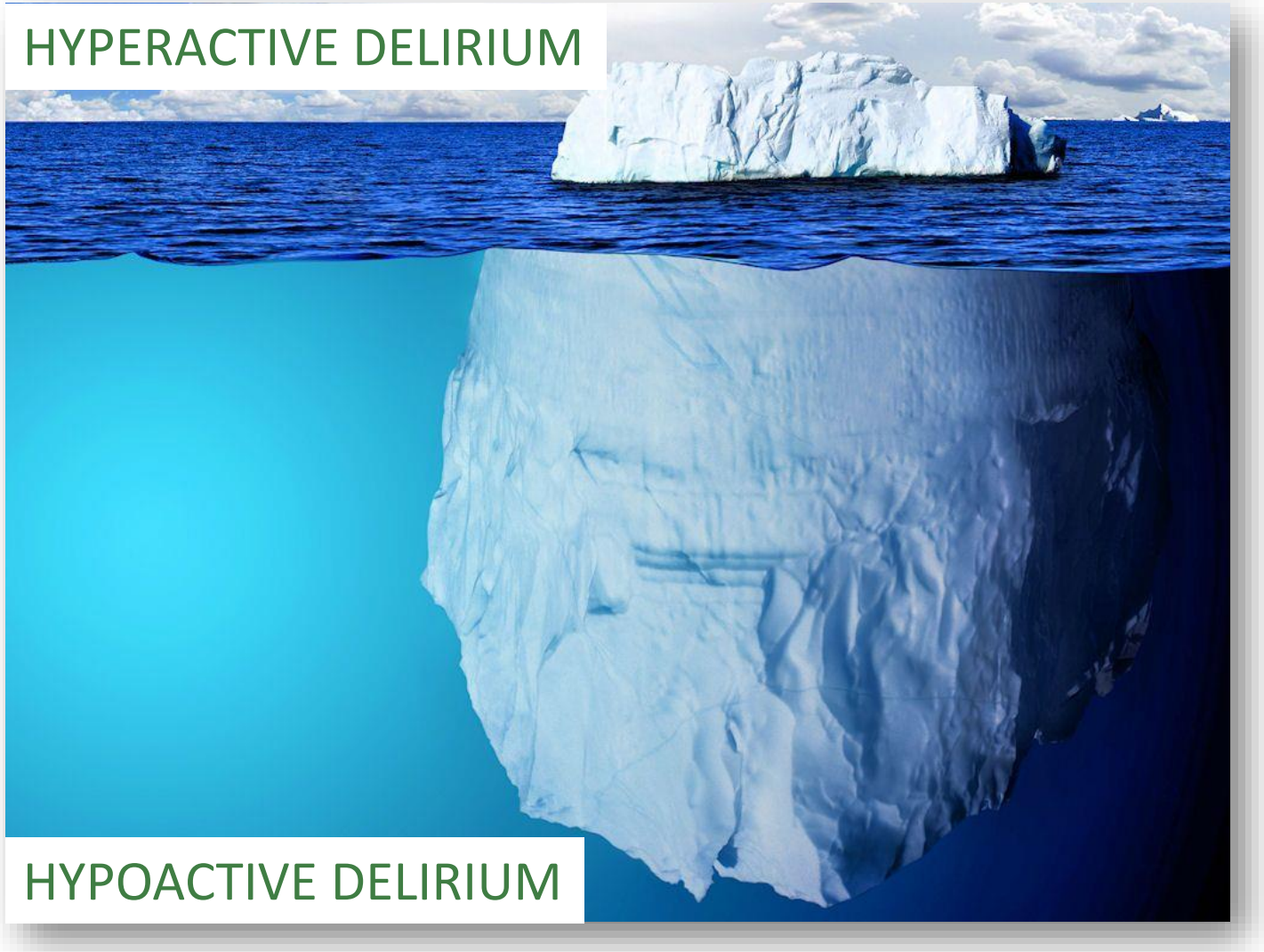
Delirium and its motoric subtypes
A study of 614 critically ill patients



Peterson JF, J Am Geriatr Soc, 2006

Delirium in ICU



Acute illness

(sepsis, trauma, emergency surgery…)

Iatrogenic factors
(sedation, physical restraint…..)

Environmental factors
(light, noise…..)

Delirium (multifactorial)

Predisposing factors

Development and validation of PRE-DELIRIC (PREdiction of DELIRium in ICu patients) delirium prediction model for intensive care patients: observational multicentre study

3056 intensive care patients
5 medical ICUS in the Netherlands

The **PRE-DELIRIC** model for intensive care patients consists of **10 risk factors** that are **readily available within 24 hours after intensive care admission** and has a **high predictive value.**

BMJ

BMJ 2012;344:e420 doi: 10.1136/bmj.e420 (Published 9 February 2012)

Variable	Regression coefficient	Odds ratio (95% CI)
Age (years)	0.04	1.04 (1.03 to 1.06)
APACHE-II score (per point)	0.06	1.06 (1.03 to 2.0)
Coma:		
Drug induced	0.59	1.8 (1.1 to 3.1)
Miscellaneous	2.92	18.5 (4.6 to 73.8)
Combination	3.06	21.3 (5.9 to 77.1)
Admission category:		
Surgery	Reference	Reference
Medical	0.33	1.4 (0.9 to 2.2)
Trauma	1.22	3.4 (1.7 to 6.8)
Neurology/neurosurgery	1.49	4.5 (2.6 to 7.5)
Infection (yes)	1.14	3.1 (2.0 to 4.8)
Metabolic acidosis (yes)	0.32	1.4 (1.0 to 2.0)
Morphine use:		
0.01-7.1 mg/day	0.44	1.6 (0.8 to 3.1)
7.2-18.6 mg/day	0.14	1.2 (0.8 to 1.8)
>18.6 mg/day	0.55	1.8 (1.1 to 2.7)
Sedation (yes)	1.51	4.5 (2.8 to 7.4)
Urea (mmol/L)	0.03	1.03 (1.0 to 1.1)
Urgent admission (%)	0.43	1.5 (1.1 to 2.3)
Intercept	−6.76	

BMJ

BMJ 2012;344:e420 doi: 10.1136/bmj.e420 (Published 9 February 2012)

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RASS : Richmond Agitation Sedation Scale

Score	Définition	Description
+ 4	**Violent**	Danger immédiat pour personnel soignant
+ 3	**Très agité**	Agressif, arrache cathéters, sondes…
+ 2	**Agité**	Lutte contre ventilateur, mouvements fréquents sans but
+ 1	**Sans repos**	Anxieux, sans mouvements vifs ou agressifs
0	**Calme, éveillé**	
- 1	**Somnolent**	Ouvre les yeux à l'appel (contact visuel soutenu, > 10s)
- 2	**Sédation légère**	Réveil bref à l'appel (contact visuel < 10s)
- 3	**Sédation modérée**	Ouvre les yeux ou bouge à l'appel (contact visuel : 0)
- 4	**Sédation profonde**	Pas de réponse à l'appel, réactif aux stim. douloureuses
- 5	**Non réveillable**	Pas de réponse à l'appel ou aux stim. douloureuses

Confusion Assessment Method for the ICU (CAM-ICU)

1. Modification de l'état neurologique par rapport à l'état habituel ?
   Début brutal, fluctuations

et

2. inattention, distractibilité

et

3. Altération du niveau de conscience

ou

4. Altération du « jugement »

=

DELIRIUM

Sensibilité 93-100%
Spécificité 89-100%

Ely, JAMA 2001

Intensive Care Delirium Screening Checklist (ICDSC)

8 items, côtés 0 ou 1

Réalisée une fois par 8 heures

Si total > ou = 4 : DELIRIUM

1. Conscience altérée (Si A ou B, ne pas poursuivre évaluation)
   A. Pas de réponse à stimulation : ne pas coter
   B. Réponse à une stimulation intense et répétée (voix, douleur) : idem
   C. Réponse à une stimulation modérée : 1
   D. Patient normalement éveillé : 0
   E. Réponse exagérée à la stimulation : 1
2. Inattention (0 ou 1)
3. Désorientation (0 ou 1)
4. Hallucinations (0 ou 1)
5. Agitation ou ralentissement psychomoteur (0 ou 1)
6. Discours ou humeur inappropriés (0 ou 1)
7. Troubles du cycle veille-sommeil (0 ou 1)
8. Fluctuations des symptômes (0 ou 1)

Bergeron ICM, 2001

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DAILY INTERRUPTION OF SEDATIVE INFUSIONS IN CRITICALLY ILL PATIENTS UNDERGOING MECHANICAL VENTILATION

JOHN P. KRESS, M.D., ANNE S. POHLMAN, R.N., MICHAEL F. O'CONNOR, M.D., AND JESSE B. HALL, M.D.

128 patients in MICU

Intervention: Interruption of sedative infusions until patients awake, on a daily basis

Control: the infusions were interrupted only at the discretion of the clinicians

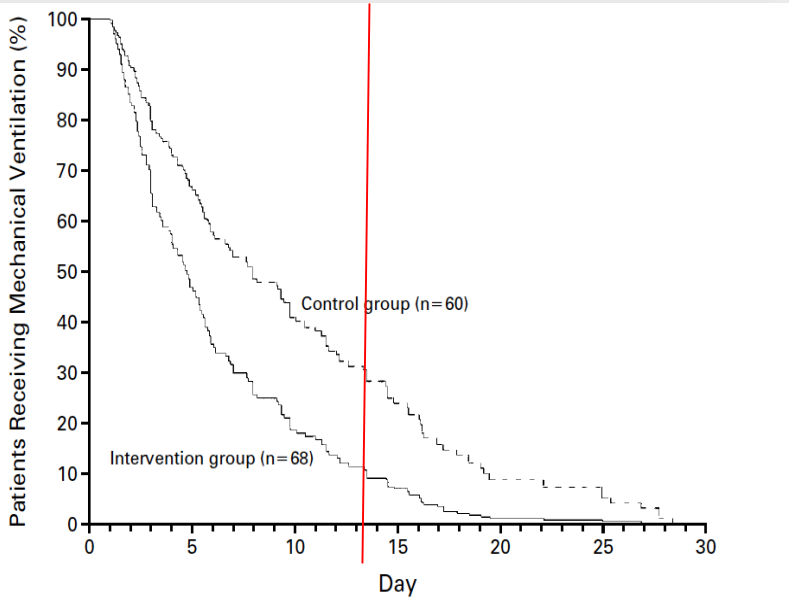

Figure 1. Kaplan–Meier Analysis of the Duration of Mechanical Ventilation, According to Study Group. After adjustment for base-line variables (age, sex, weight, APACHE II score, and type of respiratory failure), mechanical ventilation was discontinued earlier in the intervention group than in the control group (relative risk of extubation, 1.9; 95 percent confidence interval, 1.3 to 2.7; $P<0.001$).

Kress, N Eng J Med 2001

DAILY INTERRUPTION OF SEDATIVE INFUSIONS IN CRITICALLY ILL PATIENTS UNDERGOING MECHANICAL VENTILATION

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Control: the infusions were interrupted only at the discretion of the clinicians

	Intervention (n=68)	**Control (n=60)**	**p**
Total dose of MDZ, mg	230 (59–491)	425 (208–824)	.05
Total dose of morphine, mg	205 (68–393)	481 (239–748)	.009
Median duration of MV, days	4.9	7.3	.004
Median duration of ICU stay, days	6.4	9.9	.02
Diagnostic testing to assess change in mental status, n (%)	6 (9%)	16 (27%)	.02
Complications (e.g., self-extubation)	3 (4%)	4 (7%)	.88

Kress, N Eng J Med 2001

Intensive Care Med (2015) 41:2130–2137
DOI 10.1007/s00134-015-4063-z

ORIGINAL

Irene J. Zaal
John W. Devlin
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Benzodiazepine-associated delirium in critically ill adults

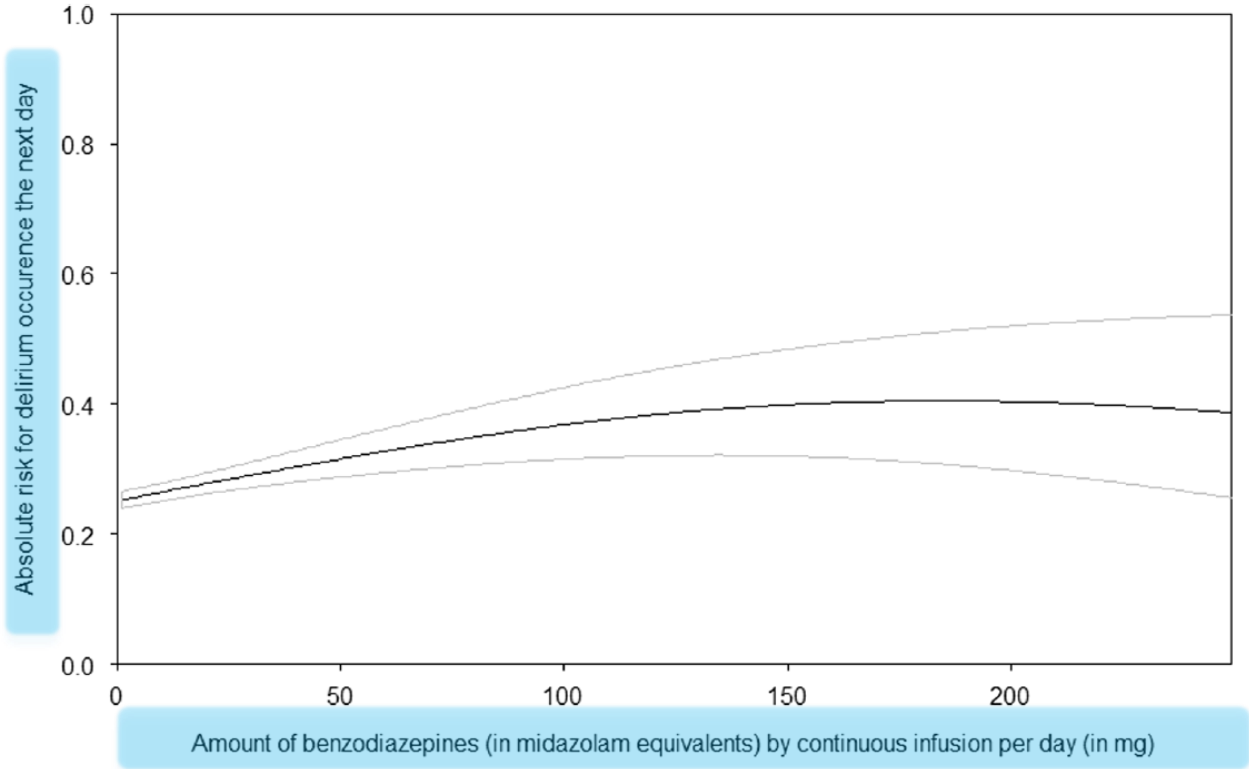
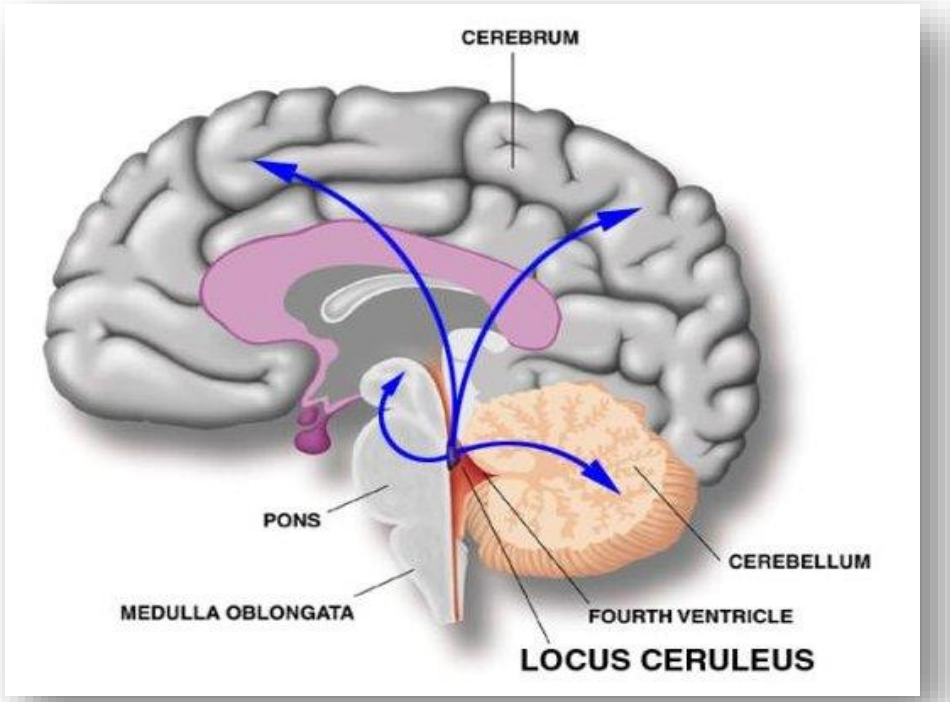
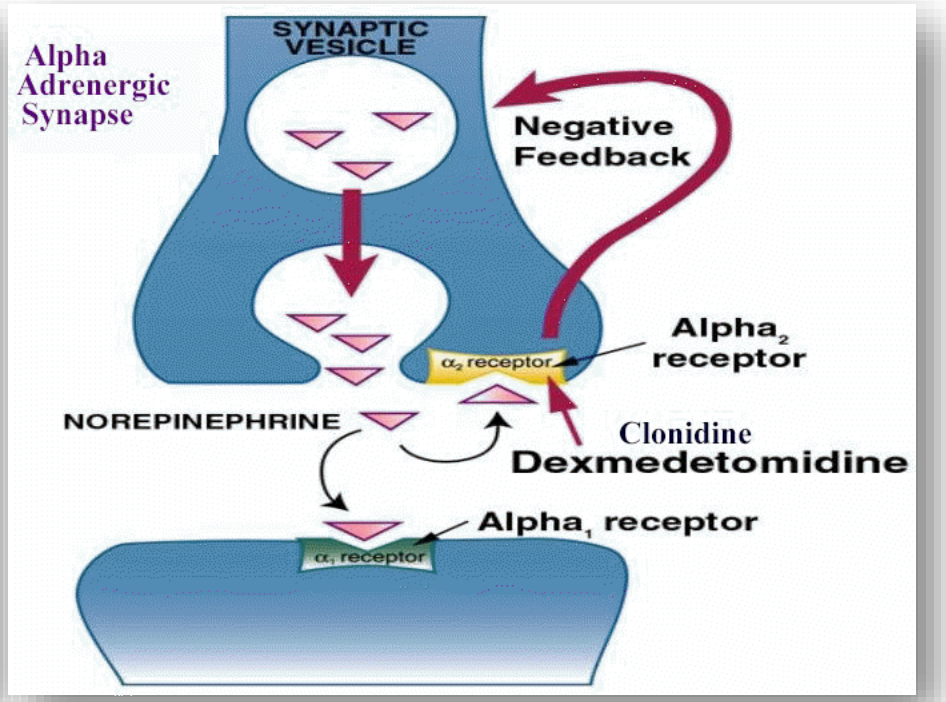


Fig. 2 Continuous infusion of benzodiazepines and the risk for delirium the next day. Among patients awake and without delirium with mean/median values for all other covariables, the absolute risk is plotted for delirium occurring the next day (*y-axis*) conditional on continuously infused IV benzodiazepine (*x-axis*). The 95 % confidence interval is plotted in *gray*

α2 - agonists

Dexmedetomidine, clonidine

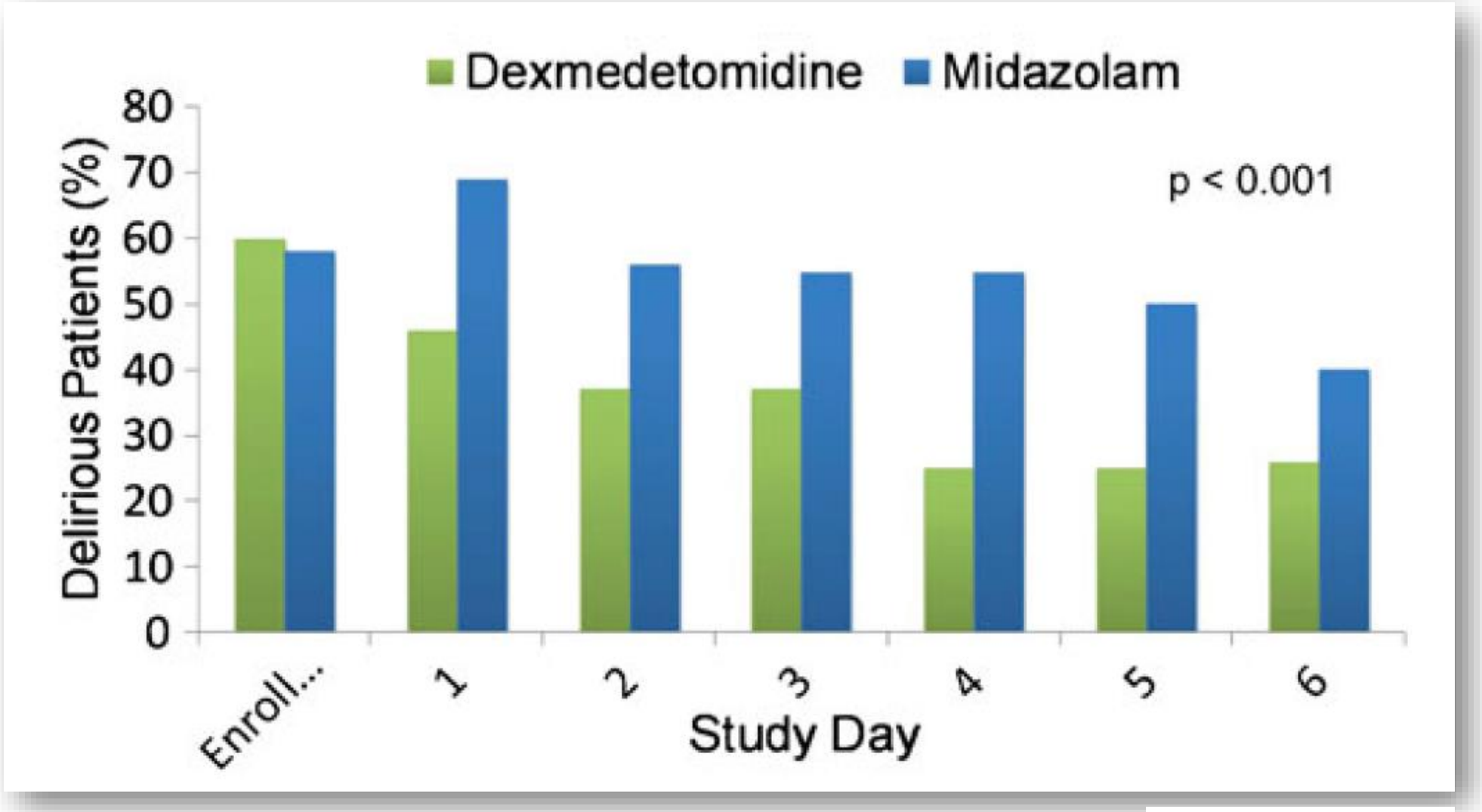




α2+++ = > decreased awareness, anxiolysis

Side effects: bradycardia, hypotension

Dexmedetomidine vs midazolam for sedation of critically ill patients



Riker, JAMA 2009

Original article

Efficacy and safety of sedation with dexmedetomidine in critical care patients: A meta-analysis of randomized controlled trials

Jean-Michel Constantin [a,*], Aurelien Momon [a], Jean Mantz [c], Jean-François Payen [d,e], Bernard De Jonghe [f], Sebastien Perbet [a], Sophie Cayot [a], Gerald Chanques [g], Bruno Perreira [b]

N=1994 patients

16 RCTs

DEX versus various comparators : midazolam, propofol, lorazepam

Endpoint	Estimator	95%CI	p
Efficacy endpoints			
Duration of MV	WMD : -0.30	-0.48 ; -0.13	0.003
Delirium incidence	RR : 0.81	0.67 ; 0.98	0.02
Safety endpoints			
Bradycardia	RR : 1.95	1.39-2.73	0.001
Hypotension	RR : 1.26	1.01 ; 1.58	0.04
Mortality	RR : 1.00	0.83 ; 1.22	0.93

2016

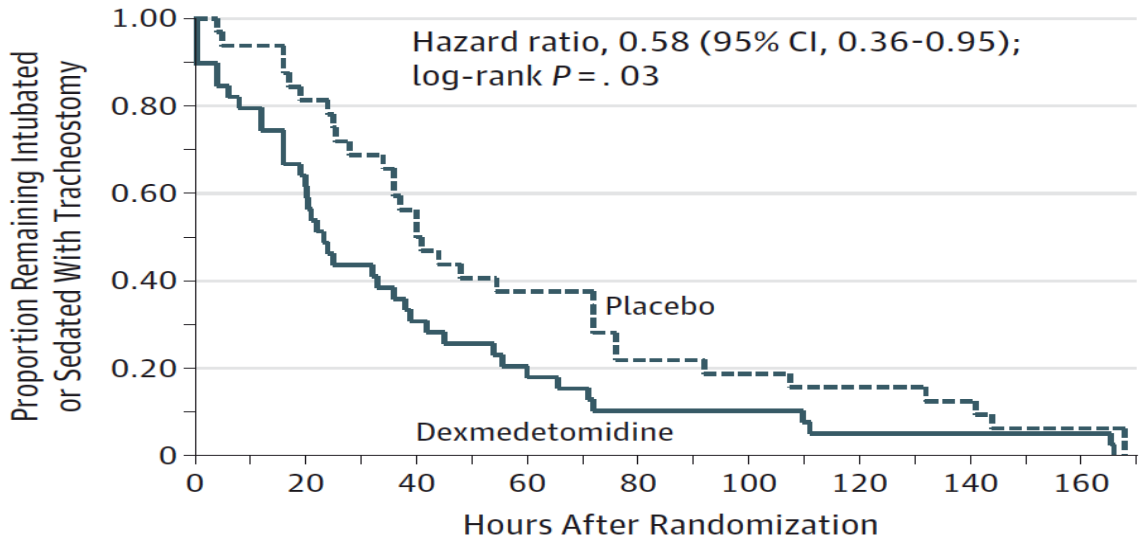
Research

Preliminary Communication | CARING FOR THE CRITICALLY ILL PATIENT

Effect of Dexmedetomidine Added to Standard Care on Ventilator-Free Time in Patients With Agitated Delirium
A Randomized Clinical Trial

Michael C. Reade, DPhil, FCICM; Glenn M. Eastwood, RN, PhD; Rinaldo Bellomo, MD, FCICM; Michael Bailey, PhD; Andrew Bersten, MD, FCICM; Benjamin Cheung, MBBS, FCICM; Andrew Davies, MBBS, FCICM; Anthony Delaney, PhD, FCICM; Angaj Ghosh, MBBS, FCICM; Frank van Haren, PhD, FCICM; Nerina Harley, MD, FCICM; David Knight, MBBS, FCICM; Shay McGuiness, MBChB, FCICM; John Mulder, MBChB, FCICM; Steve O'Donoghue, MBChB, FCICM; Nicholas Simpson, MBBS, FCICM; Paul Young, MBChB, FCICM; for the DahLIA Investigators and the Australian and New Zealand Intensive Care Society Clinical Trials Group

Figure 2. Kaplan-Meier Analysis of the Proportion of Patients Remaining Intubated During the First 7 Days of the Study



No. at risk				
Dexmedetomidine	39	10	4	2
Placebo	32	13	6	2

2016

Research

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Table 3. Primary and Secondary Study Outcomes

	Dexmedetomidine (n = 39)	Placebo (n = 32)	Difference Between Groups (95% CI)	*P* Value
Confusion Assessment Method for the ICU				
Time to first results indicating absence of delirium, median (IQR), h	23.3 (13.0 to 54.0)	40.0 (25.3 to 76.0)	−16.0 (−28.0 to −3.0)	.01
Time spent with results indicating presence of delirium, median (IQR), h	36 (24 to 66)	62 (42.5 to 106.75)	−24 (−41 to −6)	.009
Proportion of days postrandomization spent with results indicating presence of delirium, median (IQR), %	47 (30 to 76)	62 (46 to 86)	−10 (−30 to 0)	.05
Time spent with at least 1 assessment indicating presence of delirium postrandomization, median (IQR), d	1 (1 to 3)	3 (1 to 4)	−1 (−2 to 0)	.02

2016

Question 2 : Quelle est la place des neuroleptiques pour la prise en charge du delirium en réanimation ?

- A. Aucune
- B. Ils peuvent être utilisés largement en prévention du delirium
- C. Ils peuvent être utilisés pour traiter le delirium « hypoactif »
- D. Ils peuvent être nécessaires dans le traitement de l'agitation
- E. Ils peuvent être prescrits et associés aux benzodiazépines dans la prise en charge du delirium tremens

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Special Article

Clinical Practice Guidelines for the Management of Pain, Agitation, and Delirium in Adult Patients in the Intensive Care Unit

e. Delirium treatment
   i. There is no published evidence that treatment with haloperidol reduces the duration of delirium in adult ICU patients (No Evidence).

Crit Care Med 2012

A Prospective Study of Agitation in a Medical-Surgical ICU*

Incidence, Risk Factors, and Outcomes

Samir Jaber, MD, PhD; Gérald Chanques, MD; Claire Altairac, PharmD; Mustapha Sebbane, MD; Christine Vergne, MD; Pierre-François Perrigault, MD; and Jean-Jacques Eledjam, MD, PhD

Table 4—*Independent Risk Factors for the Agitation*

Predictive Risk Factors	Odds Ratio	95% CI
Age ≥ 65 yr*	2.21	0.83–5.93
Medical cause of ICU admission*	3.04	0.85–10.54
Sepsis	2.61	1.03–6.58
Alcohol abuse	3.32	1.12–10.00
Use of sedatives in 48 h before onset of agitation	4.03	1.62–10.40
Body temperature ≥ 38°	4.52	1.80–11.49
Sodium level ≤ 134 mmol/L	4.87	1.58–14.99
Sodium level ≥ 143 mmol/L	4.95	1.95–12.54
Long-termc psychoactive drug user	5.63	1.32–23.70

*These risk factors are not significant.

Chest 2005

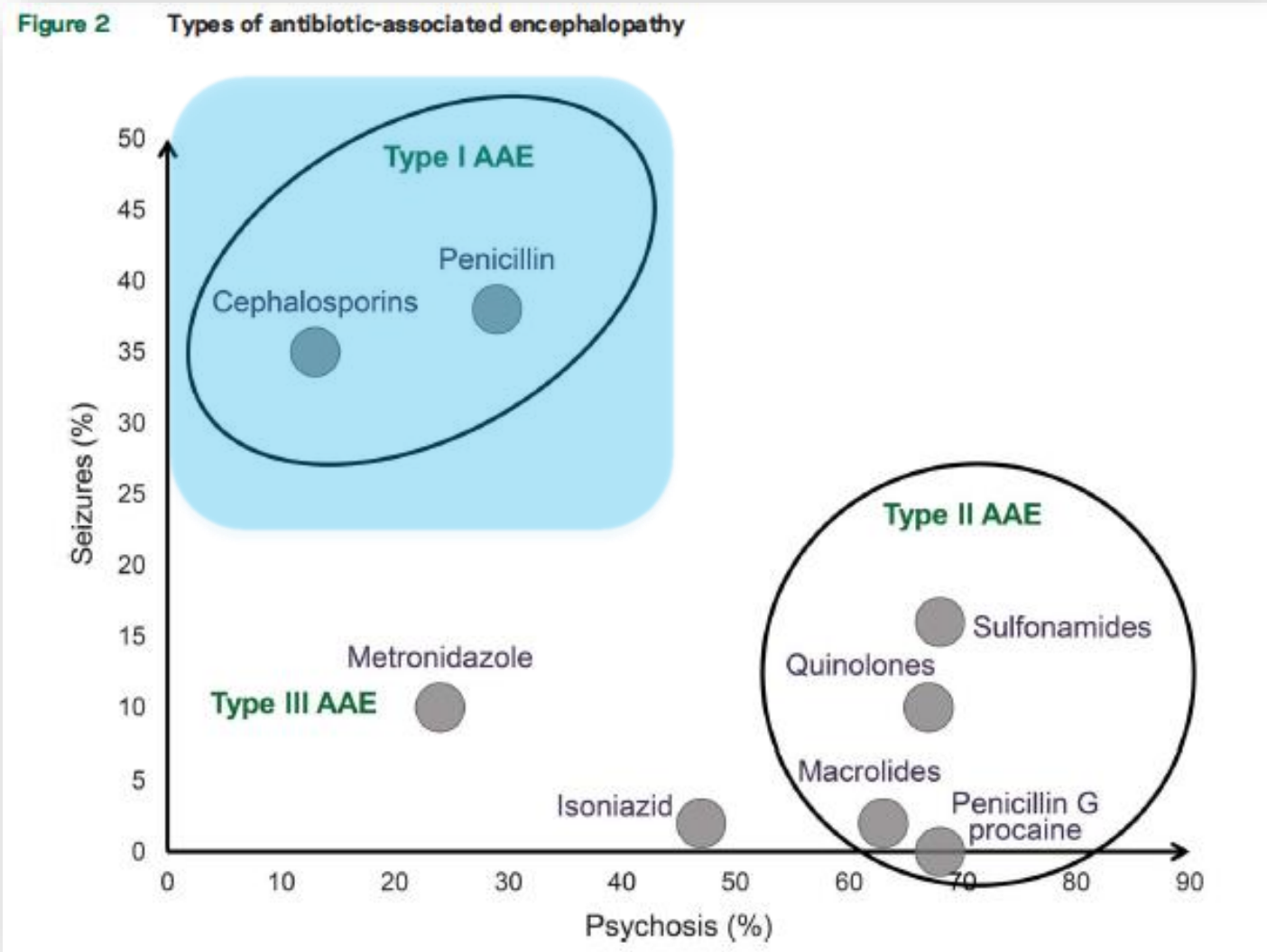
ORIGINAL

Potentially modifiable factors contributing to sepsis-associated encephalopathy

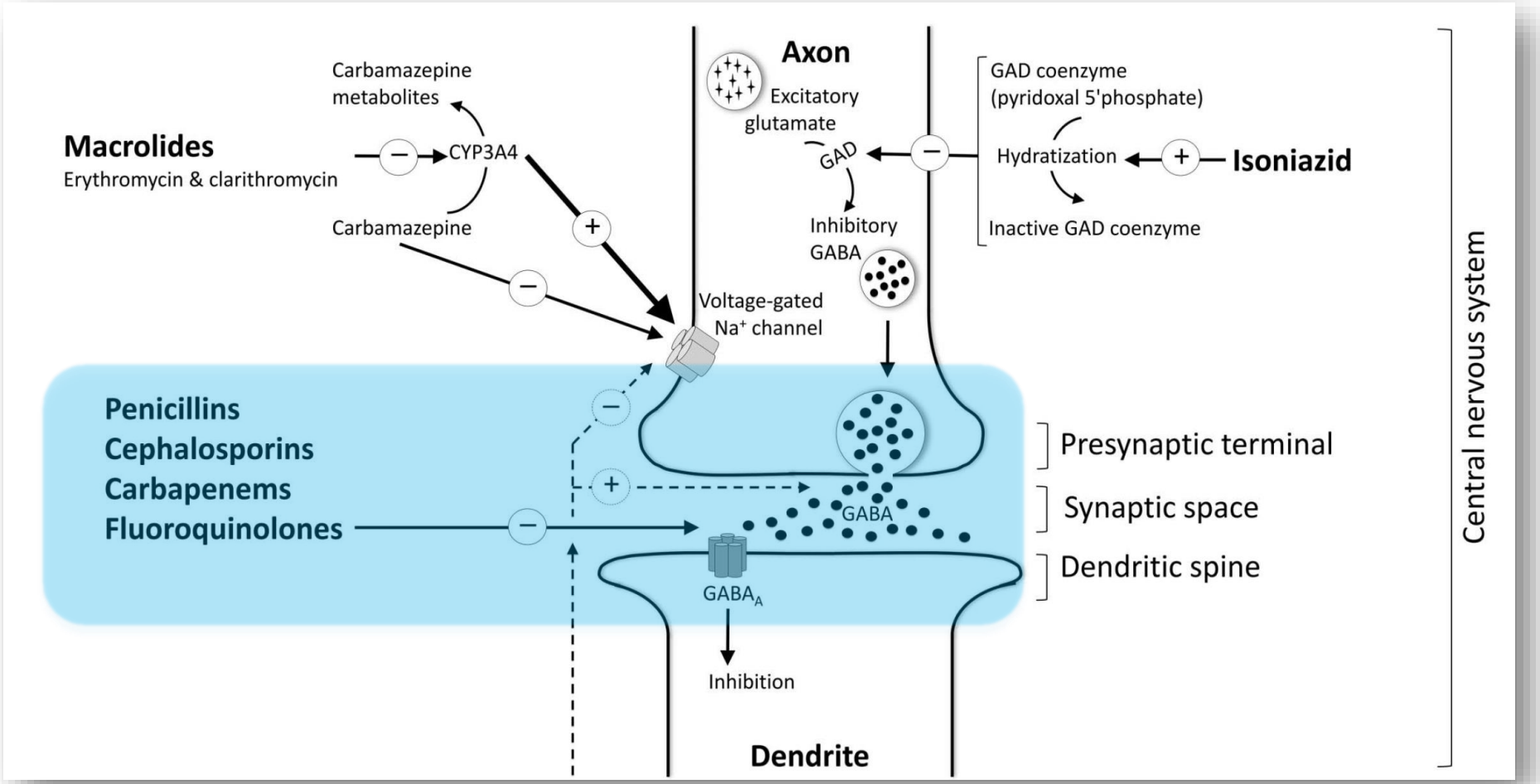
Variable	OR	95% CI		*p* value
Age, per 1-year increment	1.02	1.01	1.02	<0.01
Chronic alcohol abuse	3.38	2.34	4.89	<0.01
History of neurological disease	1.56	1.18	2.06	<0.01
Pre-existing cognitive impairment	2.25	1.09	4.67	0.03
Long-term use of psychoactive drugs	1.37	1.11	1.70	<0.01
Medical admission[a]	1.75	1.43	2.14	<0.01
Renal SOFA > 2	1.41	1.19	1.67	<0.01
Hypoglycemia, <3 mmol/l	2.66	1.27	5.59	<0.01
Hyperglycemia, >10 mmol/l	1.37	1.09	1.72	<0.01
Hypercapnia, >45 mmHg	1.91	1.53	2.38	<0.01
Hypernatremia, >145 mmol/l	2.30	1.48	3.57	<0.01
Staphylococcus aureus	1.54	1.05	2.25	0.03
Catheter-related infection	0.53	0.32	0.88	0.01
Skin and soft tissue infection	0.57	0.39	0.82	<0.01

R. Sonneville, Intensive Care Medicine 2017

Antibiotic-associated encephalopathy



Neurology 2016



Neurology 2016

Prise en charge

1. Identifier les patients à risque dés l'admission
2. Evaluer les patients à l'aide d'outils validés
3. Eviter la sédation excessive, prévenir la neurotoxicité
4. Mobiliser précocement les patients
5. Autres mesures

He has been in the unit for 10 days and largely immobile...
Is there anything we can do to prevent ICU-related weakness?

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

EVERY DAY FROM ICU ADMISSION

Daily sedation stops

Early physical therapy，sitting, standing，walking ….

	Intervention (n=49)	Control (n=55)	p value
Return to independent functional status at hospital discharge	29 (59%)	19 (35%)	0·02
ICU delirium (days)	2·0 (0·0–6·0)	4·0 (2·0–7·0)	0·03
Time in ICU with delirium (%)	33% (0–58)	57% (33–69)	0·02
Hospital delirium (days)	2·0 (0·0–6·0)	4·0 (2·0–8·0)	0·02
Hospital days with delirium (%)	28% (26)	41% (27)	0·01
Barthel Index score at hospital discharge	75 (7·5–95)	55 (0–85)	0·05
ICU-acquired paresis at hospital discharge	15 (31%)	27 (49%)	0·09

Lancet 2009; 373: 1874–82

Feasibility of physical and occupational therapy beginning from initiation of mechanical ventilation*

Mark C. Pohlman, MD; William D. Schweickert, MD; Anne S. Pohlman, RN, MSN; Celerina Nigos, RN; Amy J. Pawlik, PT; Cheryl L. Esbrook, OTR/L; Linda Spears, PT; Megan Miller, OTR/L; Mietka Franczyk, PT; Deanna Deprizio, OTR/L; Gregory A. Schmidt, MD; Amy Bowman, RN, BSN; Rhonda Barr, PT; Kathryn McCallister, BS; Jesse B. Hall, MD; John P. Kress, MD

- Sitting at the **edge of bed: 69%**
- **Transfert from bed to chair: 33%**
- **Standing: 33%**
- **Walking** (5 m/ session): **15%**

=> Interruption of therapy in 4% of patients
agitation
patient-ventilator asynchrony

Crit Care Med 2010

Early, goal-directed mobilisation in the surgical intensive care unit: a randomised controlled trial

*Stefan J Schaller, Matthew Anstey, Manfred Blobner, Thomas Edrich, Stephanie D Grabitz, Ilse Gradwohl-Matis, Markus Heim, Timothy Houle, Tobias Kurth, Nicola Latronico, Jarone Lee, Matthew J Meyer, Thomas Peponis, Daniel Talmor, George C Velmahos, Karen Waak, J Matthias Walz, Ross Zafonte, Matthias Eikermann, for the International Early SOMS-guided Mobilization Research Initiative**

Surgical ICU optimal mobilisation score (SOMS)

A Define a challenging mobilisation goal each day

	Level 0 **No activity**	Level 1 **Passive range of motion**	Level 2 **Sitting**	Level 3 **Standing**	Level 4 **Ambulation**
Safety criteria to advance mobilisation	a) Stable spine b) No excessive predicted mortality within the next 24 h c) ICP <20 cm H_2O →				
		a) Follows one-step commands b) Volitional movement present c) No SCI, open lumbar drains, open EVD, femoral-vein access for CVVH →			
			a) 3 of 5 bilateral quadriceps strength* b) Sits with no support c) No weight-bearing restrictions →		
				a) Stands twice with minimal assistance b) Steps-in-place with minimal assistance →	

B Implement the challenging mobilisation goal across shifts

- Address potential barriers for the goal
- Develop appropriate procedures to reach the goal
- Ensure inter-professional closed-loop communication

Figure 1: **Early, goal-directed mobilisation algorithm**

(A) Definition of mobility goal. On the basis of a clinical examination taken on rounds, a daily challenging mobilisation goal was defined as either level 0 (no mobilisation), level 1 (passive range of motion exercises in the bed), level 2 (sitting), level 3 (standing), or level 4 (ambulation). (B) Implementation of mobilisation therapy. The target mobilisation goal was posted at the patient's bedside. Barriers to successful implementation were then identified by the facilitator through multi-professional closed-loop communication. Concerns raised by nurses, physical therapists, and intensive care unit (ICU) physicians and primary teams were invited in a systematised approach. The facilitator emphasised clear communication of the challenging mobility goal between ICU and primary teams, and made sure the mobility goal was addressed during ICU handover from day to night shifts. ICP=intracranial pressure. SCI=spinal cord injury. EVD=extracranial ventricular drains. CVVH=continuous veno-venous haemofiltration. *Quadriceps strength measured per the Medical Research Council scale for evaluating peripheral muscle strength.

2016

Early, goal-directed mobilisation in the surgical intensive care unit: a randomised controlled trial

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	Intervention group (n=104)	Control group (n=96)	Total (N=200)
Age, years	66 (48–73)	64 (45–76)	65 (46–74)
Male sex	65 (63%)	61 (64%)	126 (63%)
Height, cm	170 (10)	170 (15)	170 (13)
Weight, kg	80 (20)	81 (24)	81 (22)
Glasgow Coma Scale	9 (8–11)	9 (8–11)	9 (8–11)
APACHE II	16 (12–22)	17 (11–22)	16 (12–22)
APACHE-based predicted mortality	21 (10–38)	20 (9–34)	20 (10–36)
Barthel Score	100 (100–100)	100 (100–100)	100 (100–100)
Procedural severity score, mortality	85 (75–91)	85 (74–93)	65 (43–77)
Admission lab			
Haemoglobin concentration, mmol/L	11·2 (2·1)	11·5 (2·2)	11·4 (2·2)
Creatinine concentration, µmol/L	1·4 (1·3)	1·4 (1·1)	1·4 (1·2)
International normalised ratio	1·2 (1·1–1·3)	1·2 (1·1–1·3)	1·2 (1·1–1·3)
Intensive care unit therapy			
Total physical therapy time, min	60 (0–110)	48 (20–128)	60 (0–120)

	Intervention group (n=104)	Control group (n=96)	Group difference* (95% CI)	p value
Main outcomes (hierarchically tested in prespecified order)				
Mean achieved SOMS during ICU stay†	2·2 (1·0)	1·5 (0·8)	0·7 (0·4 to 1·0)	<0·0001
ICU LOS, days‡	7 (5–12)	10 (6–15)	−3·0 (−6·0 to −1·0)	0·0054
mmFIM at hospital discharge‡	8 (4–8)	5 (2–8)	3·0 (1·0 to 4·0)	0·0002
Subdomain locomotion	4 (2–4)	2 (1–4)	2·0 (0·0 to 2·0)	0·0003
Subdomain transfer	4 (2–4)	3 (2–4)	1·0 (1·0 to 2·0)	0·0001
Functional independent at hospital discharge	44 (51)	25 (28)	OR 2·6 (1·4 to 4·8)	0·0030
Secondary outcomes				
Quality of life at 3 months after hospital discharge in survivors§	61·3 (18·4)	63·0 (19·9)	−1·7 (−10·1 to 6·7)	0·69
Muscle weakness, defined by MRC scale	50 (69%)	51 (69%)	OR 1·0 (0·5–2·1)	0·95

2016

Prise en charge

1. Identifier les patients à risque dés l'admission
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5. Autres mesures

Question 3 : Quelles mesures simples ont montré un bénéfice clinique dans la prise en charge du delirium en réanimation ?

- A. Luminothérapie artificielle
- B. Mélatonine
- C. Mesures de prévention du bruit
- D. Restriction de la contention physique
- E. Aucune de ces mesures

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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.

The New England Journal of Medicine

MARCH 4, 1999

Patient at risk
> 65 years

→

BUNDLE

Orientation

Sleep

Vision, audition

Early mobilisation

Hydratation

→

Reduction of DELIRIUM incidence ?

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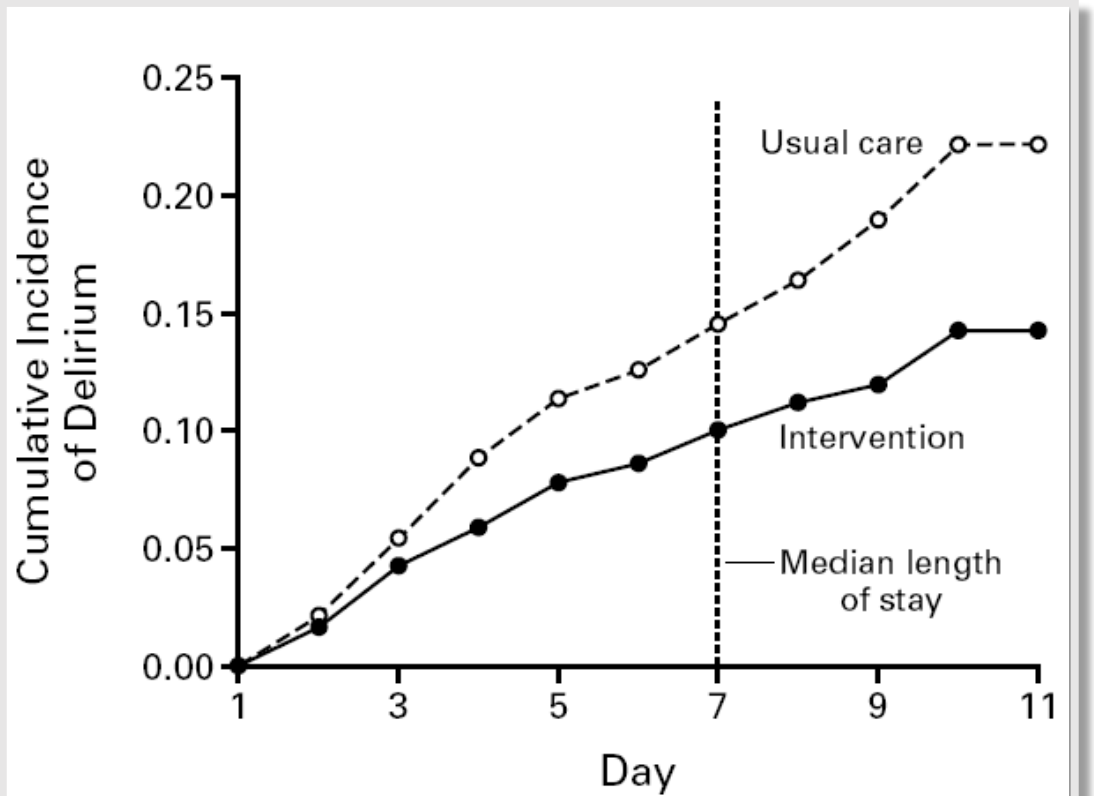

Figure 1. Cumulative Incidence of Delirium According to Study Group.

Améliorer environnement en réanimation

- Réduire le **niveau de bruit**, moduler intensité des alarmes
- Favoriser alternance **jour-nuit & lumière naturelle**
- **Chambre particulière** pour chaque patient
- **Réorientation:** photographies, date et heure visibles
- Rechercher un manque de **sommeil**, ses causes
- Réévaluer nécessité d'une **contention physique**

http://www.srlf.org/Data/ModuleGestionDeContenu/application/852.pdf

Intensive Care Med (2015) 41:1347–1350
DOI 10.1007/s00134-015-3729-x

Gérald Chanques
Judith Nelson
Kathleen Puntillo

Five patient symptoms that you should evaluate every day

Table 1 Assessment, diagnosis, and treatment of five common stressful symptoms in ICU patients able to communicate

Symptom	Patient's self-assessment		Possible causes			Treatment	
	General assessment	ICU specific tools	Common causes	Major diagnoses	Iatrogenic causes	Nonpharmacological	Pharmacological
1. Pain	▪ NRS ▪ VAS ▪ VDS OR "Yes/No" question if patient is poorly communicant but able to answer by nodding	Visually enlarged NRS	▪ Trauma/surgery ▪ Back and limbs	▪ Surgical complication ▪ Phlebitis, infarction…	▪ Tube & catheters ▪ Care procedures ▪ Immobilisation	▪ Distraction, music, reassurance ▪ Positioning	▪ Opioids ▪ Nonopioids ± opioids
2. Thirst			▪ No oral fluids	▪ GI diagnosis ▪ Hypovolemia	▪ MV ▪ Furosemide, anti-hypertensive drugs, opioids	▪ Oral swab wipes + ice-cold water sprays + lip moisturizer ▪ Rehydratation	▪ Switch opioids to nonopioids
3. Anxiety		Face anxiety scale	▪ ICU environment	▪ Dyspnea	▪ Care procedures	▪ See pain	▪ Sedatives
4. Dyspnea		Modified Borg scale		▪ Heart & Lung ▪ Acidosis, sepsis… ▪ Pain, anxiety	▪ Inappropriate MV setting ▪ ET suctioning	▪ Adjusted MV setting ▪ See pain	▪ Opioids*
5. Poor sleep		Richards-Campbell Sleep Questionnaire	▪ ICU environment	▪ Pain, anxiety, dyspnea ▪ Delirium	▪ Inappropriate MV setting ▪ Steroids, opioids, sedatives	▪ Adjusted MV setting ▪ Adjusted light, noise, alarms ▪ Ear plugs, eye masks	▪ Sedatives**

NRS numeric rating scale, *VAS* visual analogue scale, *VDS* verbal descriptor scale, *ICU* intensive care unit, *MV* mechanical ventilation, *GI* gastrointestinal, *ET* endotracheal

* If ventilator adjustment and correction of other causes are insufficient

** If non-pharmacological treatment is insufficient and patient clearly asking for sleep

Prise en charge

1. **Identifier les patients à risque** dés l'admission
2. Evaluer les patients à l'aide d'**outils validés**
3. Eviter la **sédation excessive**, prévenir la **neurotoxicité**
4. **Mobiliser précocement** les patients
5. **Ne pas négliger les mesures simples, peu couteuses, potentiellement bénéfiques**

Does this patient have delirium?

Jorge I. F. Salluh[1,2*], Tarek Sharshar[3,4] and John P. Kress[5]

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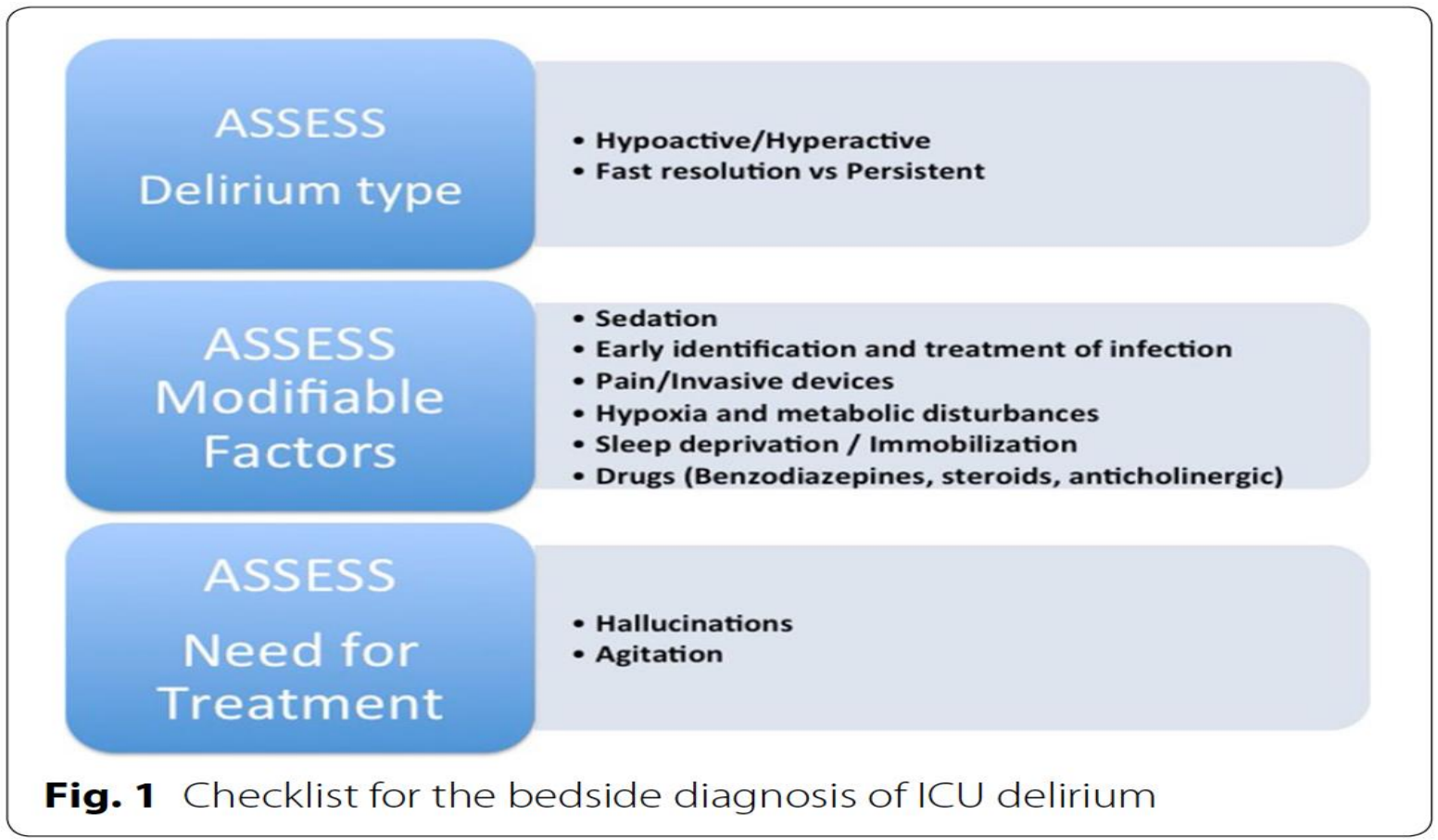

Fig. 1 Checklist for the bedside diagnosis of ICU delirium

Neurosciences in Intensive Care International Symposium (NICIS)

NICIS Europe

8th EDITION

Neuroscience of Critical illness and acute CNS infection

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Jean Mantz Award for clinical research - 1000 €

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Dr Vincent Degos | University of Pierre & Marie Curie
Pr Tarek Sharshar | Paris-Descartes University, Sainte-Anne teaching Hospital
Dr Romain Sonneville | Paris Diderot University
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Merci ☺ ☺ ☺ !