Il delirium dell'anziano in Pronto Soccorso

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OUTLINE

- Chi
- Cosa
- Come
- Quando
- Dove
- Perché
- Take-home Messages

CRITERI DIAGNOSTICI DSM-V

A) **Disturbo dell'attenzione** (i.e. ridotta capacità a dirigere, focalizzare, sostenere e shiftare l'attenzione) **e consapevolezza** (ridotto orientamento del se nell'ambiente)

B) Il deficit si sviluppa in un **periodo di tempo relativamente breve** (ore o pochi giorni), rappresenta un **cambiamento** dai livelli di attenzione e consapevolezza di base, e tende a **fluttuare** in gravità nel corso della giornata

C) È presente **un altro deficit cognitivo** (es. memoria, disorientamento, linguaggio, abilità visuo-spaziali, o dispercezioni)

D) I deficit di cui ai criteri A e C **non** sono **spiegabili** sulla base di un **preesistente** (stazionario o in evoluzione) **disturbo neurocognitivo** e **non** si verificano in un contesto di grave riduzione dei livelli di arousal (es. **coma**)

E) Vi è evidenza per storia clinica, esame obiettivo o risultati di laboratorio che il delirium è una **diretta conseguenza di un problema clinico, intossicazione o sospensione di farmaci, esposizione a tossine, o è dovuto a molteplici eziologie**

Il delirium è presente se tutti e 5 i criteri sono soddisfatti

DELIRIUM

The Relationship Between a Chief Complaint of "Altered Mental Status" and Delirium in Older Emergency Department Patients

Jin H. Han, MD, MSc, John F. Schnelle, MD, and E. Wesley Ely, MD, MPH

Abstract

Background: Altered mental status is a common chief complaint among older emergency department (ED) patients. Patients with this chief complaint are likely delirious, but to the authors' knowledge, this relationship has not been well characterized. Additionally, health care providers frequently ascribe "altered mental status" to other causes, such as dementia, psychosis, or depression.

Objectives: The objective was to determine the relationship between altered mental status as a chief complaint and delirium.

Methods: This was a secondary analysis of a cross-sectional study designed to validate three brief delirium assessments, conducted from July 2009 to March 2012. English-speaking patients who were 65 years or older and in the ED for <12 hours were included. Patients who were comatose or nonverbal or unable to follow simple commands prior to the acute illness were excluded. Chief complaints were obtained from the ED nurse triage assessment. The reference standard for delirium was a comprehensive psychiatrist assessment using the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition, Text Revision criteria. Sensitivity, specificity, positive likelihood ratio (LR), and negative LR with their 95% confidence intervals (CIs) were calculated using the psychiatrist's assessment as the reference standard.

Results: A total of 406 patients were enrolled. The median age was 73.5 years old (interquartile range [IQR] – 69 to 80 years), 202 (49.8%) were female, 57 (14.0%) were nonwhite race, and 50 (12.3%) had delirium. Twenty-three (5.7%) of the cohort had chief complaints of altered mental status. The presence of this chief complaint was 38.0% sensitive (95% CI – 25.9% to 51.9%) and 98.9% specific (95% CI – 97.2% to 99.6%). The negative LR was 0.63 (95% CI – 0.50 to 0.78), and the positive LR was 33.82 (95% CI – 11.99 to 95.38).

Conclusions: The absence of a chief complaint of altered mental status should not reassure the clinician that delirium is absent. This syndrome will be missed unless it is actively looked for using a validated delirium assessment. However, patients with this chief complaint are highly likely to be delirious, and no

SINTOMO

(stato confusionale acuto)

69 to 80 years), 202 (49.8%) were female, 57 (14.0%) were nonwhite race, and 50 (12.3%) had delirium. Twenty-three (5.7%) of the cohort had chief complaints of altered mental status. The presence of this chief complaint was 38.0% sensitive (95% CI – 25.9% to 51.9%) and 98.9% specific (95% CI – 97.2% to 99.6%). The negative LR was 0.63 (95% CI – 0.50 to 0.78), and the positive LR was 33.82 (95% CI – 11.99 to 95.38).

DISPNEA

- Edema polmonare acuto/scompenso cardiaco
- Equivalente anginoso → SCA
- Embolia polmonare
- Polmonite
- BPCO riacutizzata/crisi asmatica/allergia
- PNX spontaneo/iperteso

POLIPNEA

DELIRIUM: CAUSE

- **Farmaci**
- **Ritenzione fecale e/o urinaria**
- **Infezione** *(polmonite ed IVU)*
- **Malattie endocrino-metaboliche**
  - *ipo/iperglicemia*
  - *ipo/ipertiroidismo*
  - *insufficienza renale/epatica*
  - *squilibri idro-elettrolitici*
- **Malattie cardiovascolari**
  - *infarto miocardico*
  - *scompenso cardiaco*
  - *aritmie*
  - *embolia polmonare*

Cause meno comuni

- **Alcool** (abuso o astinenza)
- **Ictus**
- **Ematoma subdurale**
- **Neoplasie (cerebrali)**

Cause rare

- **Anemia**
- **Malnutrizione**
- **Trauma cranico**
- **Epilessia**

CAUSE: ACRONIMI

Iatrogenic (drugs)

Infections

Injury (trauma)

Illness exacerbation

Inconsistent environment

Inconsistent caregiver

Is patient depressed?

Drugs

Environment

Low oxygen

Infections

Ritention

Ischemia

Undernutrition

Metabolic

Subdural haematoma

Vascular

Infections

Nutrition

Drugs

Injury (trauma)

Cardiac

Autoimmune

Tumors

Endocrine

"I WATCH DEATH"

Potential causes	Differential diagnosis
Infectious	Sepsis, encephalitis, meningitis, syphilis, central nervous system abscess
Withdrawal	Alcohol, barbiturates, sedative-hypnotics
Acute metabolic	Acidosis, electrolyte disturbance, hepatic/renal failure, other metabolic disturbances (glucose, magnesium, calcium)
Trauma	Head, burns
CNS disease	Hemorrhage, cerebrovascular accident, vasculitis, seizures, tumor
Hypoxia	Acute hypoxia, chronic lung disease, hypotension
Deficiencies	Vitamin B_{12}, hypovitaminosis, niacin, thiamine
Environmental	Hypo/hyperthermia, endocrinopathies, diabetes, adrenal, thyroid
Acute vascular	Hypertensive emergency, subarachnoid hemorrhage, sagittal vein thrombosis
Toxins/drugs	Medications, street drugs, alcohols, pesticides, industrial poisons, carbon monoxide, cyanide, solvents, etc
Heavy metals	Lead, mercury

Gower LEJ et al. West J Emerg Med 2012

LIFE-THREATENING CAUSES OF DELIRIUM

Wernicke disease or ethanol withdrawal

Hypoxia or hypercarbia

Hypoglycemia

Hypertensive encephalopathy

Hyperthermia or hypothermia

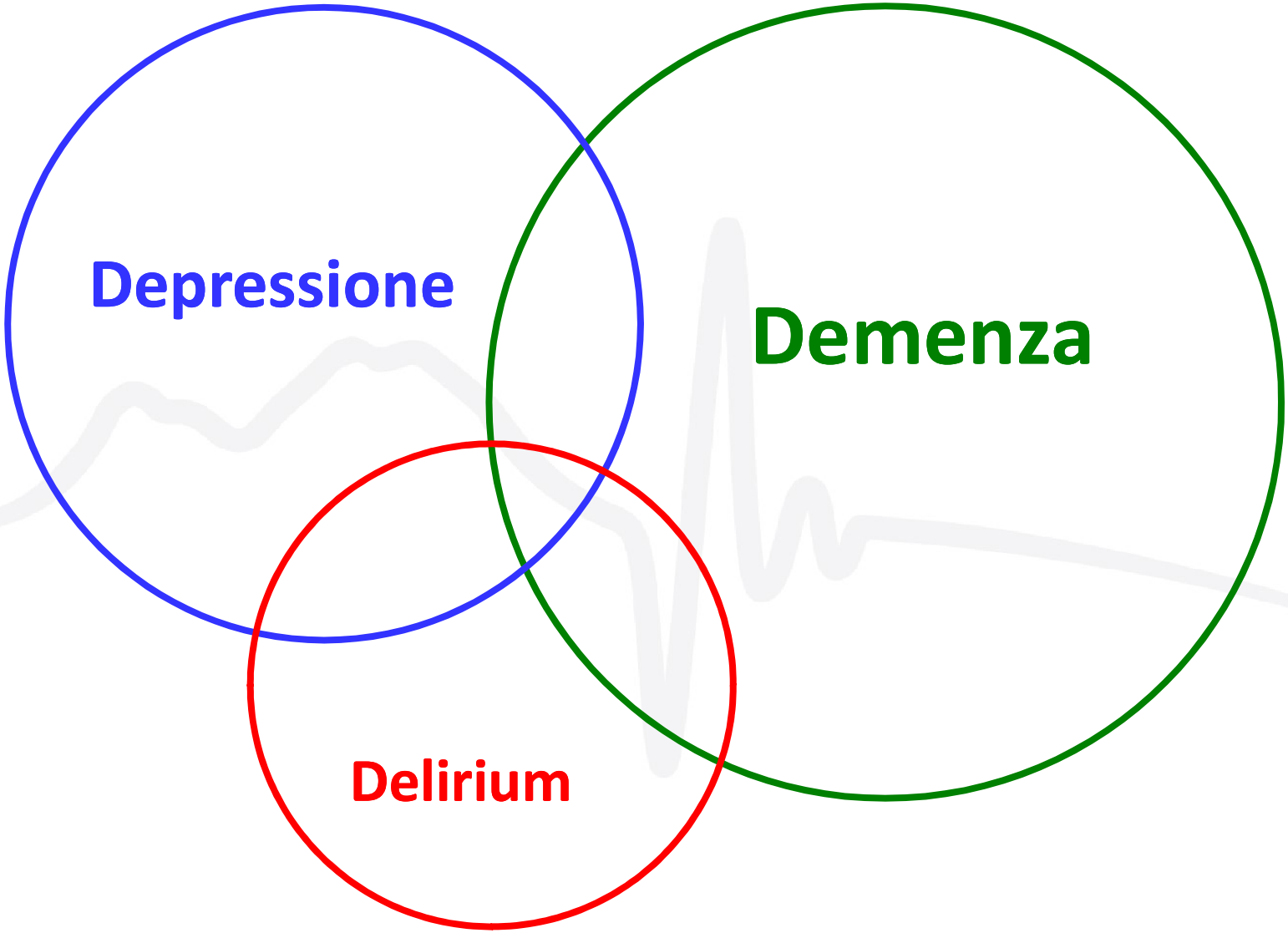
Intracerebral hemorrhage

Meningitis/encephalitis

Poisoning (whether exogenous or iatrogenic)

Status epilepticus

Han JH, Wilber ST. Clin Geriatr Med 2013


Depressione
Demenza
Delirium

OUTLINE

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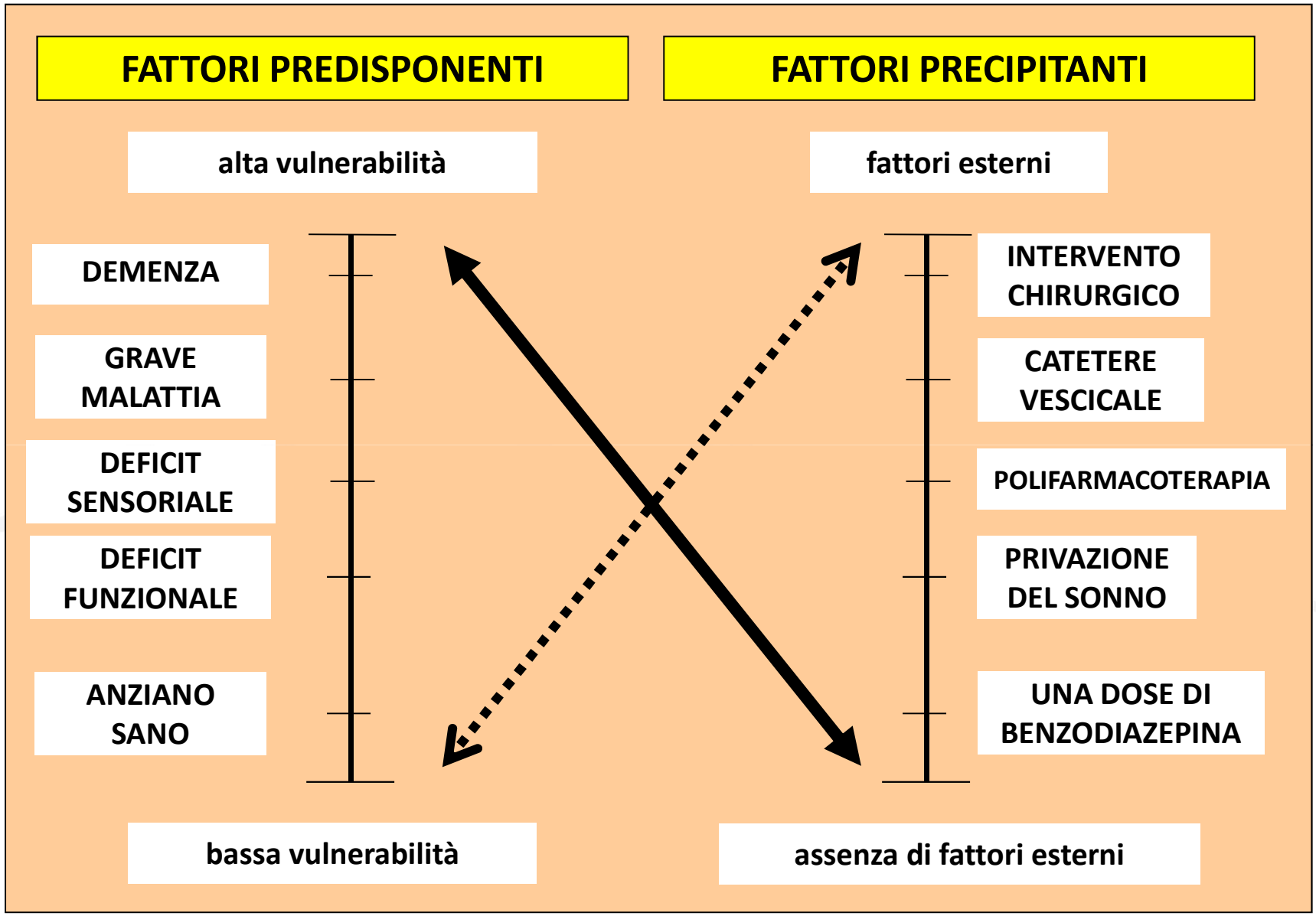
DELIRIUM RISK FACTORS

Predisposing Factors	Precipitating Factors
Demographics • Advanced age • Male gender Comorbidity • Dementia • Number of comorbid conditions • Severity of comorbid conditions • Chronic kidney disease • End-stage liver disease • Terminal illness Medications and drugs • Polypharmacy • Baseline psychoactive medication use • History of alcohol or other substance abuse Functional status • Functional impairment • Immobility Sensory impairment • Hearing impairment • Visual impairment Decreased oral intake • Dehydration • Malnutrition Psychiatric • Depression • **Nursing home residents**	Systemic • Infection • Inadequate pain control • Trauma • Dehydration • Hypo- or hyperthermia Metabolic • Thiamine deficiency (Wernicke encephalopathy) • Hepatic or renal failure • Electrolyte disturbances • Hypoglycemia/hyperglycemia • Thyroid dysfunction Medications and drugs • Medications and medication changes • Recreational drug use or withdrawal Central nervous system • Cerebrovascular accident • Intraparenchymal hemorrhage • Subdural/epidural hematoma • Seizures and postictal state • Meningitis/encephalitis Cardiopulmonary • Acute myocardial infarction • Congestive heart failure • Respiratory failure • Shock Iatrogenic • Procedures or surgeries • Indwelling urinary catheters • Physical restraints

Han JH, Wilber ST. Clin Geriatr Med 2013



Inouye SK, Charpentier PA. JAMA 1996

STATO COGNITIVO

Un certo grado di deterioramento cognitivo è presente nel 15-40% degli ultra65enni in PS (specie se >80 aa e/o istituzionalizzati), ma viene riconosciuto solo nel 27-50% dei casi, con gravi implicazioni nella precisione dell'anamnesi (undertriage, ritardo in diagnosi/terapia) e nella comprensione delle indicazioni date alla dimissione (ADRs, compliance, presenza/affidabilità del caregiver)

Table 2.
Prevalence of mental status impairment in the ED.

Population	Prevalence (%; 95% CI)
All patients with mental status impairment	78/297 (26; 21–31)
Cognitive impairment without delirium	48/297 (16; 12–20)
Delirium*	30/297 (10; 7–14)

*Includes 17 (6%) patients with positive scores on both the CMC and CAM surveys.

Table 3.
Documentation of mental status impairment.

Nature of Impairment	Any Documentation (%; 95% CI)	Delirium, Cognitive Impairment, or Acceptable Synonym (%; 95% CI)
All patients with mental status impairment	22/78 (28; 19–40)	13/78 (17; 9–27)
Delirium	13/30 (43; 26–63)	4/30 (13; 4–31)
Cognitive impairment without delirium	9/48 (19; 9–33)	9/48 (19; 9–33)

Hustey FM et al. Ann Emerg Med 2002
Chiovenda P et al. Am J emerg Med 2002

STATO FUNZIONALE

Lo stato funzionale viene pressoché ignorato (75% casi), eppure:

- i ⅔ sono disabili in almeno una IADL o BADL
- soltanto il 22% è completamente indipendente in tutte le ADL
- il 74% afferma che il declino funzionale dall'inizio dei sintomi è stato **determinante nella decisione di ricorrere al PS**
- **il 28% non sarebbe in grado di badare a sé stesso a domicilio: il 20% viene dimesso ugualmente**

Spesso vi è discordanza tra lo stato funzionale autopercepito dal paziente e quello percepito dal familiare/caregiver, principalmente per il mancato utilizzo di strumenti standardizzati per la sua valutazione (ADL, IADL, Barthel Index etc.)

Wilber ST et al. Acad Emerg Med 2006
Rodriguez-Molinero A et al. BMC Geriatrics 2006

OUTLINE

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  → deve riconoscere il delirium in PS
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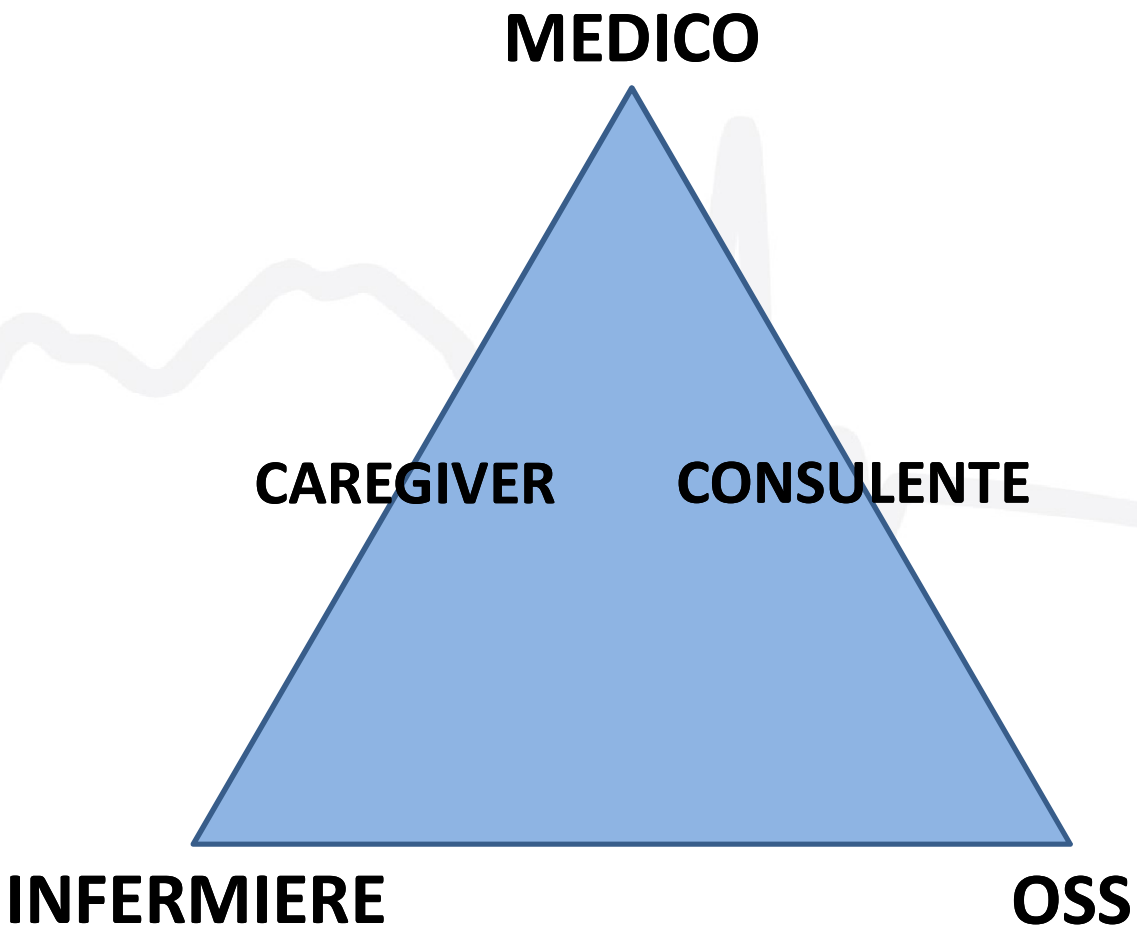
LE PARTI IN GIOCO



Delirium in Older Emergency Department Patients: Recognition, Risk Factors, and Psychomotor Subtypes

- **Prevalenza del delirium in PS: 8.3% (25/303)**
- **Delirium ipoattivo: 92%**
- **Missed delirium by ED physicians: 76% (19/25)**
- **Missed delirium by hospital physicians: 93.8% (15/16)**
- **Dementia, Katz ADL ≤4, hearing impairment as risk factor for presenting with delirium in the ED**

Han JH et al. Acad Emerg Med 2009

Emergency physician recognition of delirium

Emergency physician rating	Researcher rating	
	Delirium	No delirium
Delirium	8	7
No delirium	16	228
Sensitivity (95% CI)	0.33 (0.16 to 0.55)	
Specificity (95% CI)	0.97 (0.93 to 0.99)	
κ (95% CI)	0.37 (0.16 to 0.57)	
	Inattention	No inattention
Inattention	23	21
No inattention	32	183
Sensitivity (95% CI)	0.44 (0.29 to 0.56)	
Specificity (95% CI)	0.89 (0.84 to 0.93)	
κ (95% CI)	0.34 (0.20 to 0.48)	
	Disorganised thinking	No disorganised thinking
Disorganised thinking	10	16
No disorganised thinking	21	212
Sensitivity (95% CI)	0.32 (0.17 to 0.51)	
Specificity (95% CI)	0.93 (0.89 to 0.96)	
κ (95% CI)	0.27 (0.10 to 0.44)	
	Altered level of consciousness	No altered level of consciousness
Altered level of consciousness	8	10
No altered level of consciousness	20	221
Sensitivity (95% CI)	0.28 (0.14 to 0.48)	
Specificity (95% CI)	0.96 (0.92 to 0.98)	
κ (95% CI)	0.29 (0.11 to 0.47)	
	Acute change in mental status	No acute change in mental status
Acute change in mental status	29	4
No acute change in mental status	38	186
Sensitivity (95% CI)	0.43 (0.31 to 0.56)	
Specificity (95% CI)	0.98 (0.94 to 0.99)	
κ (95% CI)	0.49 (0.37 to 0.62)	

Suffoletto B et al. Postgrad Med J 2014

DELIRIUM IN PS: ESISTE?

Cognitive assessment of 319 elderly (65+) patients in ED

	Cognitive assessment type, *n* (%)		
	Adequate	Partial	Inadequate
Number of patients	5 (1.6)	35 (10.9)	279 (87.5)
Points of cognition			
Attention	5	33	0
Orientation	5	29	0
Language	5	16	0
Memory	3	0	0
Perceptual disturbances	0	0	0
Acute onset	2	0	0

3. Results

3.1. Demographic characteristics

During the 12-month study period, 23,014 elderly (65+) people were assessed in the ED. The average age was 75.6 ± 7.4 years and 13,698 (59.5%) of the patients were female. The average age of 319 study population patients was 75.3 ± 7.7 and 187 (59%) of the patients were female, and 294 of them (92.2%) were living in the community. The basic characteristics of the study population can be seen in Table 1.

3.2. Cognitive status assessment and delirium diagnosis

Not even in a single patient in the study population of 319, at least according to the charts, was "delirium" formally diagnosed (by any of its synonyms). The rates and quality of cognitive assessment can be seen in Table 2.

Press Y et al. Arch Gerontol Geriatr 2009

Accessi AGU 2013: 9096

Ultra65enni: 7984

Ultra75enni: 6890

Delirium (diagnosi): 242 (3%)

Termini "compatibili": delirium, delirio, stato confusionale, stato soporoso

Delirium (triage): 431 (5.4%)

Termini "compatibili": delirium, stato di agitazione, stato confusionale, stato soporoso, decadimento (globale, generale)

DELIRIUM

	Prevalence (%)*	Incidence (%)*	Outcomes (adjusted RR†)
Surgical			
Cardiac	..	11–46	Cognitive dysfunction 1·7; functional decline 1·9
Non-cardiac	..	13–50	Functional decline 2·1; cognitive dysfunction 1·6
Orthopaedic	17	12–51	Dementia or cognitive dysfunction 6·4–41·2; admission to institution 5·6
Medical			
General medical	18–35	11–14	Mortality 1·5–1·6; functional decline 1·5
Old age medicine	25	20–29	Falls 1·3; mortality 1·9; admission to institution 2·5
Intensive care	7–50	19–82	Mortality 1·4–13·0; longer length of stay 1·4–2·1; extended mechanical ventilation 8·6
Stroke	..	10–27	Mortality 2·0; any of increased length of stay, functional impairment, or death 2·1
Dementia	18	56	Cognitive decline 1·6–3·1; admission to an institution 9·3; mortality 5·4
Palliative care, cancer	..	47	..
Nursing home or postacute care	14	20–22	Mortality 4·9
Emergency department	8–17	..	Mortality 1·7

Inouye S et al. Lancet 2014

IP-OSS: DELIRIUM

Misconosciuto..

Non conoscenza, da parte degli *infermieri*, dei criteri di identificazione

L'assenza di comunicazione tra i membri dello staff sui sintomi di insorgenza dello stato di confusione mentale acuta

Eden BM, Foreman MD (1996). Problems associated with underrecognition of delirium in critical care: a case study. Heart Lung 25(5):388-400

L'INFERMIERE


Accoglienza e Triage


Prima "interfaccia" con i parenti


Gestione del dolore in Post Triage


Soddisfacimento bisogni assistenziali

OSS


Monitoraggio continuo


Implementazione strumenti di screening


Presa in carico per la dimissione


Valutazione del microambiente (consulenza)

OUTLINE

- Cosa
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DELIRIUM: CLINICA

- ***Forma iperattiva (22%)*:** aumento dell'attività psico-motoria con agitazione ed irrequietezza (restless); facile distraibilità; allucinazioni, idee deliranti; aggressività e pericolosità per sé stessi e gli altri
- ***Forma ipoattiva (26%)*:** riduzione dell'attività psico-motoria e della vigilanza (sopore, stupor); rifiuto del cibo, della mobilizzazione, talvolta delle terapie
- ***Forma mista (42%)*:** alternanza dei quadri sopradescritti, anche più volte nella giornata; inversione ritmo sonno-veglia; ansia, paura, irritabilità, rabbia, euforia, apatia

DELIRIUM: CLINICA

CAM
(Confusion Assessment Method)

1. Modificazione acuta e fluttuazione dello stato di coscienza e del comportamento

E

2. Inattenzione (deficit dell'attenzione)

+

3. Disorganizzazione del pensiero

O

4. Alterato stato di coscienza (not alert)

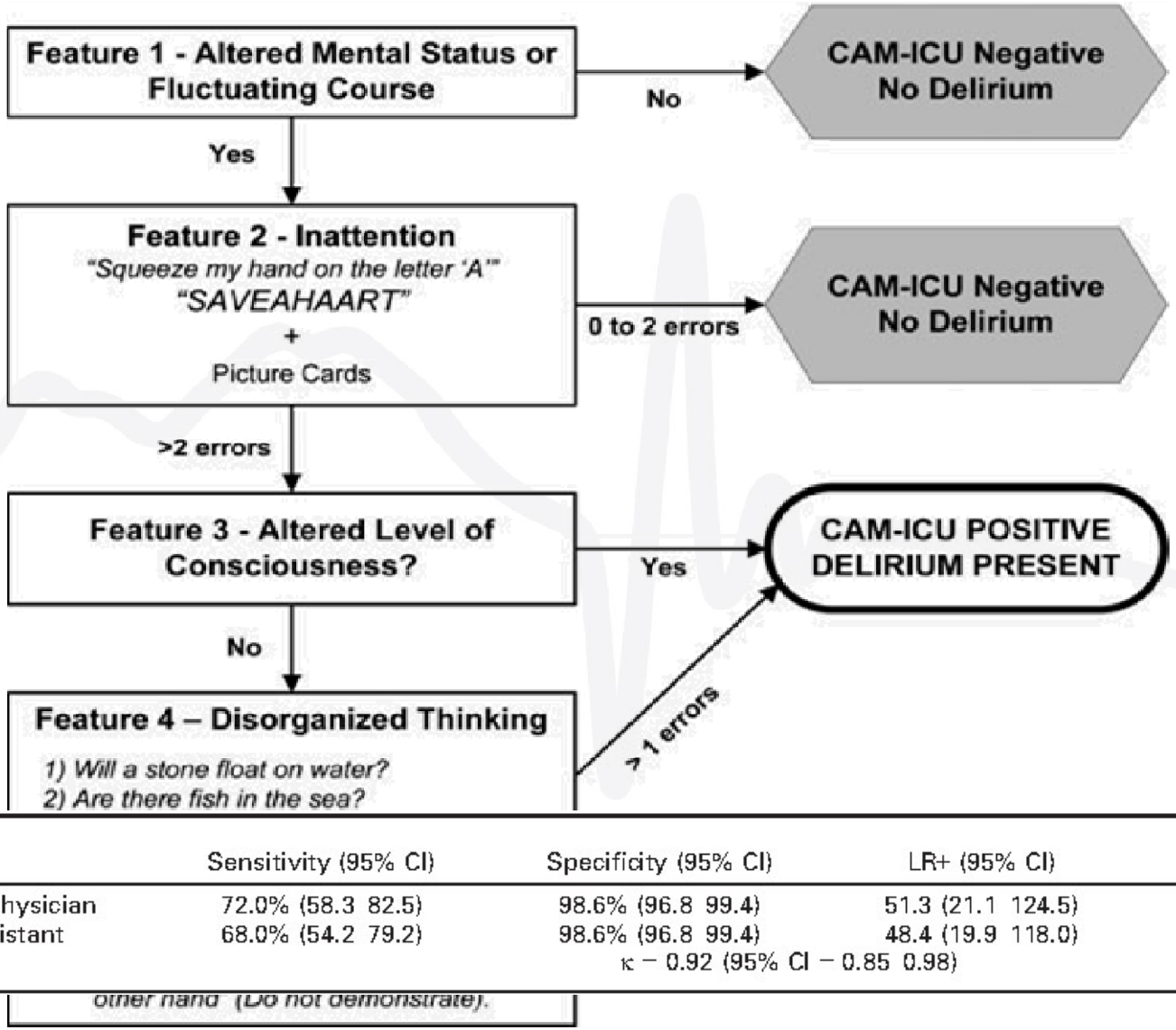
Inouye SK. Ann Intern Med 1990

CAM

1. **Insorgenza acuta ed andamento fluttuante. Chiedere al caregiver se c'è stato un cambiamento acuto nello stato mentale del paziente, rispetto alla sua situazione di base, e se il comportamento anormale varia durante la giornata (es. va e viene; si modifica d'intensità)**
2. **Perdita dell'attenzione. Il paziente è facilmente distraibile (Digit Span), non riesce a mantenere il filo del discorso?**
3. **Disorganizzazione del pensiero. Il pensiero del paziente è disorganizzato ed incoerente (es. passa da un argomento all'altro senza filo logico, in modo imprevedibile)?**
4. **Alterato livello di coscienza. Il paziente è in iperallerta, oppure letargico, stuporoso o comatoso?**

Inouye SK. Ann Intern Med 1990

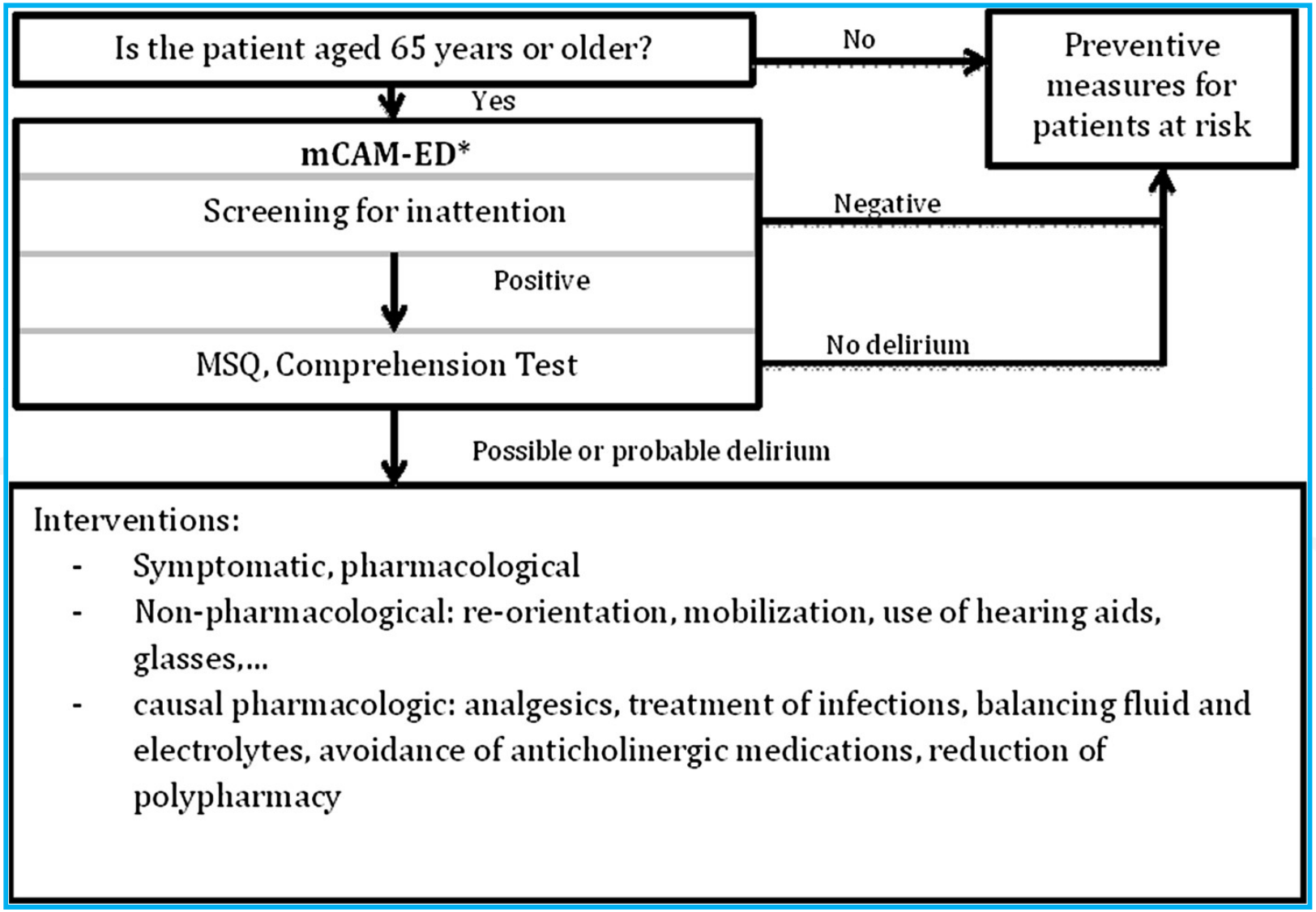
CAM-ICU (in PS)



Rater	Sensitivity (95% CI)	Specificity (95% CI)	LR+ (95% CI)	LR (95% CI)
Emergency physician	72.0% (58.3 82.5)	98.6% (96.8 99.4)	51.3 (21.1 124.5)	0.28 (0.18 0.44)
Research assistant	68.0% (54.2 79.2)	98.6% (96.8 99.4)	48.4 (19.9 118.0)	0.32 (0.22 0.49)
		κ = 0.92 (95% CI = 0.85 0.98)		

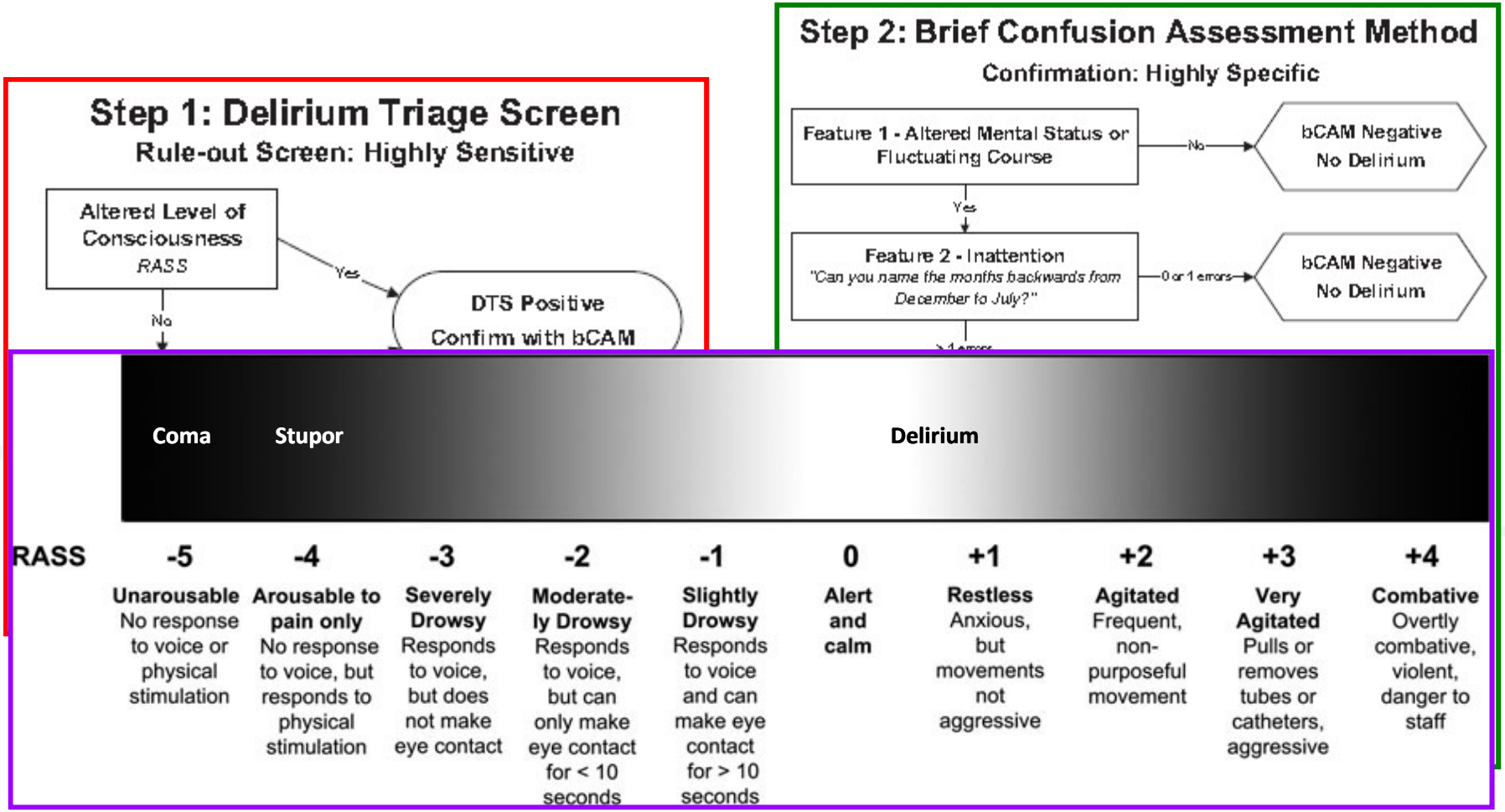
Han JH et al. Acad Emerg Med 2014

mCAM-ED



Grossmann FF et al. Scand J Trauma Resusc Emerg Med 2014

DTS+bCAM



Han JH et al. Ann Emerg Med 2013

4AT

(1) ALLERTA Pazienti considerabili soporosi (difficili da svegliare e/o evidentemente soporosi) oppure agitati/iperattivi. Osservare il paziente. Se dorme provare a svegliarlo parlandogli o con un leggero tocco sulla spalla. Chiedere ai pazienti di dichiarare il proprio nome ed indirizzo per collaborare alla valutazione.

Normale (completamente attento, ma non agitato durante la valutazione)	0
Moderata sonnolenza per meno di 10 sec dopo il risveglio, poi normale	0
Chiaramente anormale	4

(2) AMT4 Età, data di nascita, luogo (nome dell'ospedale o ambulatorio), anno

Nessun e	
Un error	
2 o più e	

4 o più: possibile delirium +/- deterioramento cognitivo (necessarie informazioni più dettagliate);
1-3: possibile deterioramento cognitivo (altri test necessari);
0: improbabile delirium o deterioramento cognitivo (ma delirium può essere presente se il punto 4 è incompleto)

(3) ATTENZIONE È consentito un suggerimento in

Nomina	
Inizia, ma nomina meno di 7 mesi/rifiuta di iniziare	1
Test non effettuabile (il paziente è indisposto, assonnato o disattento)	2

(4) CAMBIAMENTO ACUTO O DECORSO FLUTTUANTE Dimostrazione di evidente cambiamento o andamento fluttuante in: attenzione, comprensione o altre funzioni mentali (es. paranoia, allucinazioni) che si sono presentate nelle ultime 2 settimane ed ancora presenti nelle ultime 24h

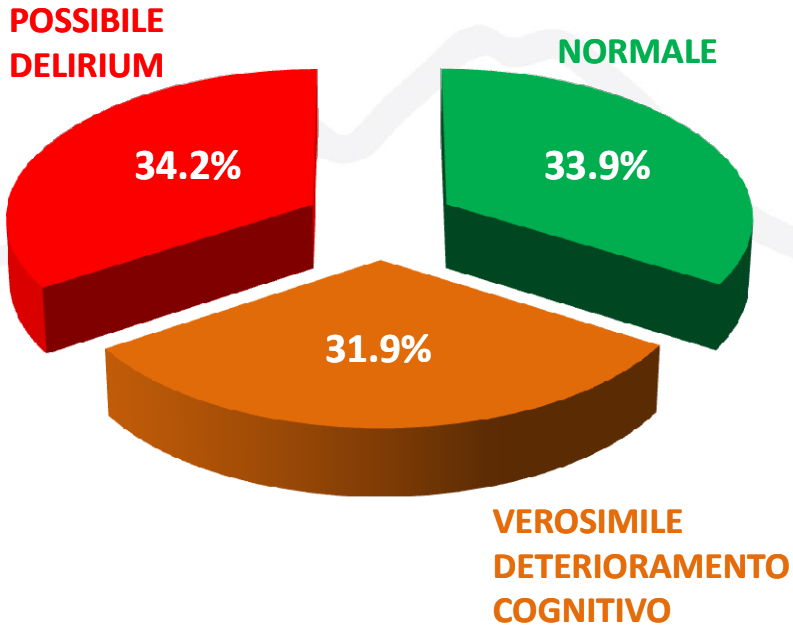
no	0
si	4

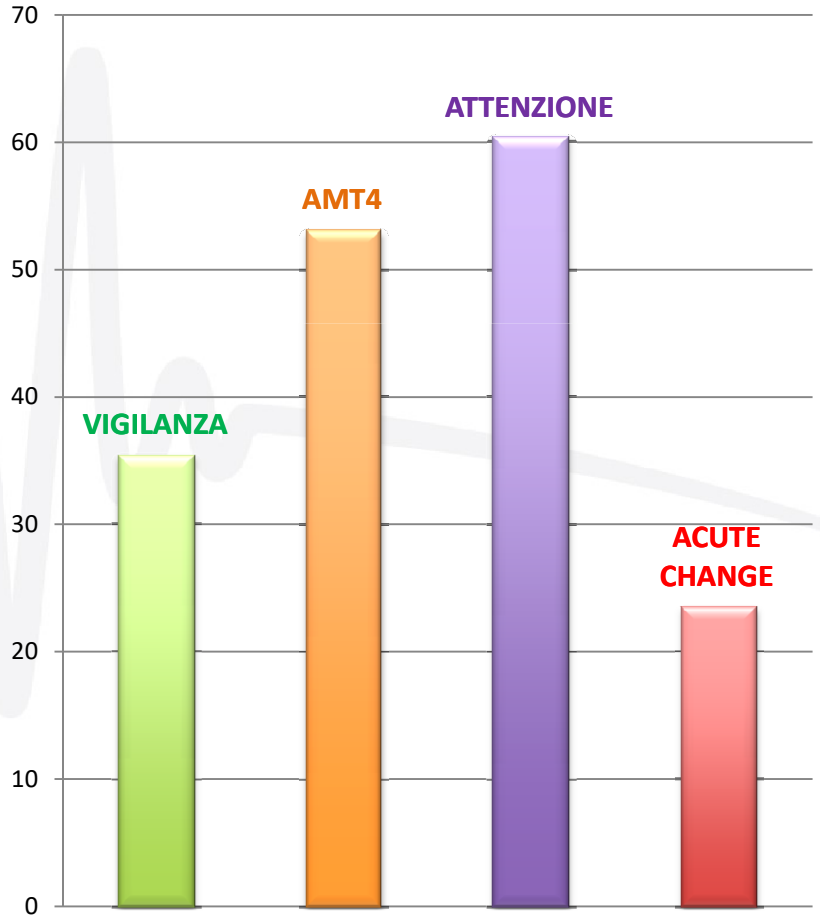
4AT SCORE: ☐

Bellelli G et al. Age Ageing 2014

4AT: DATI AGU

260 PAZIENTI; ETÀ MEDIA 85.7 ± 5.3 anni; 62% DONNE





Chiatti C, Salvi F et al. Unpublished

OUTLINE

- Cosa
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- Perché
- Take-home Messages

Diagnostic Accuracy of a Rapid Checklist to Identify Delirium in Older Patients Transported by EMS

Delirium Checklist Item	Total ($n = 259$)	Delirium ($n = 24$)	No Delirium ($n = 235$)	p-Value
Acute change	27 (10%)	9 (38%)	18 (8%)	< 0.0001
Inattention	49 (19%)	12 (50%)	37 (16%)	< 0.0001
Disorganized thinking	30 (12%)	11 (46%)	19 (8%)	< 0.0001
Abnormal level of consciousness	24 (9%)	9 (37%)	15 (6%)	< 0.0001

Number of Abnormal Responses	Sensitivity	Specificity	Classified	LR+	LR−
($= 0$)	100.00%	0.00%	9.27%	1	
(≤ 1)	62.50%	78.72%	77.22%	2.9375	0.4764
(≤ 2)	54.17%	90.21%	86.87%	5.5344	0.5081
(≤ 3)	33.33%	94.04%	88.42%	5.5952	0.7089
(≤ 4)	20.83%	99.15%	91.89%	24.4791	0.7985
(> 4)	0.00%	100.00%	90.73%		1

Frisch A et al. Prehosp Emerg Care 2013

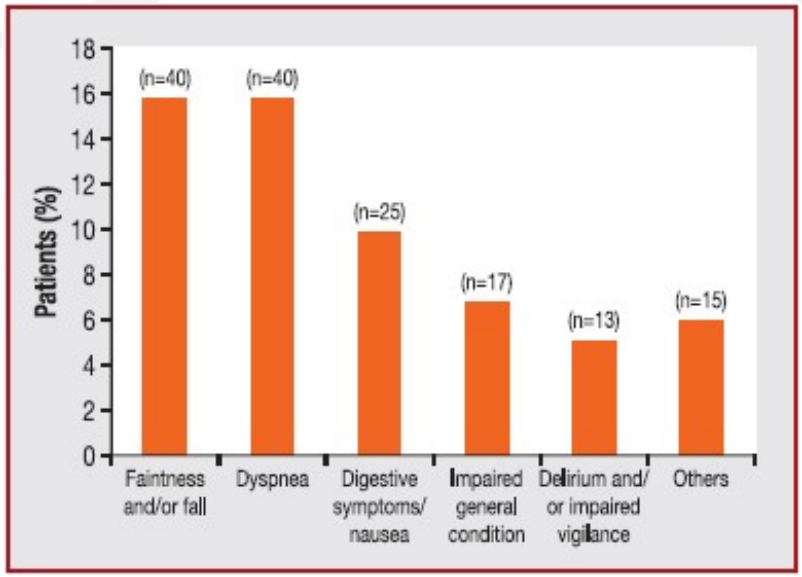
TOP TEN OF CHIEF COMPLAINTS

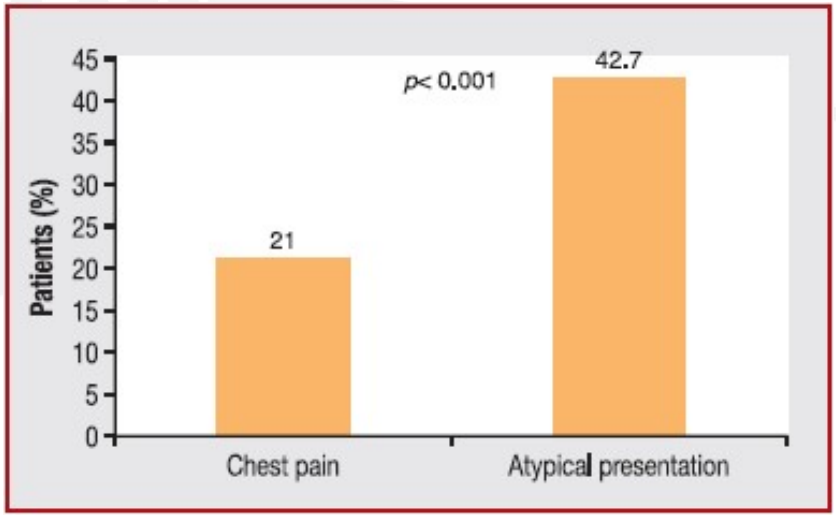
Trauma Enclosed		Trauma Excluded	
Young adults	**Elderly**	**Young adults**	**Elderly**
Lower limbs trauma 589 (13.3)	Dyspnea 134 (9.6)	Abdominal pain 296 (6.7)	Dyspnea 134 (9.6)
Upper limbs trauma 405 (9.1)	Lower limbs trauma 127 (9.1)	Fever 202 (4.6)	Abdominal pain 125 (9)
Abdominal pain 296 (6.7)	Abdominal pain 125 (9)	Lower limbs pain 135 (3)	Chest pain 64 (4.6)
Column trauma 261 (5.9)	Chest pain 64 (4.6)	Chest pain 135 (3)	Palpitations 62 (4.5)
Fever 202 (4.6)	Palpitations 62 (4.5)	Skin problems 129 (2.9)	Lower limbs pain 55 (4)
Lower limbs pain 135 (3)	Upper limbs trauma 56 (4)	Foreign body (eye) 127 (2.9)	Weakness 50 (3.6)
Chest pain 135 (3)	Lower limbs pain 55 (4)	Headache 113 (2.5)	Syncope 40 (2.9)
Skin problems 129 (2.9)	Weakness 50 (3.6)	Eye pain 96 (2.2)	Fever 31 (2.2)
Foreign body (eye) 127 (2.9)	Syncope 40 (2.9)	Back pain 92 (2.1)	Headache 31 (2.2)
Headache 113 (2.5)	Column trauma 35 (2.5)	Dyspnea 87 (2)	Paresthesias 27 (1.9)

Salvi F et al. Aging Clin Exp Res 2013

ATYPICAL PRESENTATIONS

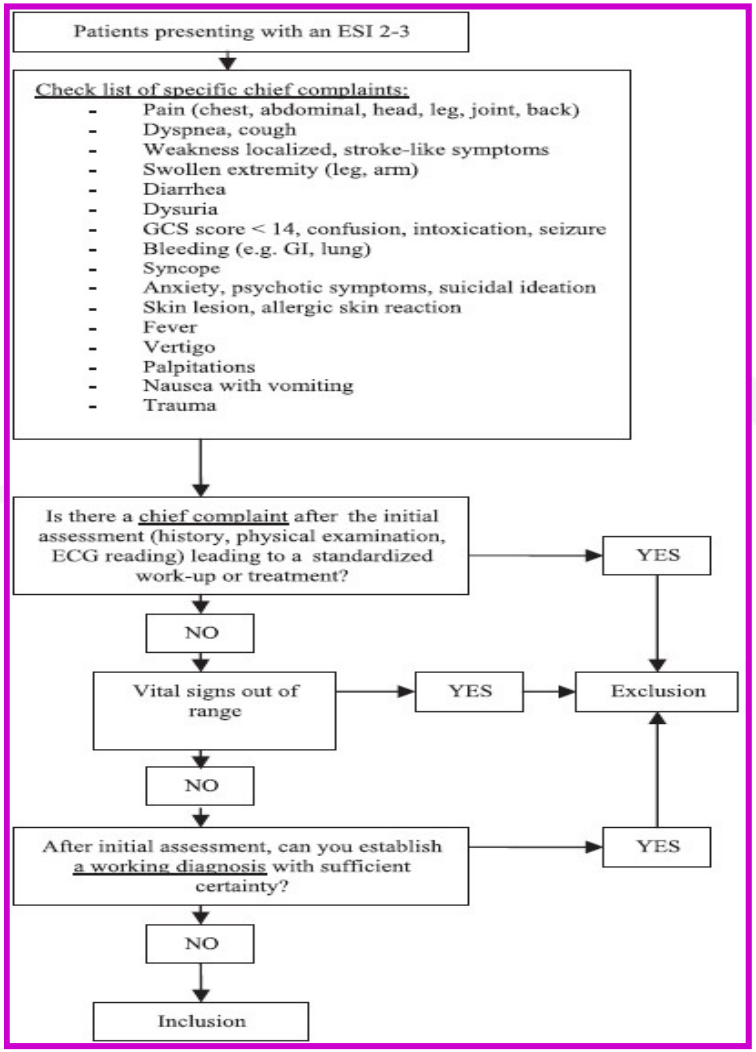
- Solo il 40% degli anziani segue la regola “1 sintomo = 1 malattia”
  - IMA senza dolore toracico
  - FA come sintomo di crisi tireotossica; iposodiemia/ipotiroidismo
  - Astenia (deficit funzionale acuto) quale sintomo principale di scompenso cardiaco, infezione (polmonite; sepsi)
  - Sincope quale presentazione di embolia polmonare

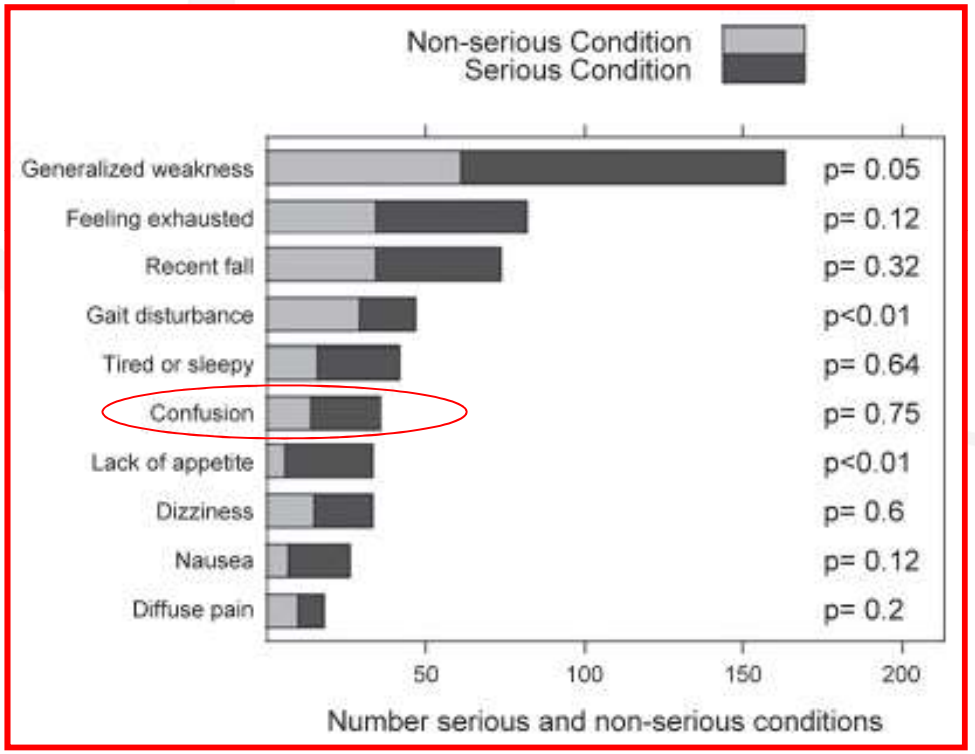




Grossmaitre P et al. Arch Cardiovasc Dis 2013

Patients Presenting to the Emergency Department With Non-specific Complaints: The Basel Non-specific Complaints (BANC) Study





Nemec M et al. Acad Emerg Med 2010

TOP TEN OF ED DIAGNOSES

TRAUMI

Younger adults	Older adults
Contusion 569 (33.5)	Contusion 95 (26.8)
Wound 325 (19.1)	Wound 78 (22.0)
Distractive trauma 206 (12.1)	Hip fracture 29 (8.2)
Sprain 151 (8.9)	Distractive trauma 23 (6.5)
Head trauma 88 (5.2)	Head trauma 19 (5.4)
Forearm fracture 53 (3.1)	Sprain 13 (3.7)
Hand fracture 53 (3.1)	Forearm fracture 12 (3.4)
Eye trauma 29 (1.7)	Vertebral/sacrum fracture 9 (2.5)
Finger fracture 28 (1.6)	Foot fracture 9 (2.5)
Foot fracture 26 (1.5)	Rib fracture 8 (2.3)

NON TRAUMI

Younger adults	Older adults
Fever 180 (6.7)	Atypical chest pain 46 (4.5)
Atypical chest pain 107 (4.0)	Atrial fibrillation 31 (3.0)
Skin problem (undefined) 96 (3.6)	Dyspnea 31 (3.0)
Gynecological problem 91 (3.4)	Fever 31 (3.0)
Foreign body (eye) 86 (3.2)	Heart failure 30 (2.9)
Abdominal colic 86 (3.2)	Pneumonia 29 (2.8)
Abdominal pain 79 (2.9)	Stroke 26 (2.5)
Headache 72 (2.7)	Kidney stone 25 (2.4)
Red eye 70 (2.6)	Back pain 23 (2.2)
Kidney stone 65 (2.4)	Epigastric pain 23 (2.2)
Red or painful ear 58 (2.3)	Dehydration 23 (2.2)

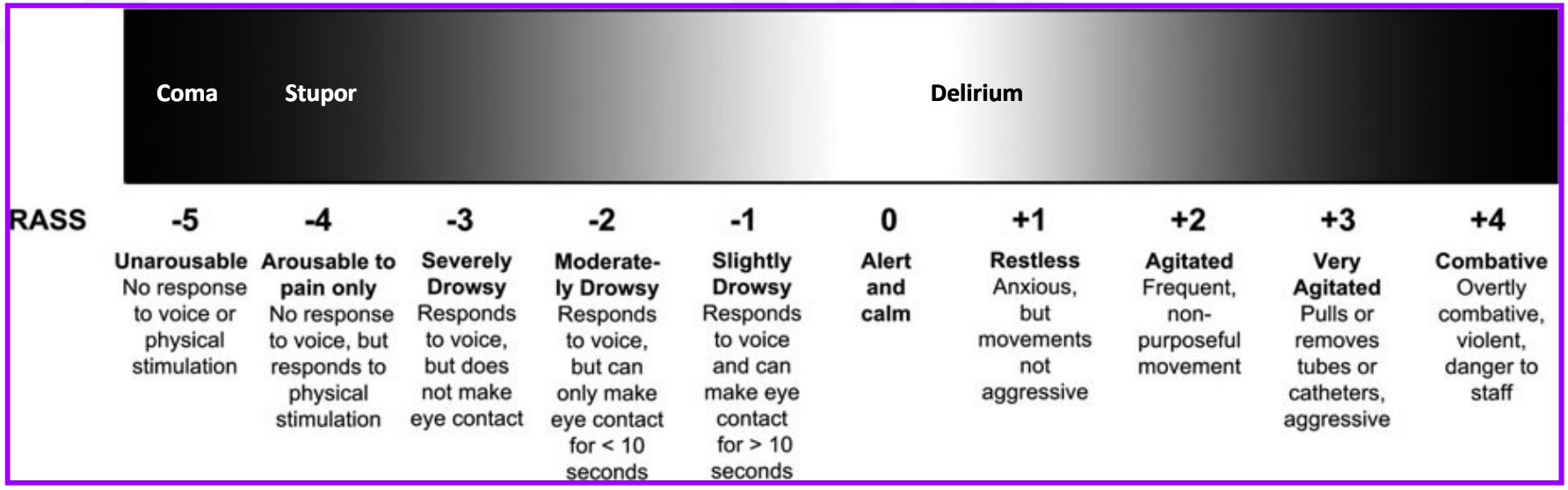
Salvi F et al. Aging Clin Exp Res 2013

OUTLINE

- Cosa
- Chi
- Come
- **Quando**
  - diagnosticare/screenare il delirium
  - il delirium insorge in PS?
- Perché
- Take-home Messages

DELIRIUM INCIDENTE

- Stazionamento prolungato **(>10h OR 2.23; 95% CI 1.13-4.41)**
- Ambiente rumoroso e poco confortevole
- Illuminazione artificiale
- Restraints
- Dolore/malattie acute-gravi in corso

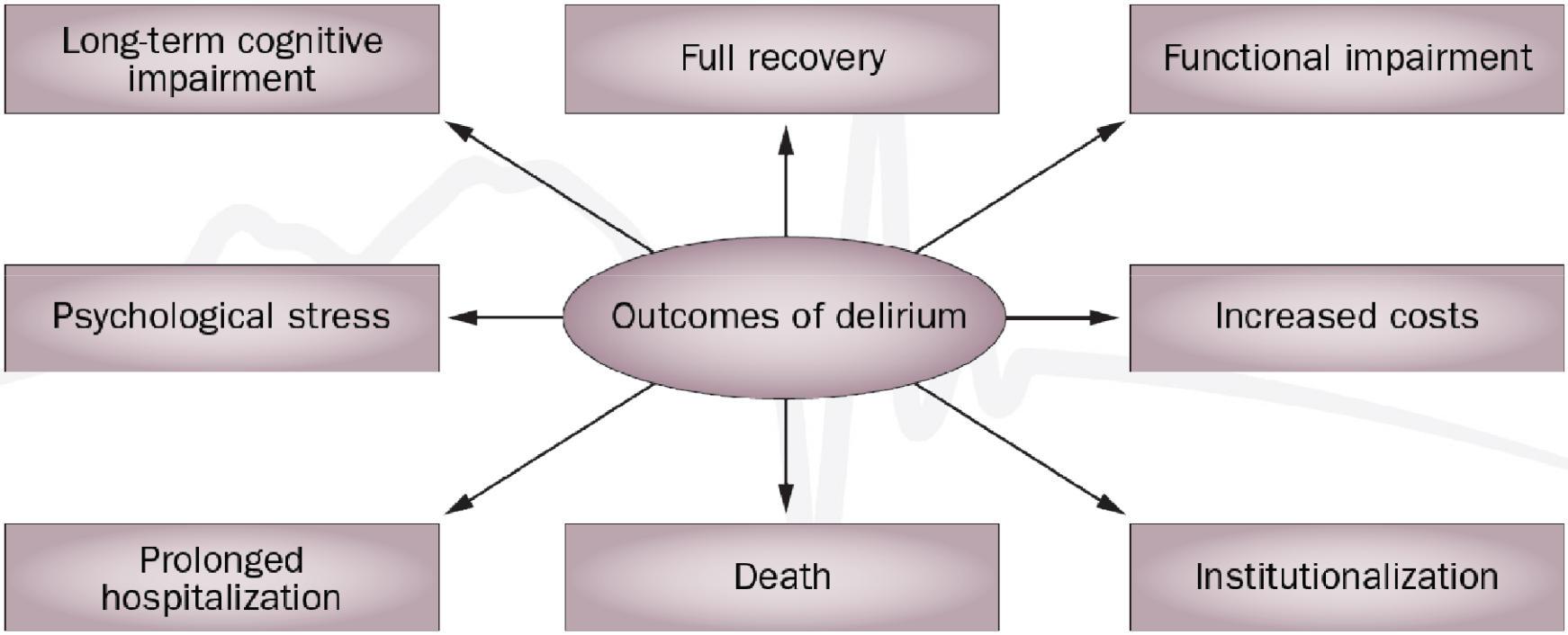


Bo M et al. J Am Geriatr Soc 2016

OUTLINE

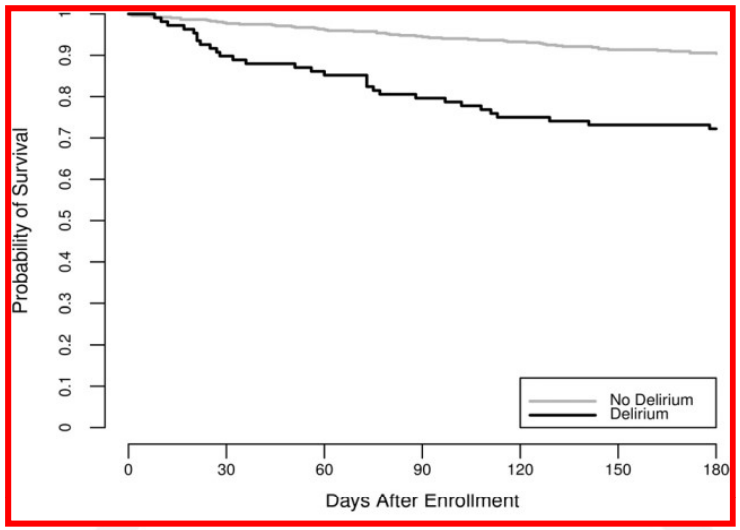
- Cosa
- Chi
- Come
- Quando
- Perché
- Take-home Messages

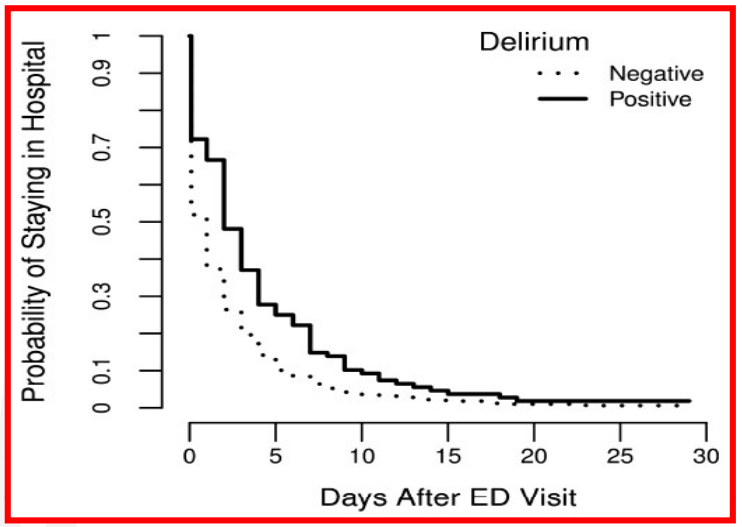
DELIRIUM: OUTCOMES

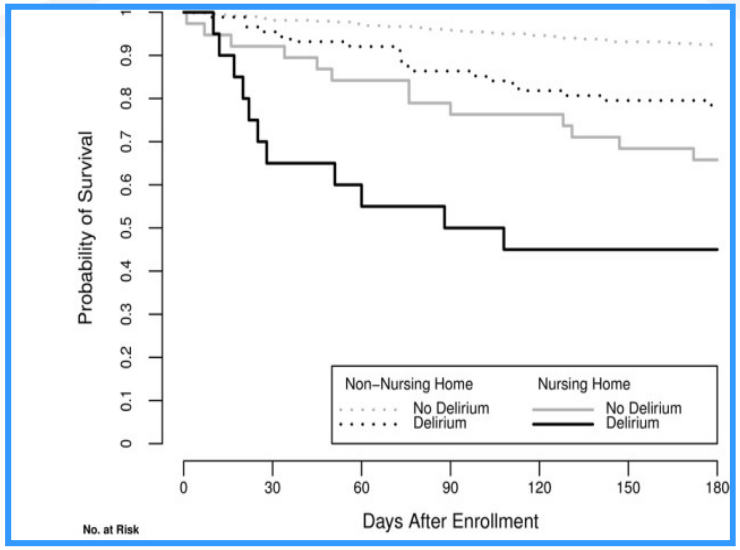


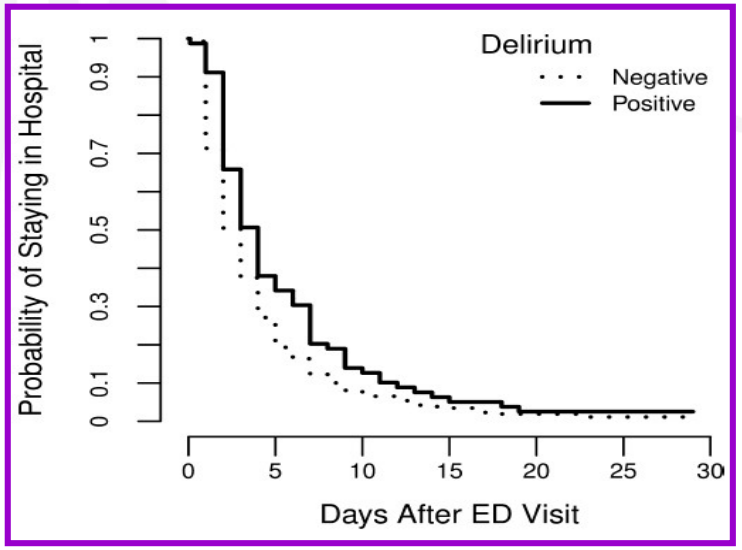
Fong TA et al. Nat Rev Neurol 2009

DELIRIUM IN PS: DEATH & LOS









Han JH et al. Ann Emerg Med 2010
Han JH et al. Acad Emerg Med 2011

The Effect of Cognitive Impairment on the Accuracy of the Presenting Complaint and Discharge Instruction Comprehension in Older Emergency Department Patients

Table 3. Proportional odds logistic regression model for the analysis of the accuracy of the patient's presenting complaint.*

Variables	Proportional Odds Ratio (95% CI)
Cognitive impairment	
No cognitive impairment	Reference
Delirium only	0.42 (0.19–0.93)
Dementia only	1.40 (0.72–2.70)
Delirium superimposed on dementia	0.20 (0.09–0.43)
Age	0.95 (0.92–0.99)
Health literacy	0.93 (0.81–1.08)
Education	0.81 (0.61–1.08)
Nonwhite race	0.75 (0.38–1.50)
Hearing impairment	1.13 (0.66–1.92)

Table 6. Multivariable proportional logistic regression models to determine whether cognitive impairment is associated with decreased comprehension of ED discharge instructions, adjusted for health literacy, education, nonwhite race, and hearing impairment.*

Variables	Proportional Odds Ratio (95% CI)
Discharge diagnosis	
Cognitive impairment	
No cognitive impairment	Reference
Delirium only	0.94 (0.27–3.28)
Dementia only	0.72 (0.33–1.60)
Delirium superimposed on dementia	0.13 (0.04–0.47)
Age	1.00 (0.95–1.05)
Health literacy	0.95 (0.79–1.13)
Education	1.20 (0.84–1.73)
Nonwhite race	0.37 (0.17–0.83)
Hearing impairment	1.15 (0.55–2.40)
Return to the ED instructions	
Cognitive impairment	
No cognitive impairment	Reference
Delirium only	0.39 (0.10–1.57)
Dementia only	0.58 (0.26–1.32)
Delirium superimposed on dementia	0.18 (0.04–0.82)
Age	0.94 (0.89–0.99)
Health literacy	1.01 (0.84–1.22)
Education	1.34 (0.91–1.98)
Nonwhite race	0.65 (0.27–1.57)
Hearing impairment	2.03 (0.91–4.51)
Follow-up instructions	
Cognitive impairment	
No cognitive impairment	Reference
Delirium only	2.23 (0.65–7.64)
Dementia only	0.56 (0.26–1.21)
Delirium superimposed on dementia	0.09 (0.02–0.35)
Age	1.02 (0.98–1.08)
Health literacy	0.74 (0.62–0.89)
Education	0.89 (0.63–1.27)
Nonwhite race	0.50 (0.23–1.10)
Hearing impairment	1.00 (0.49–2.06)

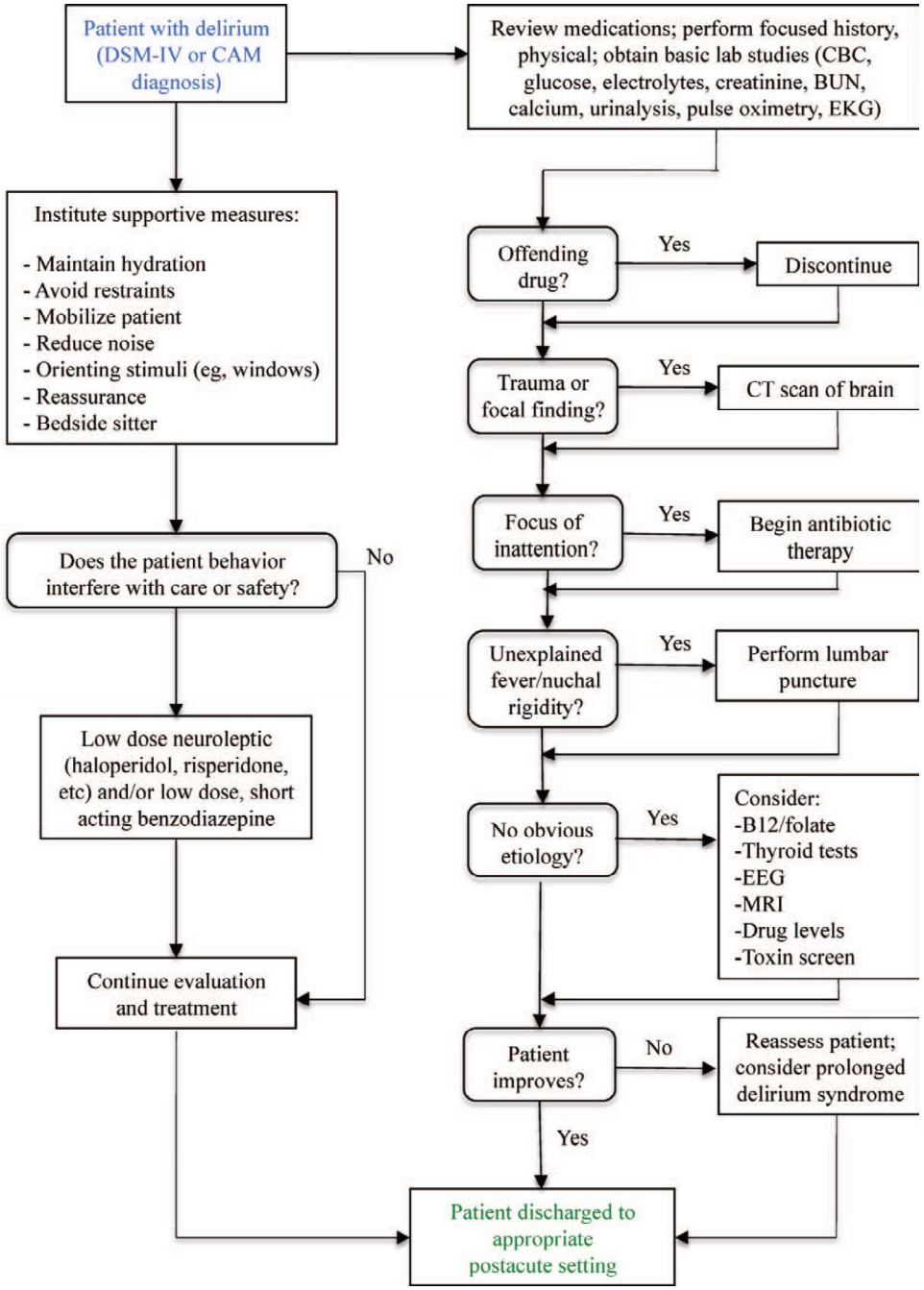
Han JH et al. Ann Emerg Med 2011

OUTLINE

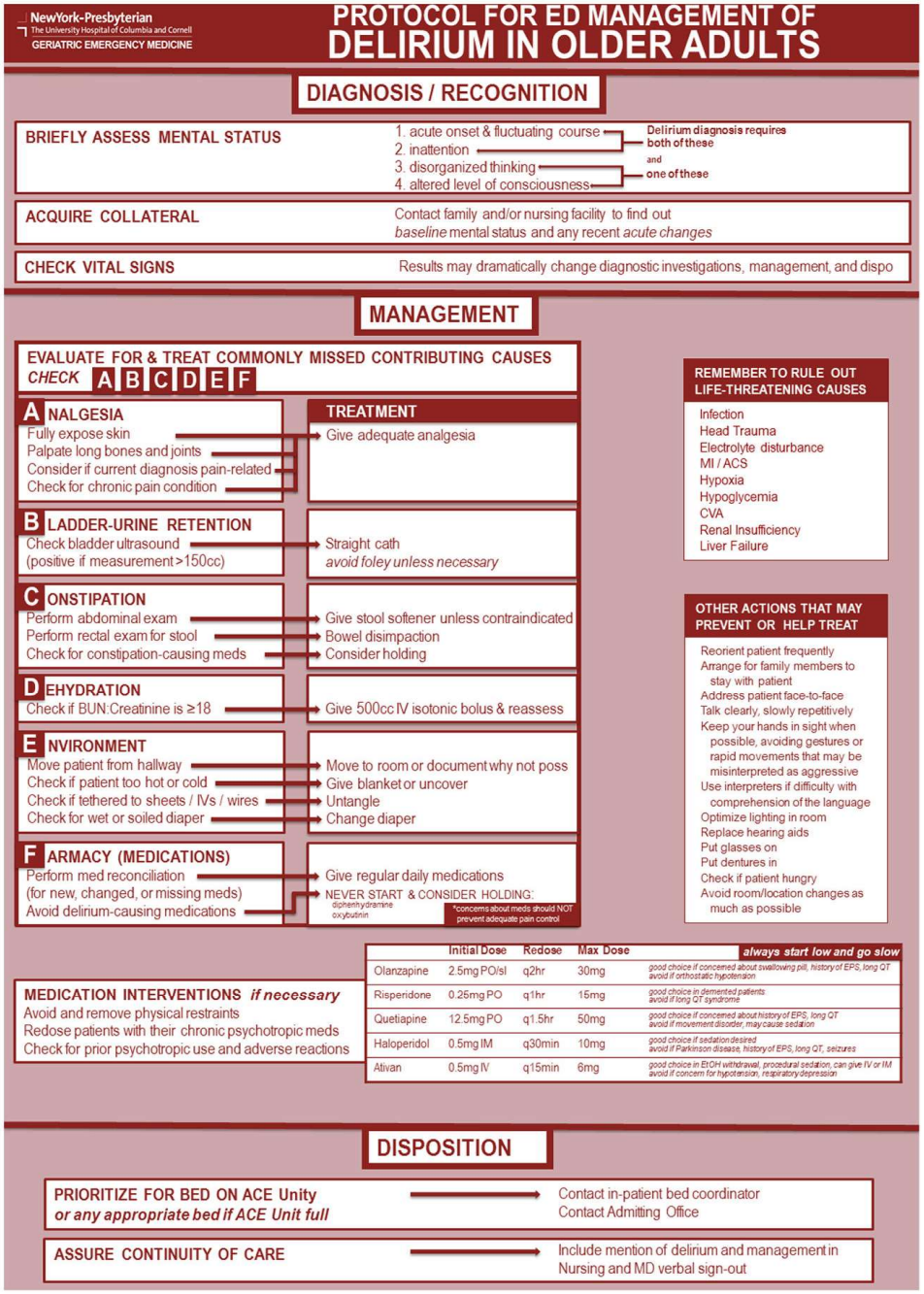
- Cosa
- Chi
- Come
- Quando
- Perché
- Take-home message?

DELIRIUM: A GERIATRIC APPROACH

- Medical history (**recent therapy modification**) and physical exam (search for **acute urinary retention** → BladderScan and/or **fecal impaction** → digital rectal exploration); search for **pain** (non-verbal communication; analgesia ex-adiuvantibus)
- EKG (blood gas if oxygen saturation is <92%)
- Urinary stick and glucometer test
- Labs (Hb-WBC, glycemia, urea & creatinine → BUN/creatinine ratio, electrolytes, AST/ALT, albumin, but including cardiac enzymes, BNP, PCR and, when indicated, FDP and/or TSH reflex)
- Rx (chest and/or abdomen) if indicated
- Brain CT-scan only in the presence of focal neurological signs, head trauma, a fall or in the event that another cause has not been found



Gower LEJ et al. West J Emerg Med 2012



Rosen T et al. Adv Emerg Nurs J 2015

The Elder-Friendly Emergency Department Assessment Tool: Development of a Quality Assessment Tool for Emergency Department–Based Geriatric Care

Education of ED staff in elder-friendly ED care
Educational initiatives exist for nursing and allied health professionals
Educational initiatives exist for ED physicians
Elder-Friendly physical environment and design principles
Prepared environment (e.g., clutter-free environment, noise-reduction methods, appropriate lighting and signage)
Adaptive furniture that promotes function and safety (e.g., low stretchers, thick mattresses, upright and reclining chairs)
Access to adaptive equipment (e.g., walkers, canes, hearing amplifiers)
Presence of staff with geriatrics expertise
Designated clinical coordinator or team leader for ED-based geriatric care on site
Advanced practice nurse or nurse clinician providing geriatrics assessment and management support on site
Social worker on site
Physiotherapist or occupational therapist available
Pharmacist available
Geriatrics consultation service available
Presence of geriatric screening and assessment protocols for vulnerable elderly adults using validated tools
High-risk screening tools to identify vulnerable elderly adults
Cognitive, functional, and mobility assessments
Medication review and reconciliation
Standardized protocols for identification, prevention, and management of delirium, falls, functional decline, dehydration, incontinence, and pain
Discharge planning of vulnerable elderly adults from ED to community
Nurse or nurse clinician for supportive discharge planning
Medication reconciliation at discharge
Transfer of clinical information to primary care physician
Transfer of clinical information to home care services
Key information given in writing/explained to older patients and caregivers at discharge
Linkages between ED and relevant community care and services to ensure service delivery occurs after discharge to community and appropriate information exchange occurs
Primary care physicians
Home care services
Rehabilitation and convalescence services
Geriatric outpatient clinic or day hospital services
Evaluation and monitoring of ED-based geriatric care processes
Hospital admission rate
ED and hospital lengths of stay
ED repeat visits and subsequent hospital admission rate
Patient, caregiver, and provider satisfaction with service

McCusker J et al. J Am Geriatr Soc 2012

THE GERIATRIC ED

SUONI E LUCI (sleep protocol)

- Ambiente sereno
- Luci soffuse
- Musica

I PARENTI..

- Perché non un parente sempre vicino al paziente??
- Evitare "ricambi" troppo frequenti di visitatori

SPAZI

- Fornire informazioni ed illustrare l'ambiente
- Uso di calendari ed orologi
- Evitare cambiamenti di stanza e spazi, soprattutto di notte
- Creare un ambiente libero da rischi
- Ridurre, quando possibile, i sistemi di contenzione

Optimal Older Adult Emergency Care: Introducing Multidisciplinary Geriatric Emergency Department Guidelines From the American College of Emergency Physicians, American Geriatrics Society, Emergency Nurses Association, and Society for Academic Emergency Medicine

Christopher R. Carpenter, MD, MSc*; Marilyn Bromley, RN; Jeffrey M. Caterino, MD, MPH; Audrey Chun, MD; Lowell W. Gerson, PhD; Jason Greenspan, MD; Ula Hwang, MD; David P. John, MD; William L. Lyons, MD; Timothy F. Platts-Mills, MD, MSc; Betty Mortensen, RN; Luna Ragsdale, MD, MPH; Mark Rosenberg, DO, MBA; Scott T. Wilber, MD, MPH; for the ACEP Geriatric Emergency Medicine Section, American Geriatrics Society, Emergency Nurses Association, and SAEM Academy of Geriatric Emergency Medicine

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0196-0644/$-see front matter

http://dx.doi.org/10.1016/j.annemergmed.2014.03.002

Ann Emerg Med 2014; May

EDUCATION

- Atypical presentations of disease
- Trauma, including falls and hip fracture
- Cognitive and behavioral disorders
- Modifications for older patients of emergent interventions
- Medication management
- Transitions of care and referrals to services
- Pain management and palliative care
- Effect of comorbid conditions
- Functional impairments and disorders
- Management of the group pf diseases peculiar to the geriatric adult, including conditions causing abdominal pain
- Weakness and dizziness
- Iatrogenic injuries
- Elder abuse and neglect

Geriatric Emergency Department Guidelines

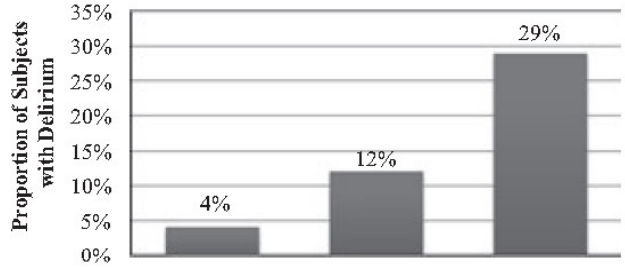
PROTOCOLLI

- Triage and initial evaluation
  - Family/care provider presence/participation in the triage process is highly encouraged
- Initial screening tool to recognize and evaluate at-risk seniors * **(ISAR)**
- Patient safety
- Suspected elder/dependent adult abuse and neglect
- Sedation/analgesia in the geriatric patient
- Assessment and evaluation of delirium/agitation *
  - Restraint policies
- DNR/POLST/palliative care
- Patient Death
  - Inclusion of the grieving family in the "code" situation is encouraged
- Urinary catheter placement guidelines *
- Fall risk assessment and clinical guideline for the evaluation of the "geriatric adult fall" *
- Wound assessment and care
- Transition of Care and Follow-up
- Medication reconciliation and pharmacy review *

Geriatric Emergency Department Guidelines

Delirium Risk Prediction, Healthcare Use and Mortality of Elderly Adults in the Emergency Department

Covariate Entered in Model	Odds Ratio (95% CI)	Points Assigned for Risk Prediction Rule
Age[a]		
65–69	1.6 (1.1–2.3)	0
70–79		1
80–89		2
≥90		3
History of dementia	4.3 (2.2–8.5)	3
History of transient ischemic attack or ischemic stroke	3.3 (1.7–6.2)	2
Respiratory rate >20 beats per minute	2.8 (1.2–6.1)	2
Suspected infection[b]	3.2 (1.7–6.0)	2
ED diagnosis of intracranial hemorrhage	8.4 (1.8–40)	5



Delirium Risk Group (Score)	Low Risk (≤2 point)	Moderate Risk (3-4 points)	High Risk (≥5 points)
Subjects with Delirium, n (%)	15 (4%)	18 (12%)	30 (29%)
Total Subjects, n (%)	416 (62%)	156 (23%)	104 (15%)

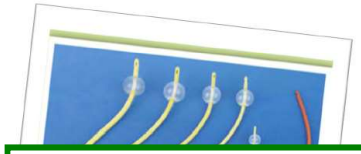
Kennedy M et al. J Am Geriatr Soc 2014

Soddisfare i bisogni assistenziali..

Idratare, accompagnare in bagno, alimentare..

Mancato soddisfacim
accentuazione dei sinto
comportament

Sono sempre necessari?



Comunicare..

- Eloquio semplice, scandito bene
- Alzando il tono se c'è ipoacusia
- Attendere con pazienza la risposta
- Dire ciò che si vuole sia fatto
- Usare il non verbale

Registered Nurses Association of Ontario (RNAO). Screening for delirium,dementia and depression in older adults. Toronto (ON): Registered Nurses Association of Ontario (RNAO); 2003

POSSIAMO ANCHE DARE FARMACI

Table 6
Medication, preferred dosing regimen, and special considerations

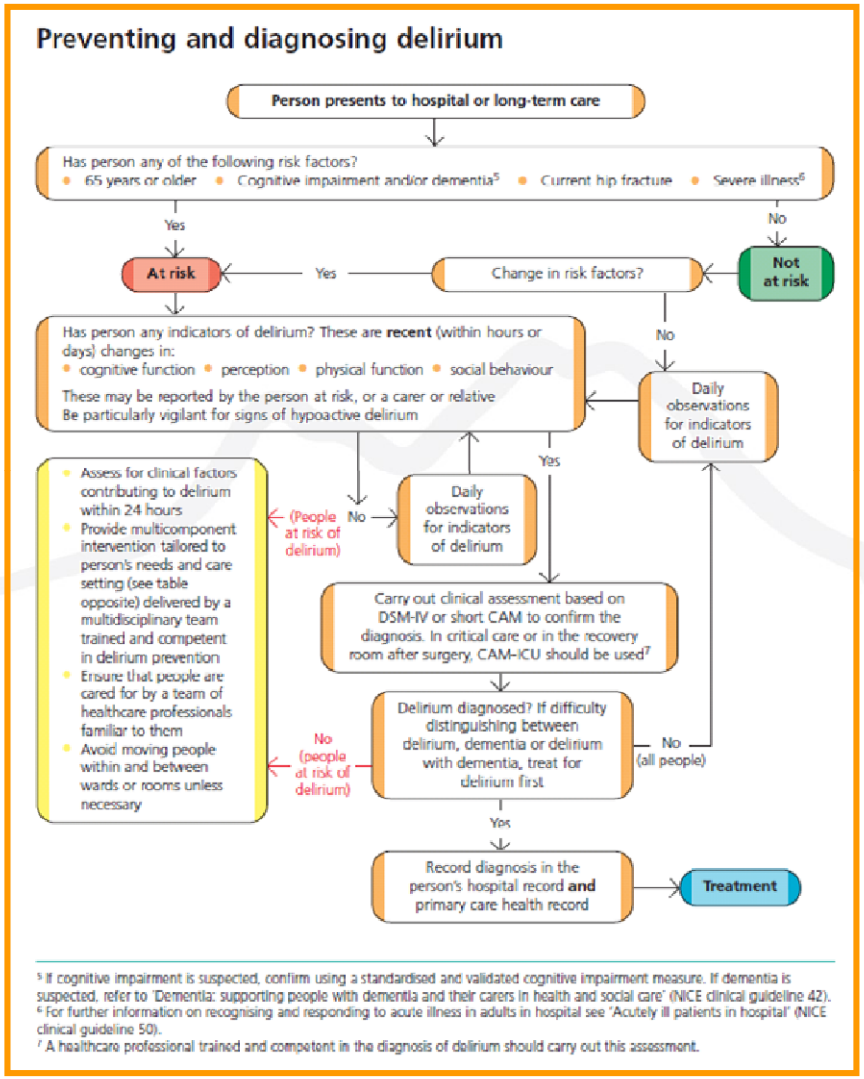
Haloperidol	0.5–1 mg IM/IV every 30–60 min as needed; 0.5–1 mg orally twice daily and every 4 h as needed	Preferred agent
Olanzapine	2.5–5 mg orally once per day	—
Risperidone	0.5 mg orally twice daily	—
Quetiapine	12.5–25 mg orally twice daily	Parkinson disease and hypoactive delirium
Ziprasidone	2 mg–5 mg IM	—

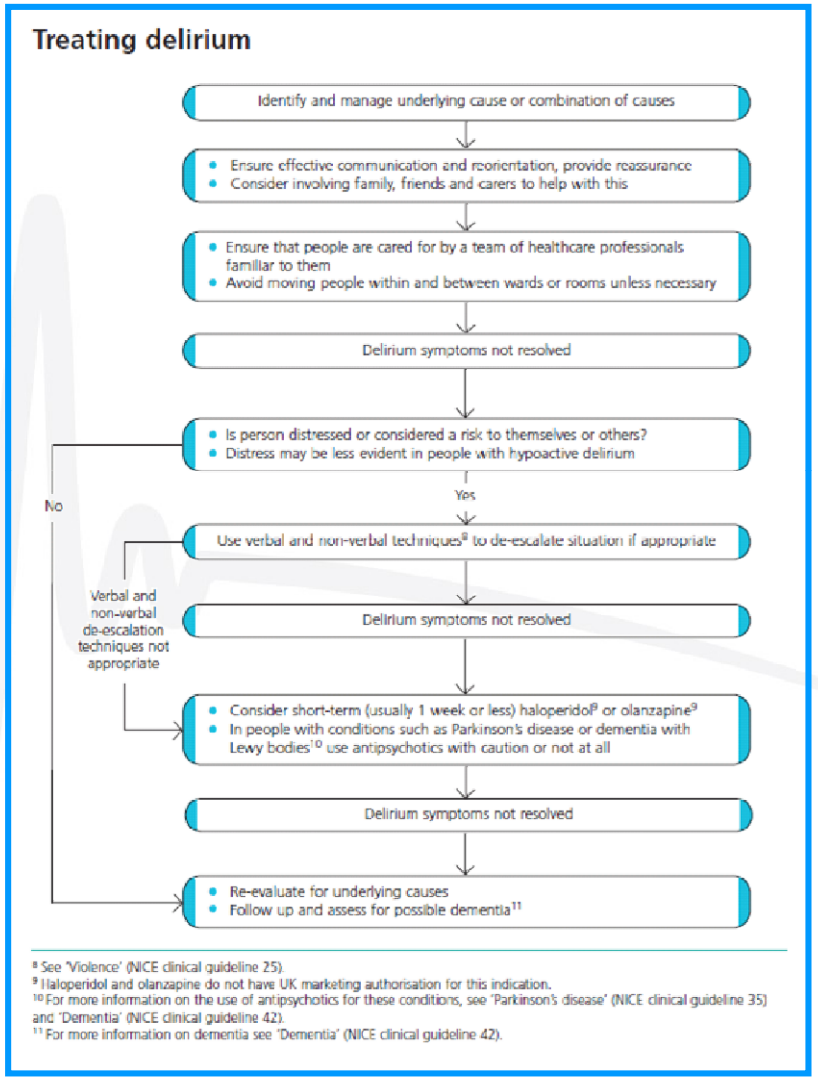
Wilber ST, Ondrejka JE. Emerg Med Clin N Am 2016

OUTLINE

- Cosa
- Chi
- Come
- Quando
- Perché
- Cosa possiamo fare?
- Take-home Messages

"THINK DELIRIUM"





National Clinic Guideline Center. 2010

"THINK DELIRIUM"

Cognitive impairment	• Orientation protocols • Provision of clocks and calendars
Functional impairment	• Early mobilization, including getting patient out of bed regularly and as tolerated starting on postoperative day 1 • Daily physiotherapy with occupational therapy as needed
Fluid and electrolyte imbalances	• Restoration of serum sodium, potassium and glucose levels to normal limits • Detection and treatment of dehydration or fluid overload
High-risk medications	• Discontinuation or minimization of use of benzodiazepines, anticholinergics, antihistamines and meperidine • Modification of dosage or discontinuation of drugs to minimize drug interactions and adverse effects
Pain	• Standing orders for acetaminophen use rather than use as needed • Treatment of breakthrough pain starting with low-dose narcotics; avoidance of meperidine
Impaired vision and hearing	• Appropriate use of glasses, hearing aids and adaptive equipment
Malnutrition	• Ensurance of proper use of dentures, proper positioning, assistance with eating if required and use of supplements if required
Iatrogenic complications	• Removal of urinary catheter by postoperative day 2, with screening for urinary retention and incontinence • Implementation of a skin-care program • Bowel regimen to ensure bowel movements by postoperative day 2 then every 48 hours • Chest physiotherapy and supplemental oxygen if indicated • Appropriate anticoagulation therapy • Screening and treatment of urinary tract infection
Sleep deprivation	• Unit-wide strategies to reduce noise • Scheduling of medications and procedures to allow for proper sleep • Use of nonpharmacologic measures to promote sleep

Holroyd-Leduc JM et al. CMAJ 2010

Grazie.

Fabio Salvi

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