SALA POLISSENA A

FRAGILITA' E CRONICITA'

Moderatori: **Luciano D'Angelo – Vincenzo Menditto**

Gabriele Savioli

Gestione del delirium

XII congresso nazionale
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Fragilità e Cronicità
Gestione del delirium

Gabriele Savioli

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Fragilità e Cronicità
Delirium in ED

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PREMESSA

I pazienti più anziani che si presentano al pronto soccorso hanno frequentemente **alterazioni acute o croniche** del loro **stato mentale**, compreso il loro livello di coscienza e cognizione. **Riconoscere** i cambiamenti cognitivi sia acuti che cronici è importante per i medici di emergenza.

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PREMESSA

Il delirio è un cambiamento acuto nell'attenzione, nella consapevolezza e nella cognizione.

PREMESSA

Numerose **condizioni pericolose** per la vita possono causare delirio; pertanto, il **riconoscimento e il trattamento tempestivi** sono fondamentali.

PREMESSA

Occorre avere un **approccio organizzato** che porti a una **diagnosi tempestiva** entro i limiti di **tempo** del pronto soccorso.

PREMESSA

La maggior parte degli studi che valutano i fattori di rischio per il delirio sono stati condotti in altri contesti rispetto agli ED, come l'unità di terapia intensiva (ICU) o i reparti ospedalieri.

DEFINIZIONI

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Definizioni

Il delirio è uno stato confusionale acuto caratterizzato da un declino acuto:

- dell'attenzione,
- della consapevolezza
- della cognizione.

Le fluttuazioni dello stato mentale nel tempo sono caratteristiche e necessarie per la diagnosi.

American Psychiatric Association. *Diagnostic and statistical manual of mental disorders*. 5th edn. Washington, DC: American Psychiatric Association, 2013.
Hosker CMG, Bennett MI. Delirium and agitation at the end of life. *BMJ* 2016;353:i3085.

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Definizioni

Il delirium può essere caratterizzato da sottotipi motori, vale a dire:

- Ipoattivo (il sottotipo prevalente negli anziani 92%),
- iperattivo
- delirio misto

Han JH, Zimmerman EE, Cutler N, *et al*. Delirium in older emergency department patients: recognition, risk factors, and psychomotor subtypes. *Acad Emerg Med* 2009;16:193–200.

Girard TD, Thompson JL, Pandharipande PP, *et al*. Clinical phenotypes of delirium during critical illness and severity of subsequent long-term cognitive impairment: a prospective cohort
study. *Lancet Respir Med* 2018;6:213–22.

Devlin JW, Skrobik Y, Gélinas C, *et al*. Clinical practice guidelines for the prevention and management of pain, Agitation/Sedation, delirium, immobility, and sleep disruption in adult patients in the ICU. *Crit Care Med* 2018;46:e825–73.

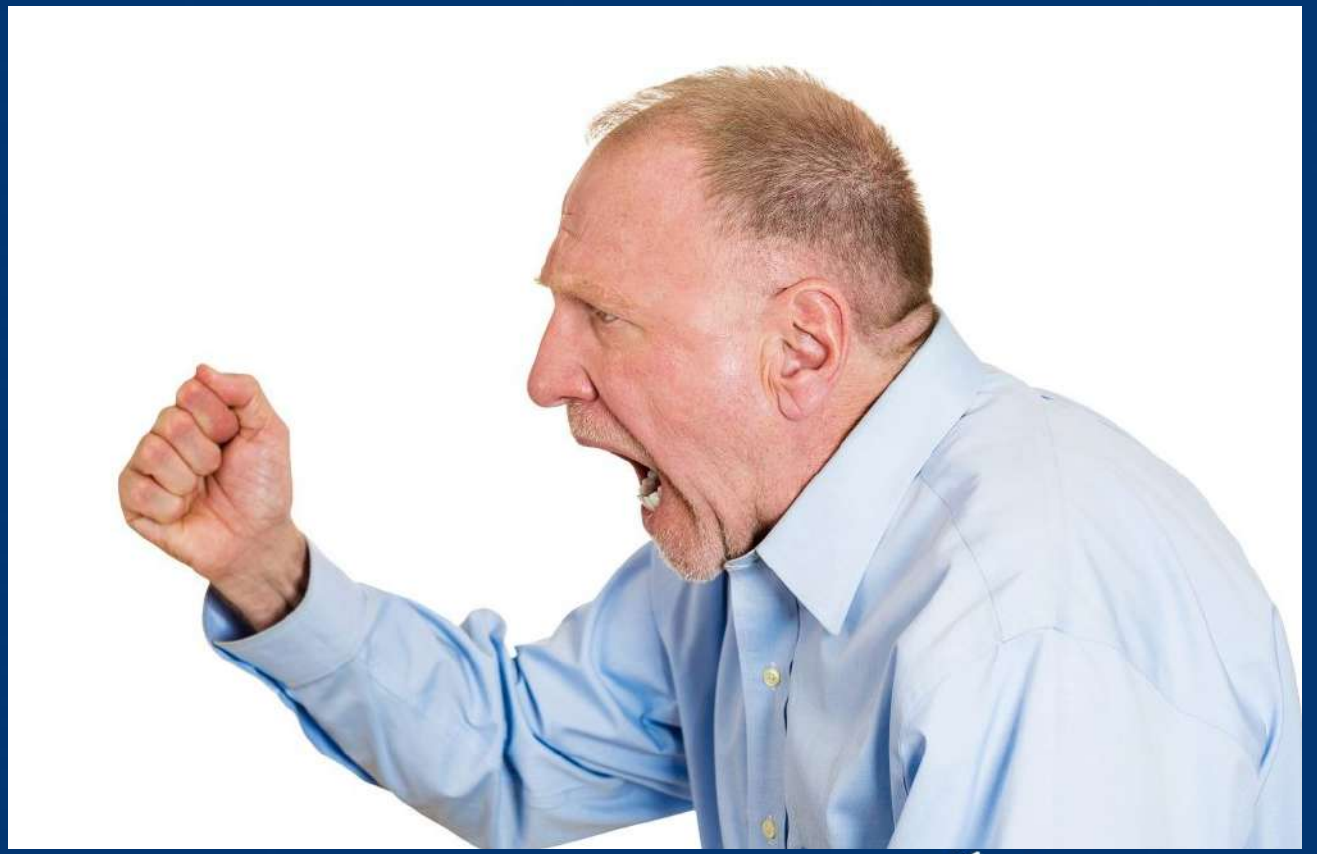
Definizioni

Il delirio **ipoattivo** è descritto come delirio "tranquillo" ed è caratterizzato da diminuzione dell'attività psicomotoria. Questi pazienti possono apparire **depressi, sedati, sonnolenti o anche letargici**.

Jin Ho Han, Delirium in the Older Emergency Department Patient – A Quiet Epidemic. Emerg Med Clin North Am. 2010

Definizioni

i pazienti con delirio **iperattivo** hanno un aumento della attività psicomotoria e appaiono **irrequieti, ansiosi, agitati e persino combattivi**. Pazienti con il delirio di tipo misto mostrano livelli fluttuanti di attività psicomotoria (ipoattivo e iperattivo) per un periodo di tempo.



Jin Ho Han, Delirium in the Older Emergency Department Patient – A Quiet Epidemic. Emerg Med Clin North Am. 2010

Definizioni

Si ipotizza che ogni sottotipo psicomotorio abbia un **meccanismo fisiopatologico** sottostante e un'**eziologia** sottostante **diversi**.

Ad esempio, è più probabile che il delirio causato dall'astinenza da alcol si manifesti come sottotipo iperattivo

Jin Ho Han, Delirium in the Older Emergency Department Patient – A Quiet Epidemic. Emerg Med Clin North Am. 2010
Meagher DJ, Trzepacz PT. Motoric subtypes of delirium. Semin Clin Neuropsychiatry. 2000; 5(2):75–85. [PubMed: 10837096]
Ross CA. CNS arousal systems: possible role in delirium. Int Psychogeriatr. 1991; 3(2):353–371.[PubMed: 1687443]
Ross CA, Peyser CE, Shapiro I, et al. Delirium: phenomenologic and etiologic subtypes. Int Psychogeriatr. 1991; 3(2):135–147. [PubMed: 1811769]
O'Keeffe ST, Lavan JN. Clinical significance of delirium subtypes in older people. Age Ageing 1999; 28(2):115–119. [PubMed: 10350406]
Kiely DK, Jones RN, Bergmann MA, et al. Association between psychomotor activity delirium subtypes and mortality among newly admitted post-acute facility patients.
J Gerontol A Biol SciMed Sci. 2007; 62(2):174–179. [PubMed: 17339642]

Definizioni

il delirio ipoattivo spesso **non viene rilevato** a causa della sua **sottile presentazione** clinica ed è spesso **attribuito** ad **altre eziologie** come la depressione o l'affaticamento.

Jin Ho Han, Delirium in the Older Emergency Department Patient – A Quiet Epidemic. Emerg Med Clin North Am. 2010
Inouye SK, Foreman MD, Mion LC, et al. Nurses' recognition of delirium and its symptoms: comparison of nurse and researcher ratings. Arch Intern Med. 2001; 161(20):2467–2473.[PubMed: 11700159]
Nicholas LM, Lindsey BA. Delirium presenting with symptoms of depression. Psychosomatics. 1995; 36(5):471–479. [PubMed: 7568655]

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Definizioni

Più facilmente viene riconosciuto un delirium iperattivo

Definizioni

Rispetto a un delirium ipoattivo

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Definizioni

Negli ED, Han et al. Hanno osservato che il 96% dei pazienti più anziani con delirio ha mostrato il sottotipo ipoattivo o misto

Han JH, Zimmerman EE, Cutler N, et al. Delirium in older emergency department patients: recognition, risk factors, and psychomotor subtypes. Acad Emerg Med. 2009; 16(3):193–200. [PubMed: 19154565]

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delirio vs demenza

- causano entrambi deterioramento cognitivo
- il delirio si sovrappone alla demenza, (diagnosi mancate)
- la demenza è caratterizzata da un graduale declino cognitivo che si verifica nell'arco di mesi o anni ed è solitamente irreversibile.
- alterazioni di coscienza, la disattenzione, i disturbi percettivi e il pensiero disorganizzato non sono comunemente osservati nei pazienti con demenza.

Fick DM, Agostini JV, Inouye SK. Delirium superimposed on dementia: a systematic review. J Am Geriatr Soc. 2002; 50(10):1723–1732. [PubMed: 12366629]
Fick D, Foreman M. Consequences of not recognizing delirium superimposed on dementia in hospitalized elderly individuals. J Gerontol Nurs. 2000; 26(1):30–40. [PubMed: 10776167]

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delirio vs demenza

Emerg Med Clin North Am. 2010 August ; 28(3): 611–631. doi:10.1016/j.emc.2010.03.005.

Delirium in the Older Emergency Department Patient – A Quiet Epidemic

Jin Ho Han, MD, MSc,

Differences between delirium and dementia.

Characteristic	Delirium	Dementia
Onset	Rapid over a period of hours or days	Gradual over a long period of time
Course	Fluctuating	Stable
Is cognitive decline reversible?	Yes	No
Altered of level of consciousness?	Yes	*No
Inattention present?	Yes	*No
Disorganized thinking present?	Yes	*No
Altered perception present?	Yes	*No

* May be present in patients with severe dementia.

delirio vs demenza

quando caratteristiche cliniche si sovrappongono:

- demenza grave o allo stadio terminale (Quando questi pazienti sviluppano delirio, si osserva un cambiamento acuto dello stato mentale e qualsiasi anomalia preesistente con disattenzione, pensiero disorganizzato o livello di vigilanza può peggiorare.
- Demenza a corpi di Lewy (in questo caso vi sono di solito sintomi motori Parkinsoniani)

Fick DM, Agostini JV, Inouye SK. Delirium superimposed on dementia: a systematic review. J Am Geriatr Soc. 2002; 50(10):1723–1732. [PubMed: 12366629]

35. Fick D, Foreman M. Consequences of not recognizing delirium superimposed on dementia in hospitalized elderly individuals. J Gerontol Nurs. 2000; 26(1):30–40. [PubMed: 10776167]

Marcantonio ER, Simon SE, Bergmann MA, et al. Delirium symptoms in post-acute care: prevalent, persistent, and associated with poor functional recovery. J Am Geriatr Soc. 2003; 51(1): 4–9. [PubMed: 12534838]

Levkoff SE, Evans DA, Liptzin B, et al. Delirium. The occurrence and persistence of symptoms among elderly hospitalized patients. Arch Intern Med. 1992; 152(2):334–340. [PubMed: 1739363]

McKeith IG, Galasko D, Kosaka K, et al. Consensus guidelines for the clinical and pathologic diagnosis of dementia with Lewy bodies (DLB): report of the consortium on DLB international workshop. Neurology. 1996; 47(5):1113–1124. [PubMed: 8909416]

Han JH, Zimmerman EE, Cutler N, et al. Delirium in older emergency department patients: recognition, risk factors, and psychomotor subtypes. Acad Emerg Med. 2009; 16(3):193–200. [PubMed: 19154565]

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EPIDEMIOLOGIA

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Epidemiologia

Il delirium è comune nell'ambiente di terapia intensiva, compreso il pronto soccorso (ED), ed è particolarmente diffuso tra gli adulti di età superiore ai 65 anni, ancora più frequente sopra i 75.

Ben il 7%-17% degli anziani che si presentano in ED soddisfa i criteri diagnostici per il delirio.

Hustey FM, Meldon SW, Smith MD, *et al*. The effect of mental status screening on the care of elderly emergency department patients. *Ann Emerg Med* 2003;41:678–84.

Han JH, Zimmerman EE, Cutler N, *et al*. Delirium in older emergency department patients: recognition, risk factors, and psychomotor subtypes. *Acad Emerg Med* 2009;16:193–200.

Han JH, Shintani A, Eden S, *et al*. Delirium in the emergency department: an independent predictor of death within 6 months. *Ann Emerg Med* 2010;56–244–52.

Lewis LM, Miller DK, Morley JE, *et al*. Unrecognized delirium in ED geriatric patients. *Am J Emerg Med* 1995;13:142–5.

Suffoletto B, Miller T, Frisch A, *et al*. Emergency physician recognition of delirium. *Postgrad Med J* 2013;89:621–5.

Evensen S, Saltvedt I, Ranhoff AH, *et al*. Delirium and cognitive impairment among older patients in Norwegian emergency departments. *Tidsskr Nor Laegeforen* 2019;139

Kennedy M, Enander RA, Tadiri SP, *et al*. Delirium risk prediction, healthcare use and mortality of elderly adults in the emergency department. *J Am Geriatr Soc* 2014;62:462–9.

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Epidemiologia

Il delirium è molto frequente in ospedale: studi recenti dimostrano che all'incirca un paziente su cinque è affetto da delirium tanto nei reparti medici che chirurgici, che nelle terapie intensive

Bellelli G, Morandi A, Di Santo SG, et al. "Delirium Day": a nationwide point prevalence study of delirium in older hospitalized patients using an easy standardized diagnostic tool. BMC medicine. 2016;14: 106.
Inouye SK, Westendorp RG, Saczynski JS. Delirium in elderly people. Lancet. 2014;383: 911-922. 8
Hsieh SJ, Ely EW, Gong MN. Can intensive care unit delirium be

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Epidemiologia

Il delirium è comune e colpisce un paziente ospedaliero su otto, sebbene la prevalenza vari a seconda del tipo di reparto.

Ryan DJ, O'Reagan NA, Caoimh RÓ et al. Delirium in an adult acute hospital population: predictors, prevalence and detection. 2013; 3: e001772. doi: 10.1136/bmjopen-2012-001772.

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Epidemiologia

Tuttavia, il delirio è ampiamente sottostimato dagli operatori sanitari negli ED, poiché non viene diagnosticato in oltre il 65% dei pazienti.

Gli operatori sanitari degli ED mancano la diagnosi di delirio fino all'80% dei casi

Lewis LM, Miller DK, Morley JE, *et al*. Unrecognized delirium in ED geriatric patients. *Am J Emerg Med* 1995;13:142–5.
Han JH, Zimmerman EE, Cutler N, et al. Delirium in older emergency department patients: recognition, risk factors, and psychomotor subtypes. Acad Emerg Med 2009;16(3):193-200.

FATTORI DI RISCHIO

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Fattori di rischio

Il delirium è spesso la **manifestazione iniziale** di una malattia **acuta** sottostante e può essere presente **prima di febbre, tachipnea, tachicardia o ipossia**

Jin Ho Han, Delirium in the Older Emergency Department Patient – A Quiet Epidemic. Emerg Med Clin North Am. 2010

Fattori di rischio: rassegne

Zaal et al -> terapia intensiva (33 studi).

Krewulak et al -> terapia intensiva per adulti. (20 studi)

Oldroyd -> chirurgia vascolare.

Zaal IJ, Devlin JW, Peelen LM, et al. A systematic review of risk factors for delirium in the ICU. Crit Care Med 2015;43:40–7.
Krewulak KD, Stelfox HT, Ely EW, et al. Risk factors and outcomes among delirium subtypes in adult ICUs: a systematic review. J Crit Care 2020;56:257–64.
Oldroyd C, Scholz AFM, Hinchliffe RJ, et al. A systematic eview and meta-analysis of factors for delirium in vascular surgical patients. J Vasc Surg 2017;66:1269–79.

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Fattori di rischio

Fino agli ultimi anni nessuna di queste rassegne sistematiche si è concentrata o ha incluso studi che valutano i pazienti geriatrici in ED. Solo le revisioni narrative hanno valutato i fattori di rischio per il delirio nell'ED, ma non sono riusciti a includere la intera letteratura.

Vasilevskis EE, Han JH, Hughes CG, *et al*. Epidemiology and risk factors for delirium across Hospital settings. *Best Pract Res Clin Anaesthesiol* 2012;26:277–87.

Rosen T, Connors S, Clark S, *et al*. Assessment and management of delirium in older adults in the emergency department: literature review to inform development of a novel clinical protocol. *Adv Emerg Nurs J* 2015;37:183–96.

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Fattori di rischio in ICU

- l'età
- Demenza
- Ipertensione arteriosa
- chirurgia d'urgenza o trauma
- gravità della malattia
- ventilazione meccanica
- metabolica acidosi
- coma

Zaal IJ, Devlin JW, Peelen LM, et al. A systematic review of risk factors for delirium in the ICU. Crit Care Med 2015;43:40–7.
Krewulak KD, Stelfox HT, Ely EW, et al. Risk factors and outcomes among delirium subtypes in adult ICUs: a systematic review. J Crit Care 2020;56:257–64.
Oldroyd C, Scholz AFM, Hinchliffe RJ, et al. A systematic eview and meta-analysis of factors for delirium in vascular surgical patients. J Vasc Surg 2017;66:1269–79.

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Fattori di rischio (in acute hospital medical units)

I fattori di rischio per il delirio includono (in acute hospital medical units):

- Demenza
- gravità della malattia
- disabilità visiva
- cateterizzazione urinaria
- basso livello di albumina
- durata della degenza ospedaliera.

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Ahmed S, Leurent B, Sampson EL. Risk factors for incident delirium among older people in acute hospital medical units: a systematic review and meta-analysis. *Age Ageing* 2014;43:326–33.

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Fattori di rischio

- demenza,
- età avanzata ,
- post-operatorio.
- Numerose comorbilità,

NICE Delirium: prevention, diagnosis and management. Clinical guideline [CG103] July 2010, Last updated: March 2019.
Inouye SK, Viscoli CM, Horwitz RI, et al. A predictive model for delirium in hospitalized elderly medical patients based on admission characteristics. Ann Intern Med. 1993; 119(6):474–481. [PubMed: 8357112]
Inouye SK, Charpentier PA. Precipitating factors for delirium in hospitalized elderly persons. Predictive model and interrelationship with baseline vulnerability. JAMA. 1996; 275(11):852–857. [PubMed: 8596223]
Marcantonio ER, Goldman L, Mangione CM, et al. A clinical prediction rule for delirium after elective noncardiac surgery. JAMA. 1994; 271(2):134–139. [PubMed: 8264068]
Gustafson Y, Berggren D, Brannstrom B, et al. Acute confusional states in elderly patients treated for femoral neck fracture. J Am Geriatr Soc. 1988; 36(6):525–530. [PubMed: 2897391]
Pompei P, Foreman M, Rudberg MA, et al. Delirium in hospitalized older persons: outcomes and predictors. J Am Geriatr Soc. 1994; 42(8):809–815. [PubMed: 8046190]
Voyer P, Cole MG, McCusker J, et al. Prevalence and symptoms of delirium superimposed on dementia. Clin Nurs Res. 2006; 15(1):46–66. [PubMed: 16410622]
Bourdel-Marchasson I, Vincent S, Germain C, et al. Delirium symptoms and low dietary intake in older inpatients are independent predictors of institutionalization: a 1-year prospective populationbased study. J Gerontol A Biol Sci Med Sci. 2004; 59(4):350–354. [PubMed: 15071078]
Jin Ho Han, Delirium in the Older Emergency Department Patient – A Quiet Epidemic. Emerg Med Clin North Am. 2010

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Fattori di rischio

- uso di farmaci psicoattive (narcotici, benzodiazepine..) e farmaci con proprietà anticolinergiche
- storia di abuso di alcol
- malnutrizione.

NICE Delirium: prevention, diagnosis and management. Clinical guideline [CG103] July 2010, Last updated: March 2019.
Inouye SK, Viscoli CM, Horwitz RI, et al. A predictive model for delirium in hospitalized elderly medical patients based on admission characteristics. Ann Intern Med. 1993; 119(6):474–481. [PubMed: 8357112]
Inouye SK, Charpentier PA. Precipitating factors for delirium in hospitalized elderly persons. Predictive model and interrelationship with baseline vulnerability. JAMA. 1996; 275(11):852–857. [PubMed: 8596223]
Marcantonio ER, Goldman L, Mangione CM, et al. A clinical prediction rule for delirium after elective noncardiac surgery. JAMA. 1994; 271(2):134–139. [PubMed: 8264068]
Gustafson Y, Berggren D, Brannstrom B, et al. Acute confusional states in elderly patients treated for femoral neck fracture. J Am Geriatr Soc. 1988; 36(6):525–530. [PubMed: 2897391]
Pompei P, Foreman M, Rudberg MA, et al. Delirium in hospitalized older persons: outcomes and predictors. J Am Geriatr Soc. 1994; 42(8):809–815. [PubMed: 8046190]
Voyer P, Cole MG, McCusker J, et al. Prevalence and symptoms of delirium superimposed on dementia. Clin Nurs Res. 2006; 15(1):46–66. [PubMed: 16410622]
Bourdel-Marchasson I, Vincent S, Germain C, et al. Delirium symptoms and low dietary intake in older inpatients are independent predictors of institutionalization: a 1-year prospective populationbased study. J Gerontol A Biol Sci Med Sci. 2004; 59(4):350–354. [PubMed: 15071078]
Jin Ho Han, Delirium in the Older Emergency Department Patient – A Quiet Epidemic. Emerg Med Clin North Am. 2010

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Delirium e farmaci

Precipitano ed esacerbano il delirio:

- I farmaci con proprietà anticolinergiche (più frequentemente associati al delirio rispetto a qualsiasi altra classe di farmaci)
- benzodiazepine
- narcotici

Farmaci ad alta prevalenza negli anziani

Jin Ho Han, Delirium in the Older Emergency Department Patient – A Quiet Epidemic. Emerg Med Clin North Am. 2010
Elie M, Cole MG, Primeau FJ, et al. Delirium risk factors in elderly hospitalized patients. J Gen Intern Med. 1998; 13(3):204–212. [PubMed: 9541379]
Caeiro L, Ferro JM, Claro MI, et al. Delirium in acute stroke: a preliminary study of the role of anticholinergic medications. Eur J Neurol. 2004; 11(10):699–704. [PubMed: 15469455]
Tune LE, Egeli S. Acetylcholine and delirium. Dement Geriatr Cogn Disord. 1999; 10(5):342–344. [PubMed: 10473936]
Beresin EV. Delirium in the elderly. J Geriatr Psychiatry Neurol. 1988; 1(3):127–143. [PubMed:3075495]

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Fattori di rischio

Life-threatening causes of delirium.

Wernicke's disease

Hypoxia

Hypoglycemia

Hypertensive encephalopathy

Hyperthermia or hypothermia

Intracerebral hemorrhage

Meningitis/encephalitis

Poisoning (whether exogenous or iatrogenic)

Status epilepticus

Caplan, JP.; Cassem, NH.; Murray, GB., et al. Delirium. In: Stern, TA., editor. Massachusetts General Hospital Comprehensive Clinical Psychiatry. Philadelphia, PA: Mosby/Elsevier; 2008. p. xviip. 1273

Fattori di rischio_necessità di conoscere quelli specifici dell' ED

Anche se i fattori di rischio per il delirio potrebbero essere simili, è necessario capire se ci sono differenze importanti nell'ED. L'ED ha un aspetto davvero unico ambiente rispetto ai piani di degenza o ICU.

Murray AM, Levkoff SE, Wetle TT, et al. Acute delirium and functional decline in the hospitalized elderly patient. J Gerontol 1993;48:M181–6.
Inouye SK, Rushing JT, Foreman MD, et al. Does delirium contribute to poor hospital outcomes? A three-site epidemiologic study. J Gen Intern Med 1998;13:234–42.
Buurman BM, Hoogerduijn JG, de Haan RJ, et al. Geriatric conditions in acutely hospitalized older patients: prevalence and one-year survival and functional decline. PLoS One 2011;6:e26951.
González M, Martínez G, Calderón J, et al. Impact of delirium on short-term mortality in elderly inpatients: a prospective cohort study. Psychosomatics 2009;50:234–8.

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Fattori di rischio_necessità di conoscere quelli specifici dell' ED

Questi studi hanno infatti spesso arruolano pazienti fino a **48 ore dopo il ricovero**. Data la sua natura fluttuante, lo stato di delirio di un paziente dopo 48 ore dal ricovero potrebbe essere completamente diverso dallo stato di delirio all'arrivo in ED o per tutta la lunghezza ED di soggiorno, il che spiega principalmente la limitata generalizzabilità di questi studi al paziente in ED.

Murray AM, Levkoff SE, Wetle TT, et al. Acute delirium and functional decline in the hospitalized elderly patient. J Gerontol 1993;48:M181–6.
Inouye SK, Rushing JT, Foreman MD, et al. Does delirium contribute to poor hospital outcomes? A three-site epidemiologic study. J Gen Intern Med 1998;13:234–42.
Buurman BM, Hoogerduijn JG, de Haan RJ, et al. Geriatric conditions in acutely hospitalized older patients: prevalence and one-year survival and functional decline. PLoS One 2011;6:e26951.
González M, Martínez G, Calderón J, et al. Impact of delirium on short-term mortality in elderly inpatients: a prospective cohort study. Psychosomatics 2009;50:234–8.

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Fattori di rischio_necessità di conoscere quelli specifici dell' ED

Oltre a questo in ED si potrebbero avere informazioni limitate sul paziente (p. es., se il paziente non è in grado di fornire un affidabile storia e/o non sono presenti familiari). Dunque, i fattori di rischio identificati in altri contesti possono avere minore rilevanza o non essere applicabili nel contesto dell'ED.

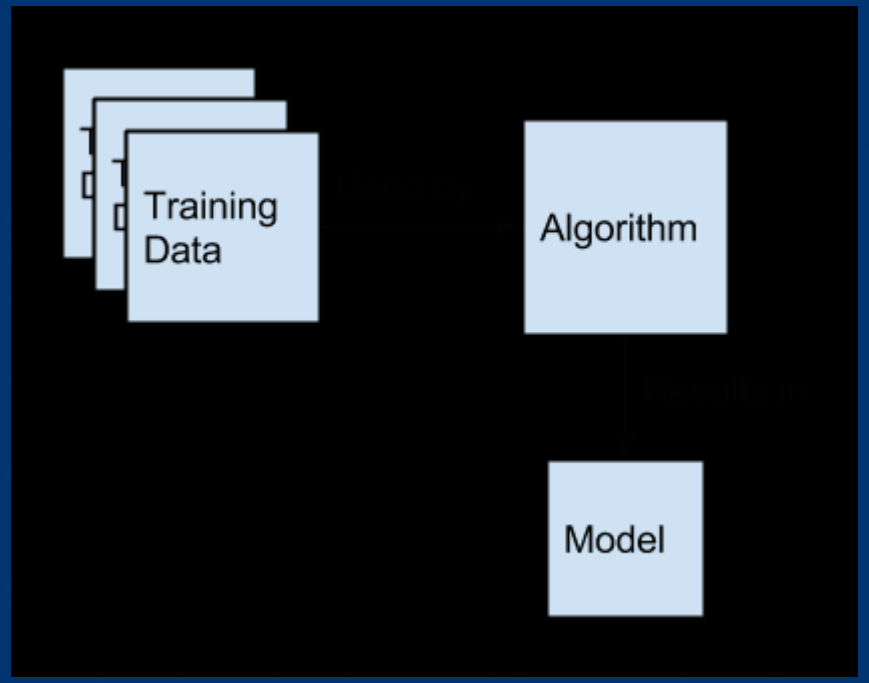
Murray AM, Levkoff SE, Wetle TT, et al. Acute delirium and functional decline in the hospitalized elderly patient. J Gerontol 1993;48:M181–6.

Inouye SK, Rushing JT, Foreman MD, et al. Does delirium contribute to poor hospital outcomes? A three-site epidemiologic study. J Gen Intern Med 1998;13:234–42.

Buurman BM, Hoogerduijn JG, de Haan RJ, et al. Geriatric conditions in acutely hospitalized older patients: prevalence and one-year survival and functional decline. PLoS One 2011;6:e26951.

González M, Martínez G, Calderón J, et al. Impact of delirium on short-term mortality in elderly inpatients: a prospective cohort study. Psychosomatics 2009;50:234–8.

Fattori di rischio_necessità di conoscere quelli specifici dell' ED



Molti **prediction models** del delirium in letteratura, non sono stati costruito o validati per il setting degli ED .

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Lindroth H, Bratzke L, Purvis S, et al. Systematic review of prediction models for delirium in the older adult inpatient. BMJ Open 2018;8:e019223

FATTORI DI RISCHIO in ED

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Gabriele Savioli

BMJ Open

Risk factors for delirium among older adults in the emergency department: a systematic review protocol

Lucas Oliveira J e Silva ,[1] Michelle J Berning,[1,2] Jessica A Stanich,[1] Danielle J Gerberi ,[3] Jin Han,[4,5] Fernanda Bellolio[1,6]

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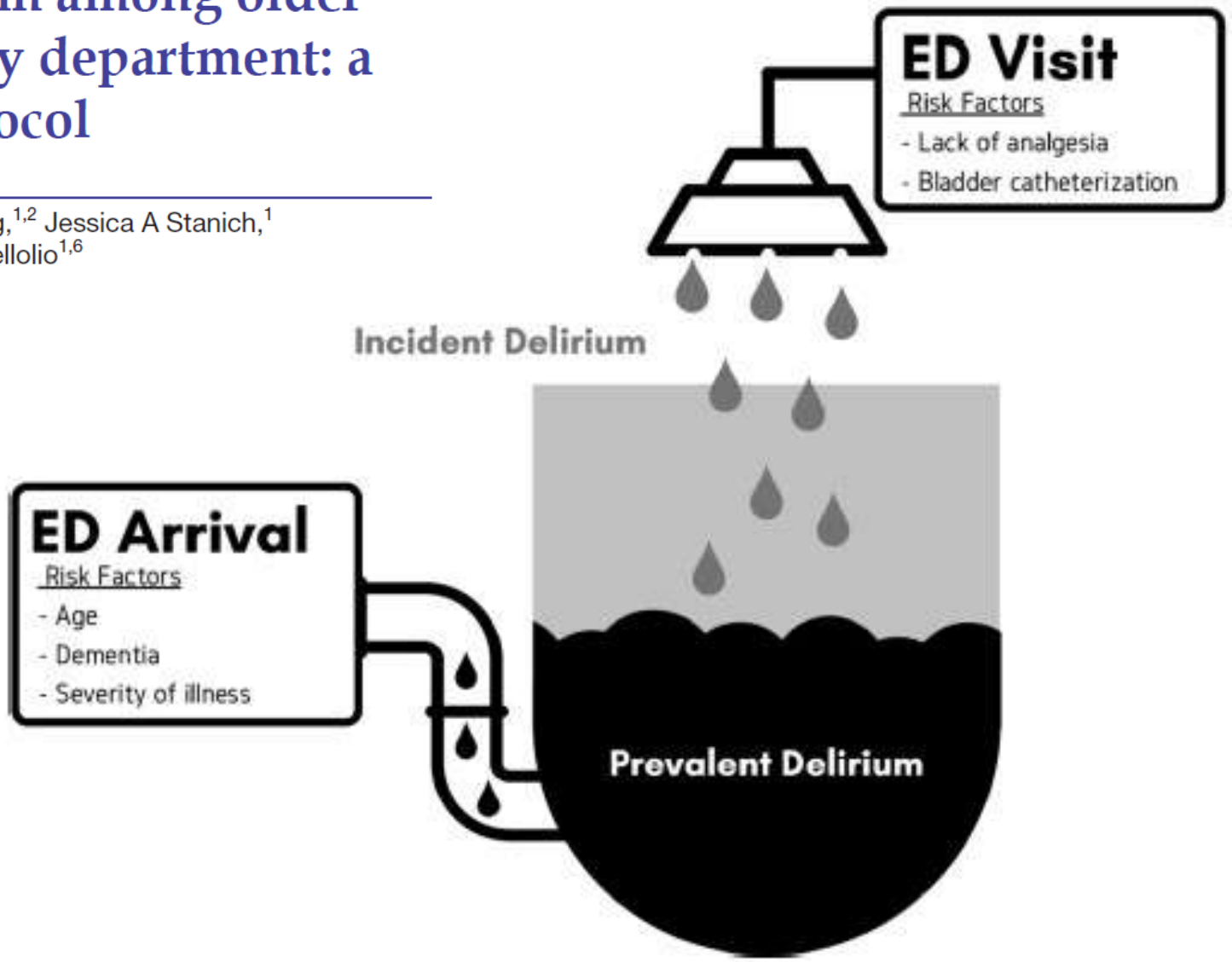

Figure 1 Conceptual model of risk factors and prevalent and incident delirium from the ED perspective. ED, emergency department.

Fattori di rischio in ED

GERIATRIC EMERGENCY MEDICINE

Length of Stay in the Emergency Department and Occurrence of Delirium in Older Medical Patients

Mario Bo, MD, PhD, Martina Bonetto, MD,† Giuliana Bottignole, MD,* Paola Porrino, MD,* Eleonora Coppo, MD,* Michela Tibaldi, MD,* Giacomo Ceci, MD,* Silvio Raspo, MD,† Giorgetta Cappa, MD,† and Giuseppe Bellelli, MD‡*

J Am Geriatr Soc 64:1114–1119, 2016.

Fattori di rischio_in ED

PARTICIPANTS: Individuals aged 75 and older without delirium at ED entry, coma, aphasia, stroke, language barrier, psychiatric disorder, or alcohol abuse (N = 330).

MEASUREMENTS: On ED admission, individuals underwent standardized evaluation of comorbidity (Cumulative Illness Rating Scale), cognitive impairment (Short Portable Mental Status Questionnaire), functional independence (activities of daily living, instrumental activities of daily living), pain (Numeric Rating Scale), and acute clinical conditions (Acute Physiology and Chronic Health Evaluation II). During the first 3 days after ward admission, the presence of delirium (defined as ≥1 delirium episodes within 72 hours) was assessed daily using a rapid assessment for delirium (4AT scale). ED length of stay was calculated as the time (hours) between ED registration and when the person left the ED.

Fattori di rischio_in ED

GERIATRIC EMERGENCY MEDICINE

Length of Stay in the Emergency Department and Occurrence of Delirium in Older Medical Patients

Mario Bo, MD, PhD, Martina Bonetto, MD,† Giuliana Bottignole, MD,* Paola Porrino, MD,* Eleonora Coppo, MD,* Michela Tibaldi, MD,* Giacomo Ceci, MD,* Silvio Raspo, MD,† Giorgetta Cappa, MD,† and Giuseppe Bellelli, MD‡*

‘Questi i risultati suggeriscono che dovrebbero essere compiuti sforzi per ridurre l'ED-LOS dei pazienti anziani fragili.’

Table 3. Variables Independently Associated with Incident Delirium

Variable	B (Standard Error)	Exp (B) (95% Confidence Interval)
Length of stay in ED >10 hours 75th percentile	0.80 (0.35)	2.23 (1.13–4.41)
Moderate to severe cognitive impairment	1.70 (0.35)	5.47 (2.76–10.85)
Age	0.65 (0.03)	1.07 (1.01–1.13)

J Am Geriatr Soc 64:1114–1119, 2016.

Canadian Journal of Emergency Medicine (2021) 23:330–336
https://doi.org/10.1007/s43678-020-00004-8

ORIGINAL RESEARCH

Check for updates

Predictors of delirium in older patients at the emergency department: a prospective multicentre derivation study

Emmanuelle Béland[1] · Alexandra Nadeau[2] · Pierre-Hugues Carmichael[3] · Valérie Boucher[2] · Philippe Voyer[1,2] · Mathieu Pelletier[1,4] · Émilie Gouin[5] · Raoul Daoust[6,7] · Simon Berthelot[1,2] · Marie-Eve Lamontagne[1,8] · Michèle Morin[1,2] · Stéphane Lemire[1,2] · Thien Tuong Minh Vu[7,9] · Marcel Émond[1,2]

Fattori di rischio_in ED

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Gabriele Savioli

Abstract

Objective The objective of this study was to identify the predictors of incident delirium in this high-risk population.

Methods This study was a planned sub-analysis of the INDEED multicentre cohort study. We recruited patients aged ≥ 65, independent/semi-independent, with an emergency department (ED) length of stay ≥ 8 h and admitted to any hospital ward. Patients were followed up during their ED stay up to 24 h after ward admission. Sociodemographic characteristics, comorbidities, functional status (OARS), illness severity, level of frailty, cognitive status (TICS-m) and ED/patient environment evaluation were collected during initial interview. Patients were screened for delirium twice a day using the Confusion Assessment Method. Multivariate logistic regression was performed to identify the predictors of delirium.

Results Incident delirium was detected in 68 patients of the 612 patients included (11%). Initially, seven candidate predictors were included in a regression model, of which four were retained using a stepwise selection procedure. Presence of cognitive impairment at baseline (OR 3.6, $p < 0.001$), absence of mobilization during the whole ED length of stay (OR 3.3, $p = 0.002$), longer ED length of stay (OR 1.02, $p = 0.006$) were associated with a higher risk of incident delirium while higher functional status was associated with a lower risk (OR 0.8, $p < 0.001$).

Conclusion More work is needed to determine which tool(s) are most appropriate for the ED use to increase delirium screening compliance among health professionals working in this department. It is really the first step to be able to suggest interventions to decrease delirium incidence.

Fattori di rischio_in ED

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Fattori di rischio_in ED

Patients' characteristics			
Age, mean (SD)	80.6 (8.8)	76.4 (7.6)	**<0.001**
Female, *n* (%)	36 (52.9)	275 (50.6)	0.71
Delirium Index score, mean (SD)	4.9 (2.9)	1.1 (1.5)	**<0.001**
OARS score, mean (SD)	24.2±2.7	25.9±2.4	**<0.001**
TICS-m score, mean (SD)	27.7±6.5	31.6±5.3	**<0.001**
Charlson score, mean (SD)	2.3±2.5	2.0±1.9	0.28
APACHE II score, mean (SD)	10.8 (5.7)	11.5 (5.9)	0.39
Clinical Frailty Scale score, mean (SD)	4.1 (1.2)	3.4 (1.2)	**<0.001**
ED LOS, mean hours (SD)	43.3 (23.8)	36.6 (20.4)	0.01
Hospital LOS, mean hours (SD)	314.8 (233.0)	207.6 (200.5)	**<0.001**
Environmental factors			
Proportion of ED LOS spent in the corridor, %	4.5 (1.5)	9.7 (2.6)	**0.02**
Sufficient lighting at IE, *n* (%)	38 (56.7)	297 (54.9)	0.78
Sufficient hydration at IE, *n* (%)	27 (40.3)	187 (35.0)	0.39
Physical constraints at IE, *n* (%)	33 (50.0)	267 (49.5)	0.94
Medical equipment limiting movement at IE, *n* (%)	43 (71.7)	355 (70.2)	0.83
Good spatio-temporal orientation at IE, *n* (%)	31 (45.6)	291 (53.6)	0.21
Participants needing visual or hearing aids IE, *n* (%)	64 (94.1)	506 (93.0)	0.73
Use of visual or hearing aids during IE, *n* (%)	51 (75.0)	403 (74.1)	0.87
Controlled pain during ED LOS, *n* (%)	10 (17.5)	85 (18.6)	0.85
≥1 mobilization during ED LOS, *n* (%)	40 (71.4)	450 (90.2)	**<0.001**

Bold: *p* value <0.05. *ED* Emergency department; *LOS* length of stay; *IE* initial evaluation

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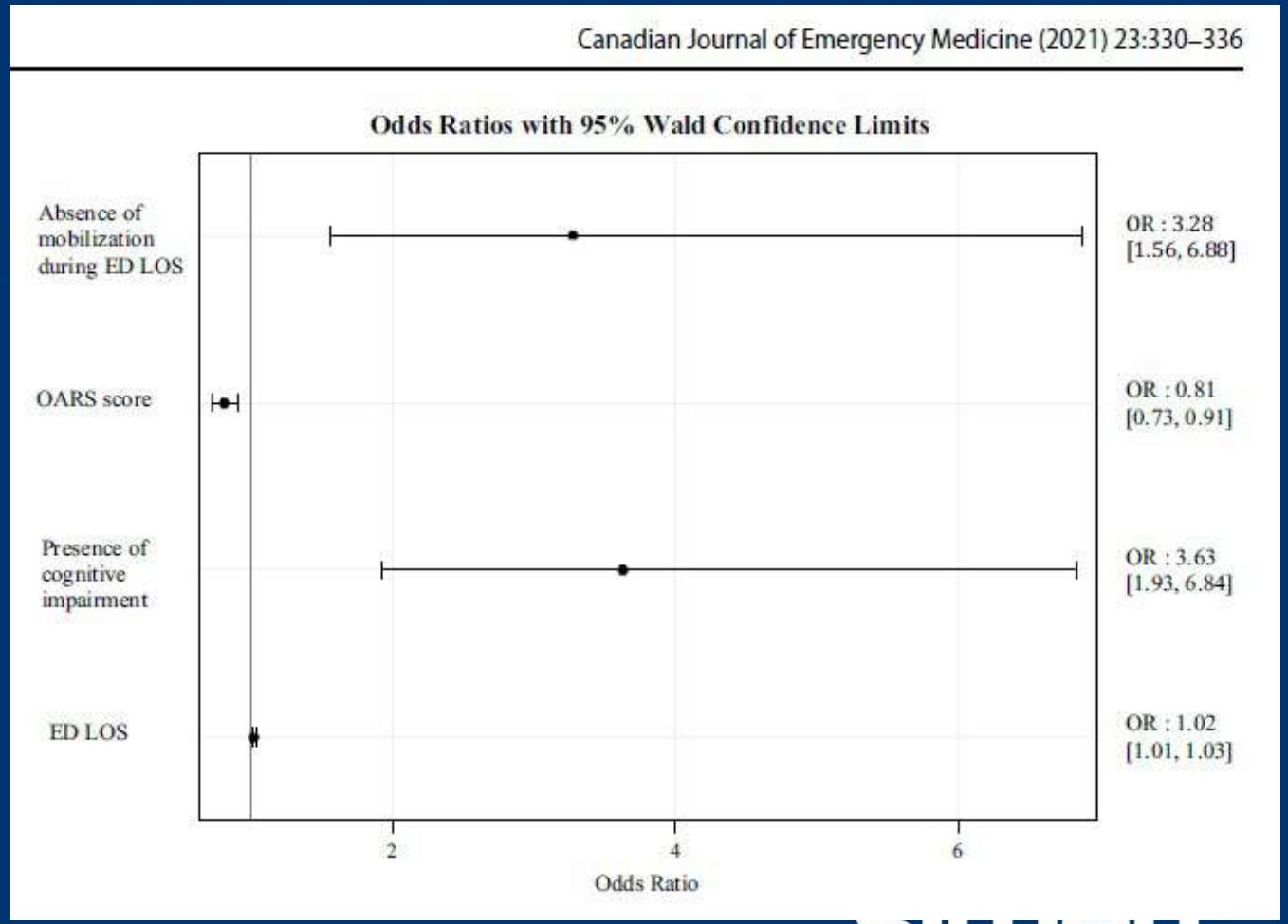
Fattori di rischio_in ED

“Sulla base dei nostri risultati, i **pazienti con deterioramento cognitivo che hanno un ED-LOS prolungato e non sono mobilizzati** sono particolarmente a rischio di sviluppare delirium. Pertanto, proponiamo un aumento delle risorse per mobilitare questi pazienti, fatto che potrebbe avere un impatto benefico sull'incidenza del delirio in ED".



Fattori di rischio_in ED

ORIGINAL RESEARCH

Increased Emergency Department Hallway Length of Stay is Associated with Development of Delirium

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Arnav Singla, BS*° †Center for Health Innovations and Outcomes Research, Feinstein Institutes of Medical Research, Northwell Health, Manhasset, New York
Liron Sinvani, MD†§
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Thomas Perera, MD*‡
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Timmy Li, PhD‡ °Co-first authors

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DOI: 10.5811/westjem.2021.1.49320

Kate van Loveren_Increased Emergency Department Hallway Length of Stay is Associated with Development of Delirium_Western Journal of Emergency Medicine_2021

Fattori di rischio_in ED

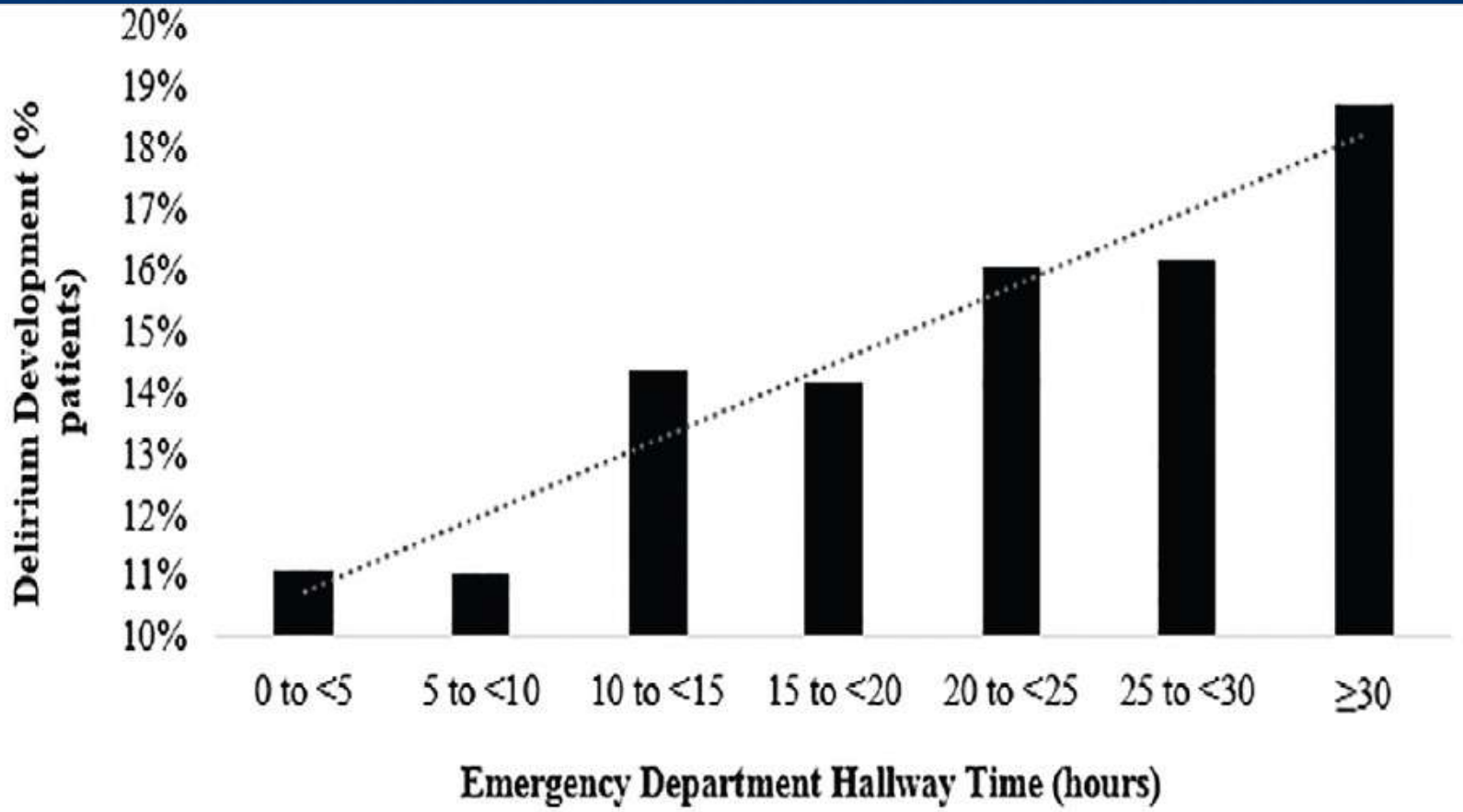

Figure 2. Impact of time spent in the emergency department hallway on the development of delirium.

Kate van Loveren_Increased Emergency Department Hallway Length of Stay is Associated with Development of Delirium_Western Journal of Emergency Medicine_2021

Fattori di rischio_in ED

Increased ED LOS in Hallway is Associated with Delirium — *van Loveren and Singla et al.*

Table 4. Length of stay comparisons between the delirium and control groups.

Outcome measure	Delirium (n = 1,920)	Control (n = 23,755)	P-value
Percent hallway time [median (IQR)]	50.5% (20.6%, 77.8%)	10.8% (0.0%, 59.6%)	<0.001
ED hallway LOS, hours [median (IQR)]	5.85 (1.94, 11.53)	0.80 (0.00, 6.15)	<0.001
ED LOS, hours [median (IQR)]	11.94 (7.48, 22.04)	8.12 (5.57, 13.37)	<0.001
Number of ED room transfers [median (IQR)]	5 (4, 5)	4 (3, 5)	<0.001
Hospital LOS, days [median (IQR)]	5.0 (3.0, 8.4)	4.6 (2.8, 7.9)	<0.001

P-values derived from Wilcoxon rank-sum tests.
ED, emergency department; *LOS,* length of stay; *IQR,* interquartile range.

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Kate van Loveren_Increased Emergency Department Hallway Length of Stay is Associated with Development of Delirium_Western Journal of Emergency Medicine_2021

Fattori di rischio_in ED

Forte associazione con:

- tempo di BOARDING trascorso nei corridoi degli ED
- LOS
- exit block

Da qui la urgente necessità di standardizzare processi di prevenzione, gestione del delirio

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Kate van Loveren_Increased Emergency Department Hallway Length of Stay is Associated with Development of Delirium_Western Journal of Emergency Medicine_2021

Crowding come fattore di rischio

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Gabriele Savioli

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Original Investigation | Emergency Medicine

Delirium in Older Patients With COVID-19 Presenting to the Emergency Department

Maura Kennedy, MD, MPH; Benjamin K. I. Helfand, MSc; Ray Yun Gou, MA; Sarah L. Gartaganis, MSW, MPH; Margaret Webb, BA; J. Michelle Moccia, DNP, ANP-BC, GS-C; Stacey N. Bruursema, LMSW-C; Belinda Dokic, MHA; Brigid McCulloch, DO; Hope Ring, MD; Justin D. Margolin, BS; Ellen Zhang, BA; Robert Anderson, MD; Rhonda L. Babine, MS, APRN, ACNS-BC; Tammy Hshieh, MD, MPH; Ambrose H. Wong, MD, MSEd; R. Andrew Taylor, MD, MHS; Kathleen Davenport, MD; Brittni Teresi, BA; Tamara G. Fong, MD, PhD; Sharon K. Inouye, MD, MPH

Fattori di rischio_in ED

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Maura Kennedy_Delirium in Older Patients With COVID-19 Presenting to the Emergency Department_JAMA Network Open. 2020

Fattori di rischio

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Original Investigation | Emergency Medicine

Delirium in Older Patients With COVID-19 Presenting to the Emergency Department

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Symptoms	Patients, No. (%) (N = 817)
Symptom at presentation	
Fever	459 (56)
Shortness of breath	420 (51)
Cough	412 (50)
Hypoxia (oxygen saturation <90%)	324 (40)
Weakness	241 (30)
Delirium	226 (28)
Fatigue	210 (26)
Diarrhea	130 (16)
Anorexia	122 (15)
Myalgias	99 (12)
Fall	91 (11)
Dizziness, fainting	70 (9)
Abdominal pain	66 (8)
Acute respiratory failure	54 (7)
Headache	51 (6)
Chest pain	50 (6)
Sore throat	48 (6)
Other symptoms[a]	106 (13)
Delirium at presentation (n = 226)	
Delirium as main or primary presenting symptom	37 (16)
Delirium present without fever or shortness of breath	84 (37)

Maura Kennedy_Delirium in Older Patients With COVID-19 Presenting to the Emergency Department_JAMA Network Open. 2020

Table 3. Risk Factors and Correlates of Delirium in Older Emergency Department Patients With Coronavirus Disease 2019

Risk factor	Risk factor prevalence, patients, No. (%) (N = 817)	Patients with delirium, No./total (%)		RR (95% CI)
		Risk factor present	Risk factor absent	
Risk factors (before baseline)[a]				
Age >75 y	459 (56)	157/459 (34)	69/358 (19)	1.77 (1.39-2.27)
Male	386 (47)	103/386 (27)	123/431 (29)	0.94 (0.75-1.17)
Black	215 (27)	58/215 (27)	164/578 (28)	0.95 (0.74-1.23)
Hispanic or Latinx	54 (7)	11/54 (20)	211/739 (29)	0.71 (0.42-1.22)
Nonwhite race	300 (38)	79/300 (26)	143/493 (29)	0.91 (0.72-1.15)
English, nonfluent	111 (14)	29/111 (26)	193/690 (28)	0.93 (0.67-1.31)
Living in nursing home	213 (26)	72/213 (34)	154/604 (26)	1.33 (1.05-1.67)
Living in nursing home or assisted living	297 (36)	104/297 (35)	122/520 (24)	1.49 (1.20-1.86)
Heavy alcohol use	20 (2)	4/20 (20)	222/797 (28)	0.72 (0.30-1.74)
Active smoker	16 (2)	5/16 (31)	221/801 (28)	1.13 (0.54-2.36)
Prior psychoactive medication use	464 (57)	155/464 (33)	71/353 (20)	1.66 (1.30-2.12)

Maura Kennedy_Delirium in Older Patients With COVID-19 Presenting to the Emergency Department_JAMA Network Open. 2020

Maura Kennedy_Delirium in Older Patients With COVID-19 Presenting to the Emergency Department_JAMA Network Open. 2020

Table 3. Risk Factors and Correlates of Delirium in Older Emergency Department Patients With Coronavirus Disease 2019

Risk factor	Risk factor prevalence, patients, No. (%) (N = 817)	Patients with delirium, No./total (%)		
		Risk factor present	Risk factor absent	RR (95% CI)
Chronic conditions (comorbidities)				
≥4 Chronic conditions	119 (15)	48/119 (40)	178/698 (26)	1.58 (1.23-2.04)
Vision impairment	59 (7)	36/59 (61)	190/758 (25)	2.43 (1.92-3.09)
Hearing impairment	54 (7)	23/54 (43)	203/763 (27)	1.60 (1.15-2.23)
Cognitive impairment or dementia	248 (30)	95/248 (38)	131/569 (23)	1.66 (1.34-2.07)
Stroke or cerebrovascular accident	107 (13)	46/107 (43)	180/710 (25)	1.70 (1.32-2.18)
Parkinson disease	23 (3)	14/23 (61)	212/794 (27)	2.28 (1.61-3.23)
Chronic pulmonary disease	221 (27)	53/221 (24)	173/596 (29)	0.83 (0.63-1.08)
Diabetes	312 (38)	90/312 (29)	136/505 (27)	1.07 (0.85-1.34)
Obesity (body mass index ≥35)[b]	67 (8)	21/67 (31)	205/750 (27)	1.15 (0.79-1.67)
Active cancer	37 (5)	10/37 (27)	216/780 (28)	0.98 (0.57-1.68)
Chronic kidney disease	179 (22)	51/179 (29)	175/638 (27)	1.04 (0.80-1.35)
Requiring hemodialysis	38 (5)	8/38 (21)	218/779 (28)	0.75 (0.40-1.41)
Chronic liver disease	23 (3)	8/23 (35)	218/794 (28)	1.27 (0.72-2.24)
Immunosuppressive conditions	69 (8)	14/69 (20)	212/748 (28)	0.72 (0.44-1.16)
Mental health conditions	227 (28)	76/227 (34)	150/590 (25)	1.32 (1.05-1.66)

Fattori di rischio

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Original Investigation | Emergency Medicine

Delirium in Older Patients With COVID-19 Presenting to the Emergency Department

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Table 4. Factors Associated With Risk of Delirium in Older Emergency Department Patients With Coronavirus Disease 2019

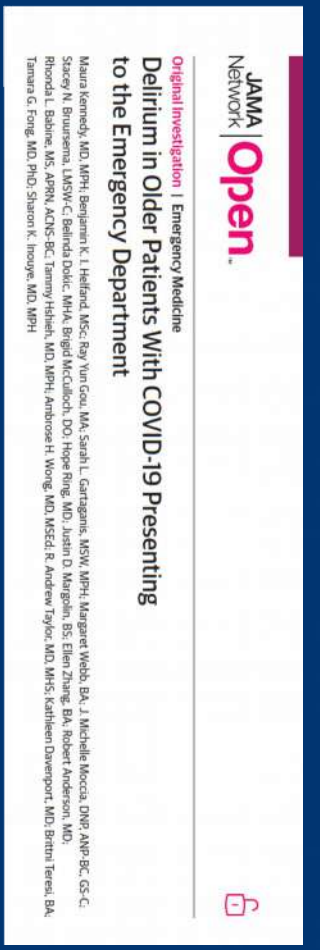
Risk factor	Patients, No. (%) (N = 817)	Adjusted RR (95% CI)
Age >75 y	459 (56)	1.51 (1.17-1.95)
Living in nursing home or assisted living	297 (36)	1.23 (0.98-1.55)
Prior psychoactive medications	464 (57)	1.42 (1.11-1.81)
Vision impairment	59 (7)	1.98 (1.54-2.54)
Hearing impairment	54 (7)	1.10 (0.78-1.55)
Stroke or cerebrovascular accident	107 (13)	1.47 (1.15-1.88)
Parkinson disease	23 (3)	1.88 (1.30-2.58)

Maura Kennedy_Delirium in Older Patients With COVID-19 Presenting to the Emergency Department_JAMA Network Open. 2020

Fattori di rischio

Table 5. Outcomes Associated With Delirium in Older Emergency Department Patients With Coronavirus Disease 2019

Outcome	Outcome rate, patients, No./total (%)			RR (95% CI)	
	Overall (N = 817)	Patients with delirium (n = 226)	Patients without delirium (n = 591)	Crude	Adjusted[a]
Admitted to hospital from emergency department	737 (90)	213 (94)	524 (89)	1.06 (1.02-1.11)	1.06 (1.02-1.10)
Any intensive care unit stay[b]	191/737 (26)	72/213 (34)	119/524 (23)	1.49 (1.16-1.90)	1.67 (1.30-2.15)
Received mechanical ventilation[c]	126/191 (66)	42/72 (58)	84/119 (71)	0.83 (0.66 - 1.04)	0.89 (0.71-1.12)
Median hospital length of stay >8 d[b]	353/737 (48)	109/213 (51)	244/524 (47)	1.10 (0.93-1.29)	1.14 (0.97-1.35)
Discharged to					
Home	195 (24)	35 (15)	160 (27)	0.57 (0.41-0.80)	0.77 (0.56-1.07)
Assisted living	21 (3)	8 (4)	13 (2)	1.61 (0.68-3.83)	1.21 (0.49-3.00)
Rehabilitation	111 (14)	41 (18)	70 (12)	1.53 (1.08-2.18)	1.55 (1.07-2.26)
Nursing home	116 (14)	31 (14)	85 (14)	0.95 (0.65-1.40)	0.83 (0.57-1.20)
Hospice	15 (2)	2 (1)	13 (2)	0.40 (0.09-1.77)	0.37 (0.08-1.78)
In-hospital death	238 (29)	84 (37)	154 (26)	1.43 (1.15-1.77)	1.24 (1.00-1.55)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Original Investigation | Emergency Medicine

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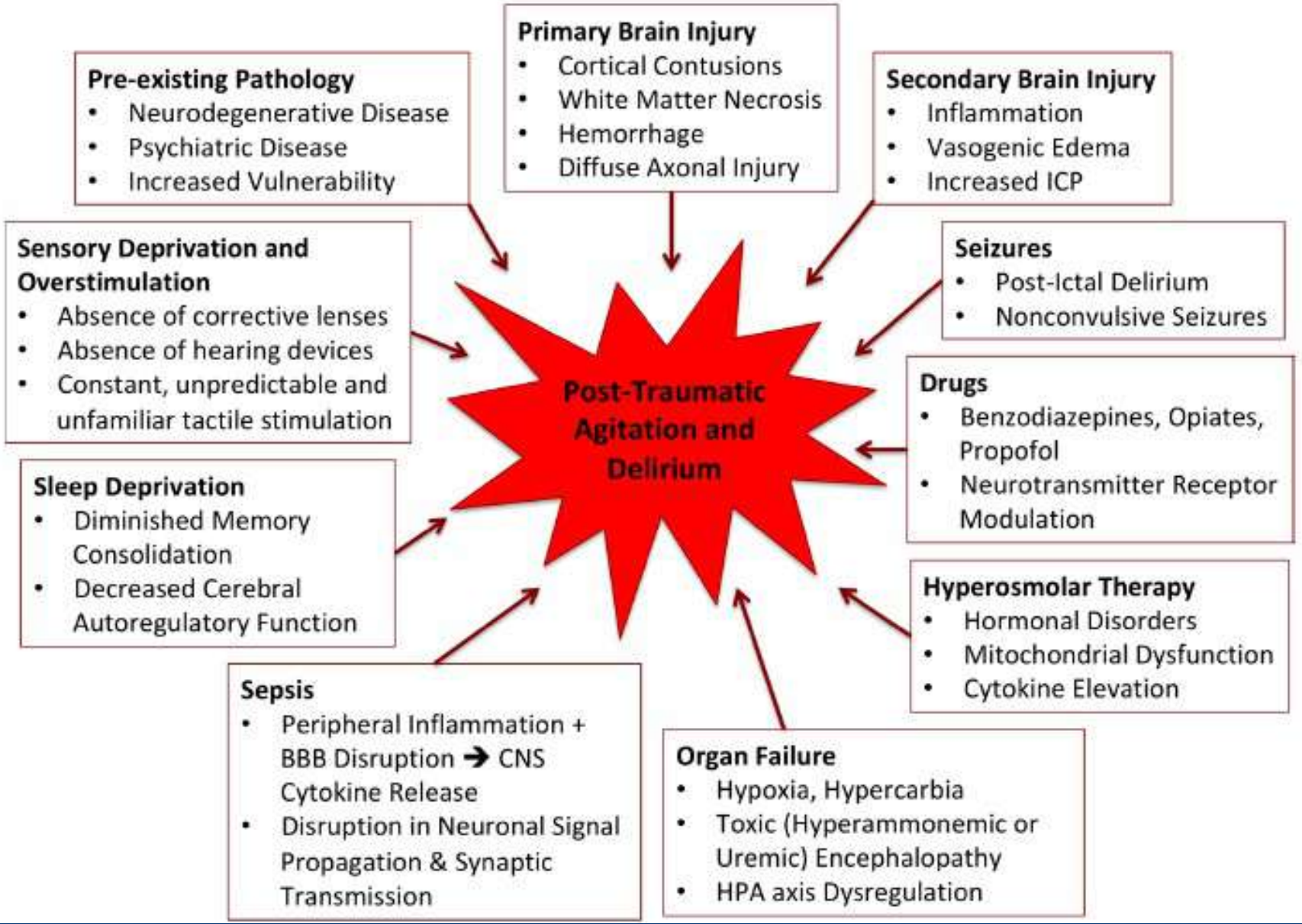

ROBERTSON_Challenges of Delirium Management in Patients with Traumatic Brain_Current Neuropharmacology 2021

PREVENZIONE

XII congresso nazionale
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Gabriele Savioli

Prevenzione

Prevenire, identificare e curare il delirio è **fondamentale per migliorare la cura del paziente**.

L'American College of Emergency Physicians (**ACEP**) ha sviluppato strumenti elettronici (es: **ADEPT**) p**er aiutare a migliorare l'assistenza** fornita agli anziani a rischio di delirio in ED.

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Shenvi C, Kennedy M, Austin CA, *et al*. Managing delirium and agitation in the older emergency department patient: the ADEPT tool. *Ann Emerg Med* 2020;75:136–45.

Gabriele Savioli

Prevenzione

- programmi di prevenzione **multifattoriali** nei pazienti ospedalizzati hanno mostrato una riduzione dell'incidenza del delirio.

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Marcantonio ER. In the clinic. delirium. *Ann Intern Med* 2011;154:ITC6-1, ITC6-2, ITC6-3, ITC6-4, ITC6-5, ITC6-6, ITC6-7, ITC6-8, ITC6-9, ITC6-10, ITC6-11, ITC6-12, ITC6-13, ITC6-14, ITC6-15.
Marcantonio ER. Postoperative delirium: a 76-year-old woman with delirium following surgery. *JAMA* 2012;308:73–81.
Bergmann MA, Murphy KM, Kiely DK, *et al*. A model for management of delirious postacute care patients. *J Am Geriatr Soc* 2005;53:1817–25.

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Prevenzione

- sia gli interventi **farmacologici** che **non farmacologici** hanno dimostrato di avere un ruolo nel ridurre l'incidenza, la gravità o la durata del delirio
- contesti clinici: pazienti ricoverati, in ambito medico e chirurgico, ICU, RSA

Siddiqi N, Harrison JK, Clegg A, *et al*. Interventions for preventing delirium in hospitalised non-ICU patients. *Cochrane Database Syst Rev* 2016;3:CD005563.
Nikooie R, Neufeld KJ, ES O, *et al*. Antipsychotics for treating delirium in hospitalized adults: a systematic review. *Ann Intern Med* 2019.
Candy B, Jackson KC, Jones L, *et al*. Drug therapy for delirium in terminally ill adult patients. *Cochrane Database Syst Rev* 2012;11:CD004770.
Yu A, Wu S, Zhang Z, *et al*. Cholinesterase inhibitors for the treatment of delirium in non-ICU settings. *Cochrane Database Syst Rev* 2018;6:CD012494.
Woodhouse R, Burton JK, Rana N, *et al*. Interventions for preventing delirium in older people in institutional long-term care. *Cochrane Database Syst Rev* 2019;4:CD009537.
Young J, Murthy L, Westby M, *et al*. Diagnosis, prevention, and management of delirium: summary of NICE guidance. *BMJ* 2010;341:c3704.
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Marcantonio ER. Postoperative delirium: a 76-year-old woman with delirium following surgery. *JAMA* 2012;308:73–81.
Bergmann MA, Murphy KM, Kiely DK, *et al*. A model for management of delirious postacute care patients. *J Am Geriatr Soc* 2005;53:1817–25.

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Prevenzione

- Di qui il ruolo che potrebbe avere la prevenzione anche in ED

Siddiqi N, Harrison JK, Clegg A, *et al*. Interventions for preventing delirium in hospitalised non-ICU patients. *Cochrane Database Syst Rev* 2016;3:CD005563.
Nikooie R, Neufeld KJ, ES O, *et al*. Antipsychotics for treating delirium in hospitalized adults: a systematic review. *Ann Intern Med* 2019.
Candy B, Jackson KC, Jones L, *et al*. Drug therapy for delirium in terminally ill adult patients. *Cochrane Database Syst Rev* 2012;11:CD004770.
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Woodhouse R, Burton JK, Rana N, *et al*. Interventions for preventing delirium in older people in institutional long-term care. *Cochrane Database Syst Rev* 2019;4:CD009537.
Young J, Murthy L, Westby M, *et al*. Diagnosis, prevention, and management of delirium: summary of NICE guidance. *BMJ* 2010;341:c3704.
Marcantonio ER. In the clinic. delirium. *Ann Intern Med* 2011;154:ITC6-1, ITC6-2, ITC6-3, ITC6-4, ITC6-5, ITC6-6, ITC6-7, ITC6-8, ITC6-9, ITC6-10, ITC6-11, ITC6-12, ITC6-13, ITC6-14, ITC6-15.
Marcantonio ER. Postoperative delirium: a 76-year-old woman with delirium following surgery. *JAMA* 2012;308:73–81.
Bergmann MA, Murphy KM, Kiely DK, *et al*. A model for management of delirious postacute care patients. *J Am Geriatr Soc* 2005;53:1817–25.

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MANAGEMENT: PREVENT

- La maggior parte dei PS sono ambienti affollati, luminosi, rumorosi e potenzialmente deliriogeni, specialmente per i pazienti più anziani.

Tuttavia..

Shenvi C, Kennedy M, Austin CA, Wilson MP, Gerardi M, Schneider S. Managing Delirium and Agitation in the Older Emergency Department Patient: The ADEPT Tool. Ann Emerg Med. 2020 Feb;75(2):136-145. doi: 10.1016/j.annemergmed.2019.07.023. Epub 2019 Sep 26. PMID: 31563402; PMCID: PMC7945005.
Inouye SK, Westendorp RG, Saczynski JS. Delirium in elderly people. Lancet. 2014;383:911–922. [PubMed: 23992774]

MANAGEMENT: PREVENT

Misure che possono essere intraprese :

- trattamento della condizione sottostante
- gestione del dolore con farmaci non sedativi e non oppioidi.
- trattamento di nausea, vomito e costipazione
- Proseguire trp domiciliare correttamente per prevenire l'esacerbazione dei problemi medici di base..

Shenvi C, Kennedy M, Austin CA, Wilson MP, Gerardi M, Schneider S. Managing Delirium and Agitation in the Older Emergency Department Patient: The ADEPT Tool. Ann Emerg Med. 2020 Feb;75(2):136-145. doi: 10.1016/j.annemergmed.2019.07.023. Epub 2019 Sep 26. PMID: 31563402; PMCID: PMC7945005.

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MANAGEMENT: PREVENT

- Idratazione
- cibo (salvo controindicazioni)
- accesso e assistenza alla toilette
- assistenza o ausili per la mobilità
- Utilizzo dispositivi audio-assistiti

Shenvi C, Kennedy M, Austin CA, Wilson MP, Gerardi M, Schneider S. Managing Delirium and Agitation in the Older Emergency Department Patient: The ADEPT Tool. Ann Emerg Med. 2020 Feb;75(2):136-145. doi: 10.1016/j.annemergmed.2019.07.023. Epub 2019 Sep 26. PMID: 31563402; PMCID: PMC7945005.
Inouye SK, Charpentier PA. Precipitating factors for delirium in hospitalized elderly persons. Predictive model and interrelationship with baseline vulnerability. JAMA. 1996;275:852–857. [PubMed: 8596223]
Inouye SK, Westendorp RG, Saczynski JS. Delirium in elderly people. Lancet. 2014;383:911–922. [PubMed: 23992774]

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MANAGEMENT: PREVENT

- Se non necessari dal punto di vista medico, devono essere evitati:
  - atti che determinano allettamento, compresi i bracciali per la pressione sanguigna, gli elettrocateteri del monitor, le infusioni endovenose continue e i cateteri vescicali.
- Un numero maggiore di vincoli o ancoraggi, immobilizzazione e uso di cateteri vescicali sono associati a tassi più elevati di delirio

Shenvi C, Kennedy M, Austin CA, Wilson MP, Gerardi M, Schneider S. Managing Delirium and Agitation in the Older Emergency Department Patient: The ADEPT Tool. Ann Emerg Med. 2020 Feb;75(2):136-145. doi: 10.1016/j.annemergmed.2019.07.023. Epub 2019 Sep 26. PMID: 31563402; PMCID: PMC7945005.
Inouye SK, Charpentier PA. Precipitating factors for delirium in hospitalized elderly persons. Predictive model and interrelationship with baseline vulnerability. JAMA. 1996;275:852–857. [PubMed: 8596223]
Inouye SK, Westendorp RG, Saczynski JS. Delirium in elderly people. Lancet. 2014;383:911–922. [PubMed: 23992774]

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MANAGEMENT: PREVENT

- Fornire orologi con caratteri grandi e altri segnali visivi sulla data e sul luogo
- incoraggiare i familiari e gli operatori sanitari che dimostrano una presenza rassicurante a rimanere al capezzale.
- volontari per calmare i pazienti

Shenvi C, Kennedy M, Austin CA, Wilson MP, Gerardi M, Schneider S. Managing Delirium and Agitation in the Older Emergency Department Patient: The ADEPT Tool. Ann Emerg Med. 2020 Feb;75(2):136-145. doi: 10.1016/j.annemergmed.2019.07.023. Epub 2019 Sep 26. PMID: 31563402; PMCID: PMC7945005.
Kostas T, Zimmerman K, Rudolph J. Improving delirium care: prevention, monitoring, and assessment. Neurohospitalist. 2013;3:194–202. [PubMed: 24198901]
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MANAGEMENT: PREVENT

- ED-LOS superiore a 10 ore raddoppia il rischio di delirio incidente.
- misure e protocolli che riducano la durata ED-LOS ed evitano il BOARDING.
- Dare priorità al trasferimento dei pazienti più anziani o fragili
- Comunicare da ED la presenza di delirio o agitazione ai reparti. Quando la diagnosi di delirio non viene fatta al pronto soccorso, è anche più probabile che non venga fatta nemmeno nei reparti

Shenvi C, Kennedy M, Austin CA, Wilson MP, Gerardi M, Schneider S. Managing Delirium and Agitation in the Older Emergency Department Patient: The ADEPT Tool. Ann Emerg Med. 2020 Feb;75(2):136-145. doi: 10.1016/j.annemergmed.2019.07.023. Epub 2019 Sep 26. PMID: 31563402; PMCID: PMC7945005.
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Prevenzione

Ciò è ribadito nelle recenti Geriatric ED Guidelines, un documento di consenso della Society for Academic Emergency Medicine, dell'American College of Emergency Physicians, dell'American Geriatrics Society e dell'Emergency Nurses Association, progettato "**per fornire un insieme standardizzato di linee guida che possano efficacemente migliorare la cura della popolazione geriatrica**"

GERIATRIC EMERGENCY DEPARTMENT GUIDELINES

American College of Emergency Physicians®
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AGS THE AMERICAN GERIATRICS SOCIETY
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SAFE PRACTICE, SAFE CARE

SAEM Society for Academic Emergency Medicine

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Terrell KM, Hustey FM, Hwang U, et al. Quality indicators for geriatric emergency care. Acad EmergMed 2009;16(5):441-9.
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Prevenzione

POLICY STATEMENT

Geriatric Emergency Department Guidelines

0196-0644/$-see front matter

http://dx.doi.org/10.1016/j.annemergmed.2014.02.008

La qualità dell'assistenza in PS nei nostri pazienti più anziani include una valutazione cognitiva.

Debra Eagles, MD, MSc ; Delirium in older emergency department patients CJEM 2018

OUTCOMES

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Outcomes nei reparti

Il delirio ED è associato a:

- un aumento significativo della mortalità intraospedaliera
- un aumento significativo della mortalità alla dimissione a 30 giorni e 6 mesi
- perdita di indipendenza
- disturbo post-traumatico da stress

Kennedy M, Enander RA, Tadiri SP, *et al*. Delirium risk prediction, healthcare use and mortality of elderly adults in the emergency department. *J Am Geriatr Soc* 2014;62:462–9.
Kakuma R, du Fort GG, Arsenault L, *et al*. Delirium in older emergency department patients discharged home: effect on survival. *J Am Geriatr Soc* 2003;51:443–50.
Hsieh SJ, Madahar P, Hope AA, *et al*. Clinical deterioration in older adults with delirium during early hospitalisation: a prospective cohort study. *BMJ Open* 2015;5:e007496.
Girard TD, Jackson JC, Pandharipande PP, *et al*. Delirium as a predictor of long-term cognitive impairment in survivors of critical illness. *Crit Care Med* 2010;38:1513–20.

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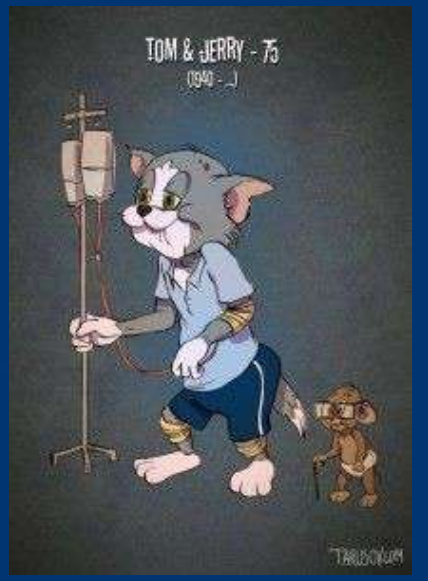
Outcomes nei reparti

- aumento della durata della degenza in terapia intensiva e ospedaliera.
- sviluppo di disturbi neuropsichiatrici, in particolare alla demenza.



Girard T, Jackson J, Pandaripande P, Pun B, Thompson J, Shintani A, et al. Delirium as a predictor of long-term cognitive impairment in survivors of critical illness. Crit Care Med. 2010;38(7):1513–20.
van den Boogaard M, Kox M, Quinn K, van Achterberg T, van der Hoeven J, Schoonhoven L, et al. Biomarkers associated with delirium in critically ill patients and their relation with long-term subjective cognitive dysfunction; indications for different pathways governing delirium in inflamed and noninflamed patients. Crit Care. 2011;15(R297):1–9.
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Wolters AE, Peelen LM, Welling MC, Kok L, de Lange DW, Cremer OL, et al. Long-term mental health problems after delirium in the ICU. Crit Care Med. 2016;44(10):1808–13.
Witlox J, Eurelings L, de Jonghe J, Kalisvaart K, Eikelenboom P, van Gool W. Delirium in elderly patients and the risk of postdischarge mortality, institutionalization, and demenetia: a meta-analysis. JAMA. 2010; 304(4):443–51.

Outcomes nei reparti

- declino cognitivo
- ritorno non pianificato al pronto soccorso
- maggiore probabilità di ricovero in unità di terapia intensiva (ICU)
- nuovo ricovero ospedaliero
- collocazione del paziente in casa di cura.

Emond M, Grenier D, Morin J, Eagles D, Boucher V, Le Sage N, et al. Emergency department stay associated delirium in older patients. Can Geriatr J. 2017;20(1):10–4.
Miu DKY, Chan CW, Kok C. Delirium amond elderly patients admitted to a post-acute care facility and 3-months outcome. Geriatr Gerontol Int. 2016;16(5):586–92.
Krogseth M, Wyller TB, Engedal K, Juliebo V. Delirium is an important predictor of incident dementia among elderly hip fracture patients. Dement Geriatr Cogn Disord. 2011;31(1):63–70.
McCusker J, Cole M, Abrahamowicz M, Primeau F, Belzile E. Delirium predicts 12-month mortality. Arch Intern Med. 2002;162(4):457–63.
National Institute for Health and Care Excellence. Delirium: prevention, diagnosis and management. 2019. Available from: https ://www.nice.org.uk/guidance/cg103 . Accessed 10 Aug 2020.

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Outcomes nei reparti

Le conseguenze del delirio possono anche avere effetti a lungo termine sui pazienti, influendo:

- sul recupero funzionale,
- sulla cognizione
- sull'aumento del rischio di mortalità.

Emond M, Grenier D, Morin J, Eagles D, Boucher V, Le Sage N, et al. Emergency department stay associated delirium in older patients. Can Geriatr J. 2017;20(1):10–4.
Miu DKY, Chan CW, Kok C. Delirium amond elderly patients admitted to a post-acute care facility and 3-months outcome. Geriatr Gerontol Int. 2016;16(5):586–92.
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Outcomes in ED

Il delirium è associato:

- pazienti con delirium spesso non ritornano al loro livello cognitivo o funzionale pre-morboso
- sono ad aumentato rischio di istituzionalizzazione.
- Hanno una probabilità sette volte maggiore di morte.

Debra Eagles, Delirium in older emergency department patients CJEM 2018

Outcomes in ED

Con una così alta prevalenza e conseguenze devastanti, è chiaro che il delirio è un'emergenza medica.

Debra Eagles, Delirium in older emergency department patients CJEM 2018

Outcomes in ED

Le attuali raccomandazioni affermano che tutti i pazienti anziani in ED con fattori di rischio per lo sviluppo del delirio dovrebbero essere sottoposti a screening giornalmente.

Emond M, Grenier D, Morin J, Eagles D, Boucher V, Le Sage N, et al. Emergency department stay associated delirium in older patients. Can Geriatr J. 2017;20(1):10–4.
Miu DKY, Chan CW, Kok C. Delirium amond elderly patients admitted to a post-acute care facility and 3-months outcome. Geriatr Gerontol Int. 2016;16(5):586–92.
Krogseth M, Wyller TB, Engedal K, Juliebo V. Delirium is an important predictor of incident dementia among elderly hip fracture patients. Dement Geriatr Cogn Disord. 2011;31(1):63–70.
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National Institute for Health and Care Excellence. Delirium: prevention, diagnosis and management. 2019. Available from: https ://www.nice.org.uk/guidance/cg103 . Accessed 10 Aug 2020.

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MIGLIORARE LA DIAGNOSI

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INTERVENTI DI FORMAZIONE SUL PERSONALE

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Published electronically 16 May 2020

QUALITY IMPROVEMENT REPORT

Use of a digital delirium pathway and quality improvement to improve delirium detection in the emergency department and outcomes in an acute hospital

EMMA VARDY, NIAMH COLLINS, UMANG GROVER, REBECCA THOMPSON, ALEXANDRA BAGNALL, GEORGIA CLARKE, SHELLEY HEYWOOD, BEVERLEY THOMPSON, LESLEY WINTLE, LOUISE NUTT, SARAH HULME

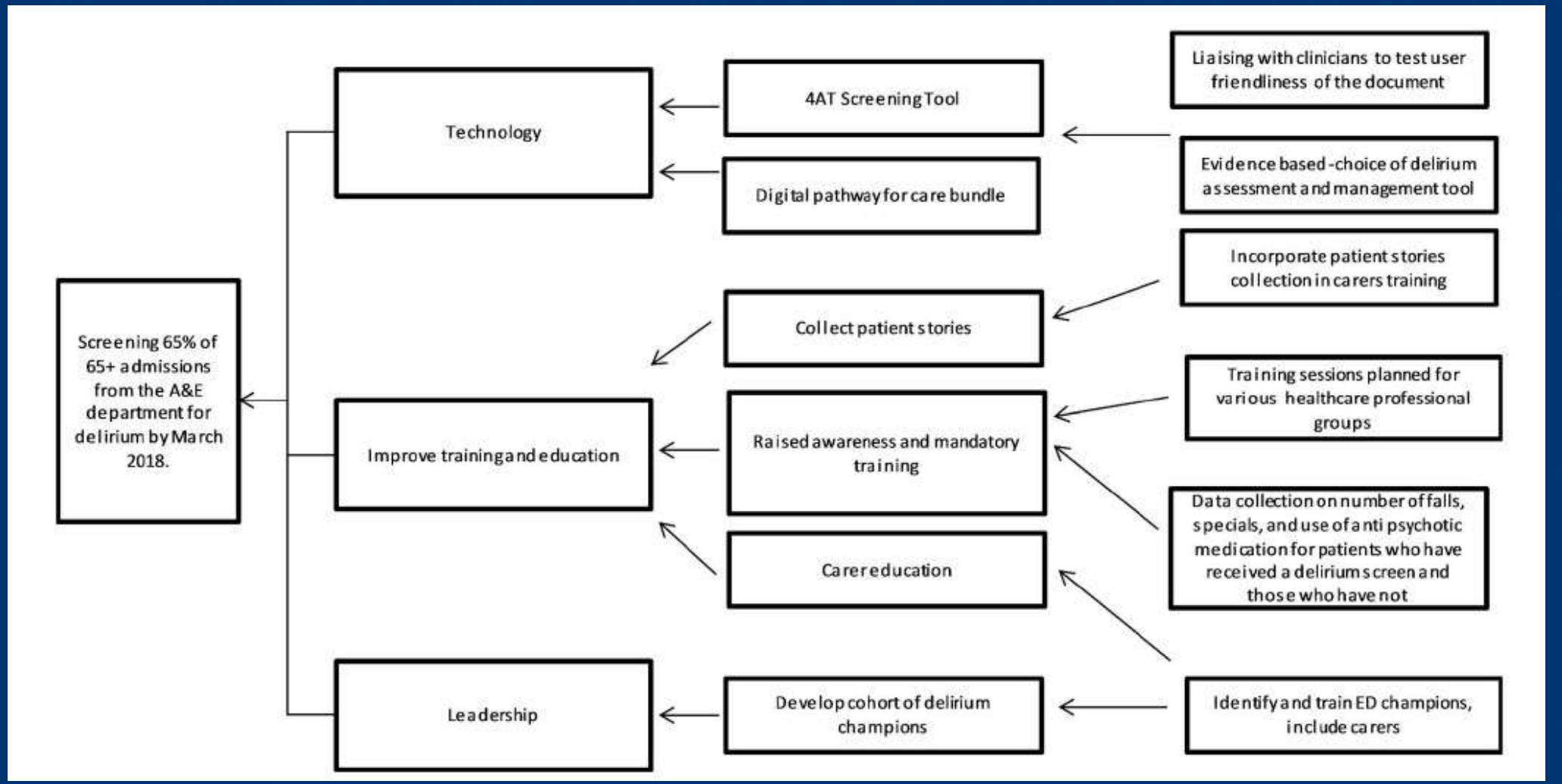
Abstract

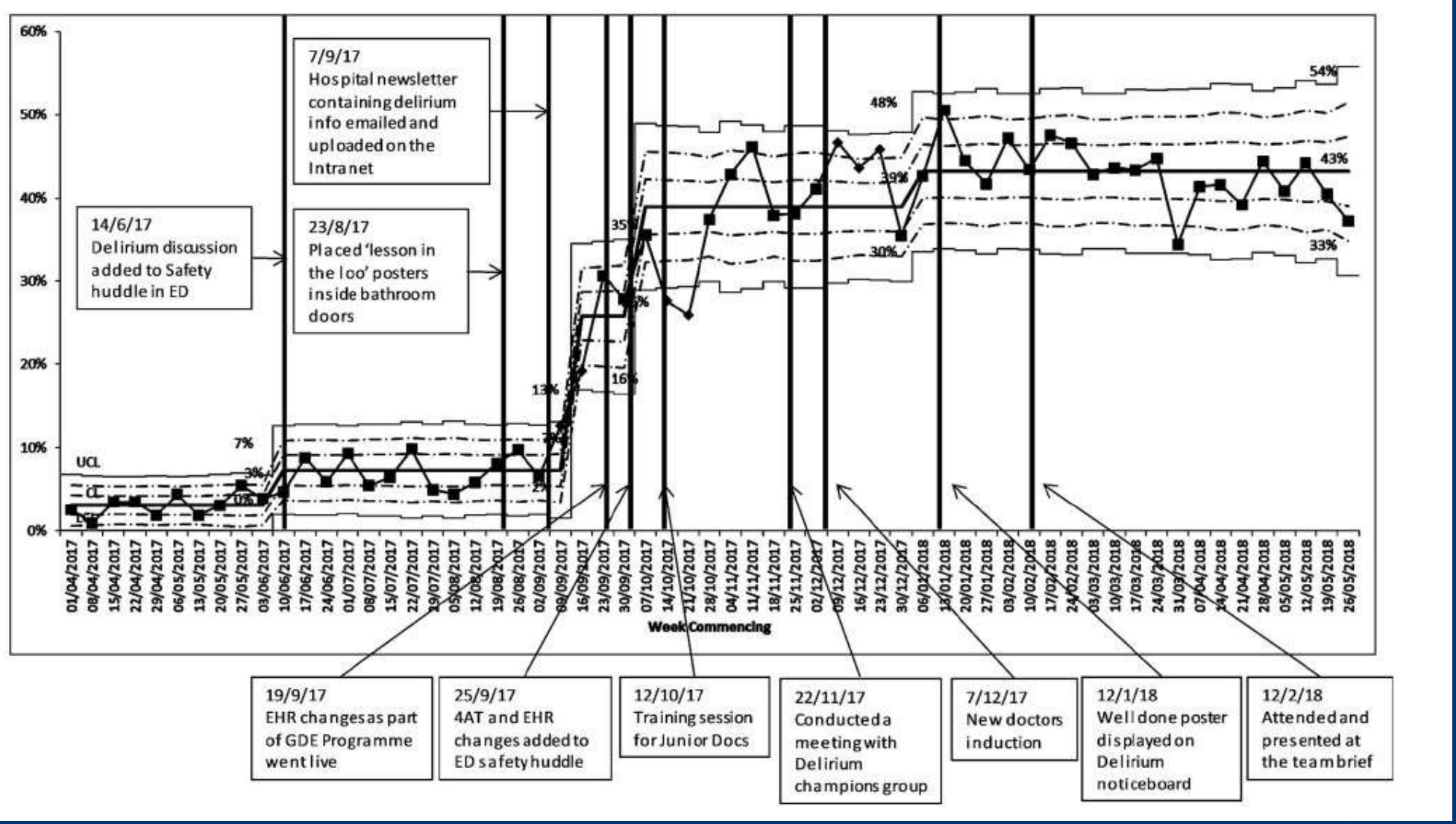
Background: delirium is a common condition associated with hospital admission. Detection and diagnosis is important to identify the underlying precipitating cause and implement effective management and treatment. Quality improvement (QI) methodology has been applied in limited publications. There are even fewer publications of the role of development of the electronic health record (EHR) to enhance implementation.

Methods: we used QI methodology to improve delirium detection in the emergency department (ED). Plan Do Study Act (PDSA) cycles could be broadly categorised into technology, training and education and leadership. As part of the technology PDSA an electronic delirium pathway was developed as part of an NHS England digital systems improvement initiative (NHS England Global Digital Exemplar). The electronic pathway incorporated the 4AT screening tool, the Confusion Assessment Method, the TIME delirium management bundle, investigation order sets and automated coding of delirium as a health issue.

Results: development of the EHR combined with education initiatives had benefit in terms of the number of people assessed for delirium on admission to the ED and the total number of people diagnosed with delirium across the organisation. The implementation of a delirium pathway as part of the EHR improved the use of 4AT in those 65 years and over from baseline of 3% completion in October 2017 to 43% in January 2018.

Conclusion: we showed that enhancement of the digital record can improve delirium assessment and diagnosis. Furthermore, the implementation of a delirium pathway is enhanced by staff education.





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TOOLS

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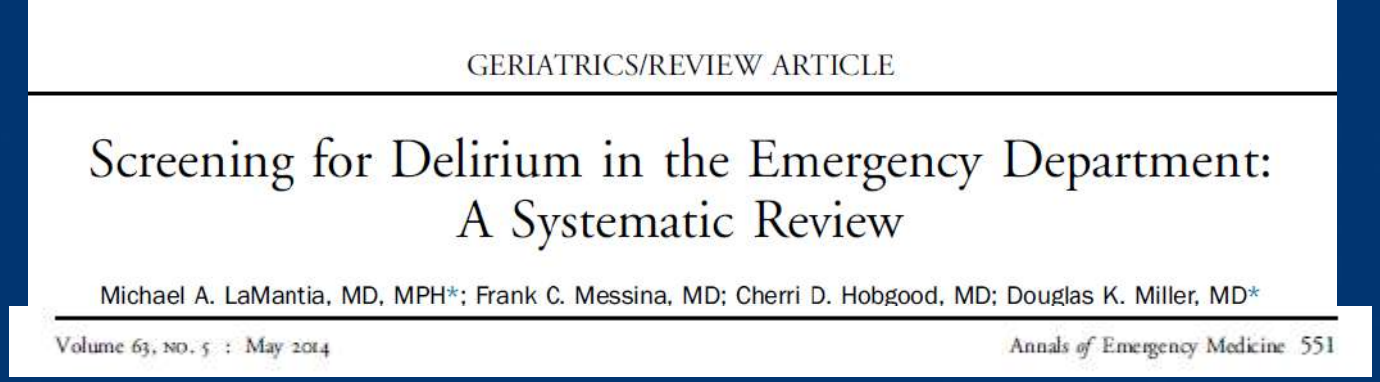

GERIATRICS/REVIEW ARTICLE

Screening for Delirium in the Emergency Department: A Systematic Review

Michael A. LaMantia, MD, MPH*; Frank C. Messina, MD; Cherri D. Hobgood, MD; Douglas K. Miller, MD*

Volume 63, no. 5 : May 2014 Annals of Emergency Medicine 551

- I risultati dello studio indicano che sono stati utilizzati diversi strumenti di screening del delirio utilizzato nelle indagini nell'ED, sebbene la convalida di questi strumenti per questo particolare ambiente sia stata minima.
- L'intervallo ideale durante il quale dovrebbe aver luogo un processo di screening del delirio deve ancora essere determinato.
- sarà necessario convalidare gli strumenti di screening del delirio da utilizzare per le indagini e l'assistenza clinica in pronto soccorso,
- sarà necessario definire la tempistica e la forma ideali del processo di valutazione del delirio per gli anziani

Published in final edited form as:
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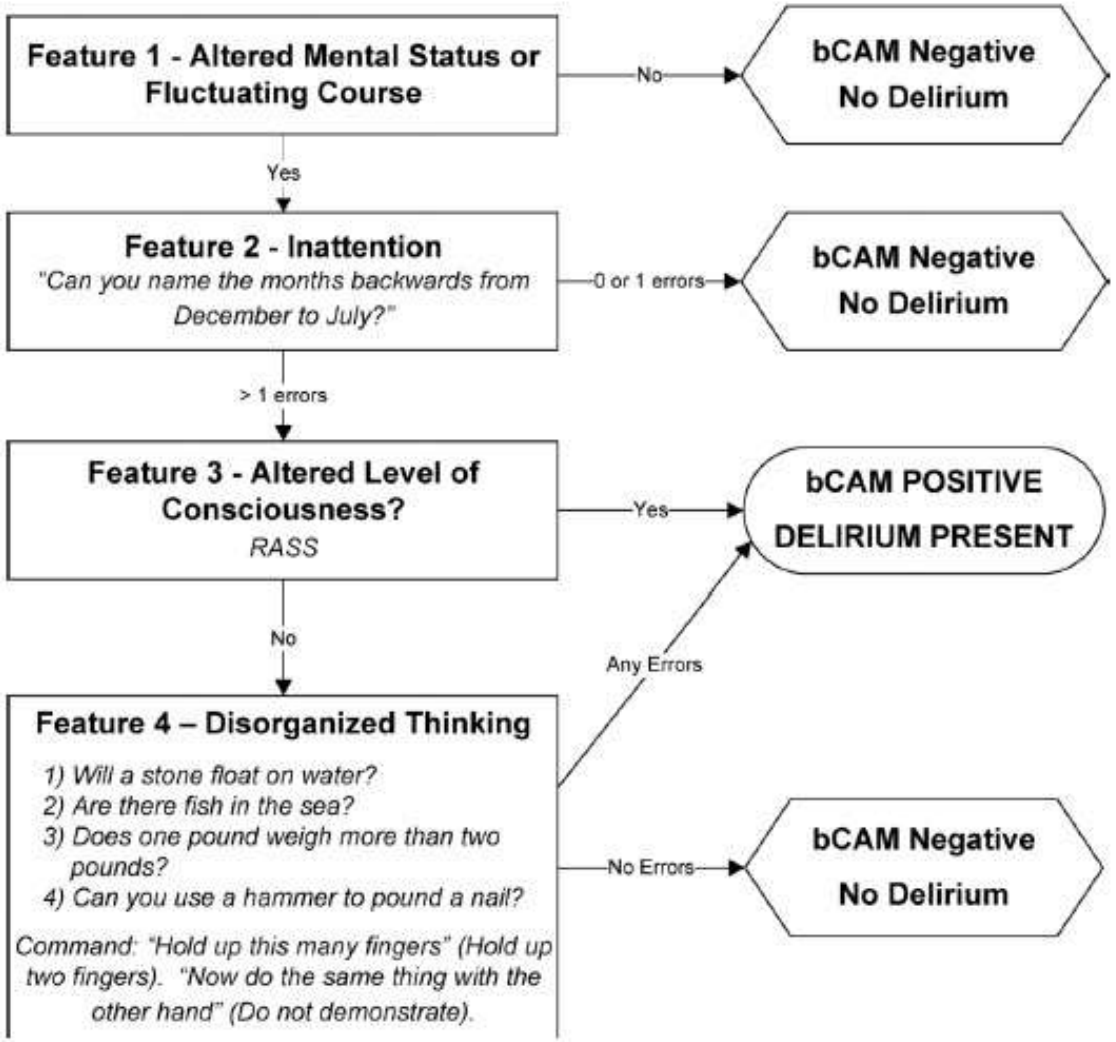
Diagnosing Delirium in Older Emergency Department Patients: Validity and Reliability of the Delirium Triage Screen and the Brief Confusion Assessment Method

Jin H. Han, MD, MSc[†,*], Amanda Wilson, MD[#], Eduard E. Vasilevskis, MD, MPH[†,‡,ll,§], Ayumi Shintani, PhD, MPH[^], John F. Schnelle, PhD[†,‡,ll,§], Robert S. Dittus, MD, MPH[§,‡,ll], Amy J. Graves, SM, MPH[^], Alan B. Storrow, MD[*], John Shuster, MD[#], and E. Wesley Ely, MD, MPH[†,¶,ll]

TOOLs

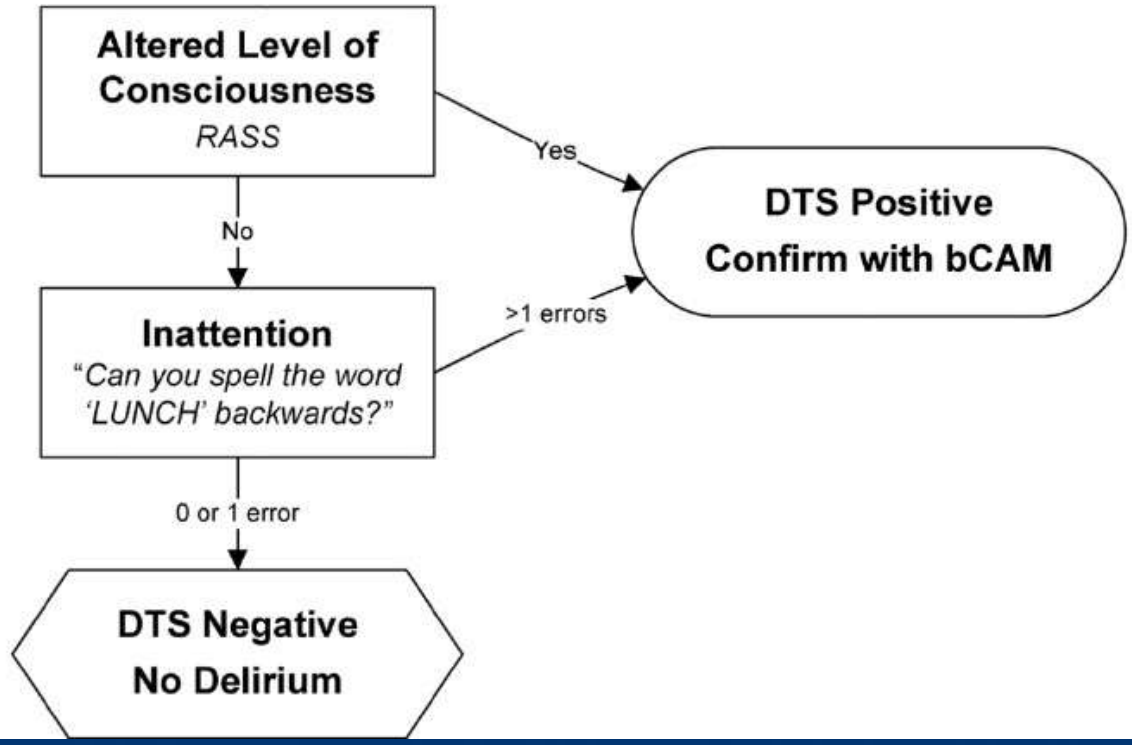
Step 2: Brief Confusion Assessment Method

Confirmation: Highly Specific



Step 1: Delirium Triage Screen

Rule-out Screen: Highly Sensitive



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		TP	FN	TN	FP	Sensitivity (95%CI)	Specificity (95%CI)
DTS	Physician	49	1	195	161	98.0% (89.5% – 99.5%)	54.8% (49.6% – 59.9%)
	RA	49	1	200	156	98.0% (89.5% – 99.5%)	56.2% (51.0% – 61.3%)
	% Concordance between Physician and RA = 89.4% (95%CI: 86.0% – 92.0 Kappa = 0.79 (95%CI: 0.73 – 0.85)						
bCAM	Physician	42	8	341	15	84.0% (71.5% – 91.7%)	95.8% (93.2% – 97.4%)
	RA	39	11	345	11	78.0% (64.8% – 87.2%)	96.9% (94.6% – 98.3%)
	% Concordance between Physician and RA = 97.3% (95%CI: 95.2% – 98.5 Kappa = 0.88 (95%CI: 0.81 – 0.95)						
Combined	RA DTS + Physician bCAM	42	8	341	15	84.0% (71.5% – 91.7%)	95.8% (93.2% – 97.4%)
	RA DTS + RA bCAM	39	11	346	10	78.0% (64.8% – 87.2%)	97.2% (94.9% – 98.5%)
	Physician DTS + Physician bCAM	41	9	341	15	82.0% (69.2% – 90.2%)	95.8% (93.2% – 97.4%)

Jin H. Han_Diagnosing Delirium in Older Emergency Department Patients_Validity and Reliability of the Delirium Triage Screen and the Brief Confusion Assessment Method_Ann Emerg Med. 2013.pdf

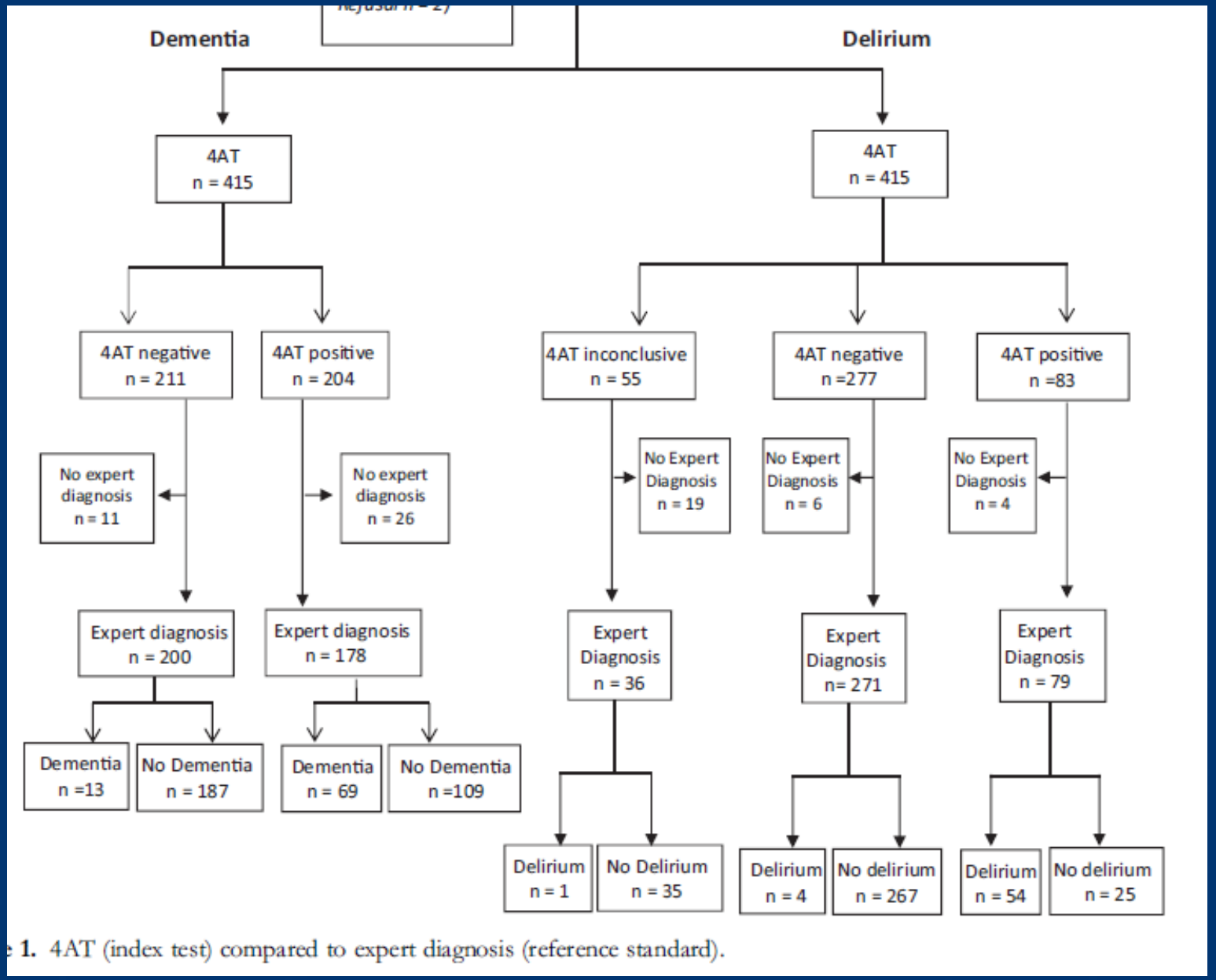
TOOLs

Age and Ageing 2018; **47:** 61–68
doi: 10.1093/ageing/afx149
Published electronically 1 September 2017

Validation of the 6-Item Cognitive Impairment Test and the 4AT test for combined delirium and dementia screening in older Emergency Department attendees

Dawn O'Sullivan[1], Noeleen Brady[1], Edmund Manning[1], Emma O'Shea[1], Síle O'Grady[2], Niamh O 'Regan[1], Suzanne Timmons[1]

TOOLs



1. 4AT (index test) compared to expert diagnosis (reference standard).

DAWN O'SULLIVAN Validation of the 6-Item Cognitive Impairment Test and the 4AT test for combined delirium and dementia screening in older Emergency Department attendees_Age and Ageing 2018

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Family Identification of Delirium in the Emergency Department in patients with and without Dementia: Validity of the FAM-CAM

Tanya Mailhot, PhD[1], Chad Darling, MD MSc[2], Jillian Ela, BS[3], Yelena Malyuta, BS[4], Sharon K Inouye, MD MPH[5,*], Jane Saczynski, PhD[6,*]

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FAM-CAM

Family Confusion Assessment Method (FAM-CAM)

For Research and Clinical Staff

Evaluator:

Caregiver/Informant: **Date:**

Patient: **Time:**

[Screening for an appropriate caregiver is recommended: See Instructions]

Circle the answer to each question

These questions are intended to identify changes to [family member's name] thinking, concentration, and alertness during recent days. Please stop me at any time if you do not understand the questions.

1. I'd like you to think about the past [month/week/day]*. During this [month/week/day]*, have you noticed any changes in his/her thinking or concentration, such as being less attentive, appearing confused or disoriented (not knowing where he/she was), behaving inappropriately, or being extremely sleepy all day?	Yes	No	Don't Know
* Adjust time frame as appropriate for your purposes			
2. Did he/she have difficulty focusing attention, for example, being easily distracted or having trouble keeping track of what you were saying at any time?	Yes	No	Don't Know
3. Was his/her speech disorganized, incoherent, rambling, unclear, or illogical at any time?	Yes	No	Don't Know
4. Did he/she seem excessively drowsy or sleepy during the daytime at any time?	Yes	No	Don't Know
5. Was he/she disoriented, for example, thinking he/she was somewhere other than where he/she was, or misjudging the time of day at any time?	Yes	No	Don't Know
6. Did he/she seem to see or hear things which weren't actually present, or seem to mistake what he/she saw or heard for something else at any time?	Yes	No	Don't Know
7. Did he/she behave inappropriately, such as wandering, yelling out, or being combative or agitated at any time?	Yes	No	Don't Know

8. Please tell us more about the changes you noticed in any of the behaviors in #1-7 above.
Record as much detail as possible

_____
_____
_____
_____
_____
_____
_____
_____
_____

9. Were any of the changes (#1-7) present all the time, or did they come and go from day to day?	All the time	Come and go	Don't know	
10. When did these changes first begin? Would you say they began:	Within the last week			
	Between 1 and up to 2 weeks ago			
	Between 2 and up to 4 weeks ago			
	More than 4 weeks ago			
11. Overall, have these changes been getting better, worse, or staying about the same?	Better	Worse	About the Same	Don't Know

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Table 3.

Performance characteristics of the FAM-CAM Overall and Stratified by Dementia

	LR+ (95% CI)	LR− (95% CI)	Sensitivity	Specificity	PPV	NPV	False Negative[a]
			Percentage (95% CI)				*n (%)*
Overall							
FAM-CAM (N=108)	3.4 (1.4, 5.4)	0.5 (0.3, 0.7)	56.7 % (39%, 74%)	83.3 % (75%, 92%)	56.7% (37%, 75%)	83.3% (73%, 91%)	13 (12)
Stratified by dementia							
Dementia (N=55)	2.2 (0.7, 3.6)	0.6 (0.3, 0.9)	60.8% (41%, 81%)	74.3% (59%, 88%)	60.8% (41%, 81%)	74.3% (60%, 89%)	9 (16)
No Dementia (N=53)	5.6 (−1.1, 12.3)	0.6 (0.2, 0.9)	42.8% (6%, 80%)	90.7% (82%, 99%)	42.8% (6%, 80%)	90.7% (82%, 99%)	4 (8)

Mailhot Family Identification of Delirium in the Emergency Department in patients with and without Dementia_Validity of the FAM-CAM J Am Geriatr Soc. 2020

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Clinical outcomes in the 6-months after study enrollment by FAM-CAM delirium status.

Characteristics	Overall *(N=108)*	FAM-CAM *Positive (N=30)*	FAM-CAM *Negative (N=78)*	Adjusted OR* *(95% Confidence Interval)*
Hospital admission	26 (24)	12 (40)	14 (18)	3.24 (1.2, 8.9)
ED Visit	42 (39)	13 (43)	29 (37)	1.11 (0.4, 2.8)
Mortality	6 (6)	4 (13)	2 (3)	6.24 (0.9, 41.0)

Mailhot Family Identification of Delirium in the Emergency Department in patients with and without Dementia_Validity of the FAM-CAM J Am Geriatr Soc. 2020

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Published in final edited form as:
J Am Geriatr Soc. 2020 May ; 68(5): 956–958. doi:10.1111/jgs.16437.

Delirium in the Emergency Department: Moving from tool-based research to system-wide change

Maura Kennedy, MD, MPH[1,2], Ula Hwang, MD, MPH[3,4,5], Jin H. Han, MD, MSc[6,7]

TOOLs

Molti ED sono sovraffollati, ponendo gli operatori sotto un'enorme pressione per contemporaneamente:

- prendersi cura di pazienti gravemente malati o feriti, p
- rendersi cura dei pazienti in boarding
- screening di molte situazioni: ad es la violenza domestica e il rischio di suicidio...

Di conseguenza, gli operatori degli ED potrebbero non avere il tempo sufficiente per eseguire valutazioni approfondite del delirio.

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Maura Kennedy et all. Delirium in the Emergency Department_Moving from tool-based research to system-wide change_J Am Geriatr Soc.2021.

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- Anche se queste valutazioni richiedono da 1 a 2 minuti per essere completate, potrebbero comunque essere troppo ingombranti per essere eseguite di routine in high-volume or overcrowded EDs.
- Fino al 40% degli anziani non è accompagnato, soprattutto quando i pazienti arrivano in ambulanza e/o dalle strutture di assistenza a lungo termine.

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Attenta valutazione

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MANAGEMENT: EVALUETE

La valutazione dovrebbe essere diretta da un'anamnesi mirata:

- Es farmacologica: gli effetti avversi dei farmaci causano comunemente delirio e si stima che siano responsabili dal 12% al 39% del delirio in ambito medico.

Brendel RW, Stern TA. Psychotic symptoms in the elderly. Prim Care Companion J Clin Psychiatry. 2005;7:238–241. [PubMed: 16308581]
Shenvi C, Kennedy M, Austin CA, Wilson MP, Gerardi M, Schneider S. Managing Delirium and Agitation in the Older Emergency Department Patient: The ADEPT Tool. Ann Emerg Med. 2020 Feb;75(2):136-145. doi: 10.1016/j.annemergmed.2019.07.023. Epub 2019 Sep 26. PMID: 31563402; PMCID: PMC7945005.
Kennedy M, Enander RA, Tadiri SP, et al. Delirium risk prediction, healthcare use and mortality of elderly adults in the emergency department. J Am Geriatr Soc. 2014;62:462–469. [PubMed: 24512171]
Alagiakrishnan K, Wiens CA. An approach to drug induced delirium in the elderly. Postgrad Med J. 2004;80:388–393. [PubMed: 15254302]

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MANAGEMENT: EVALUETE

La valutazione dovrebbe essere diretta da un attento esame obiettivo:

- Le infezioni sono la causa più comune di delirio identificata negli studi sulla DE, responsabili dal 30% al 40% dei casi, seguite da disturbi neurologici acuti come ictus ischemico, emorragia intracranica o massa intracranica.
- Ricordiamo manifestazioni insidiose nell'anziano

Brendel RW, Stern TA. Psychotic symptoms in the elderly. Prim Care Companion J Clin Psychiatry. 2005;7:238–241. [PubMed: 16308581]
Shenvi C, Kennedy M, Austin CA, Wilson MP, Gerardi M, Schneider S. Managing Delirium and Agitation in the Older Emergency Department Patient: The ADEPT Tool. Ann Emerg Med. 2020 Feb;75(2):136-145. doi: 10.1016/j.annemergmed.2019.07.023. Epub 2019 Sep 26. PMID: 31563402; PMCID: PMC7945005.
Kennedy M, Enander RA, Tadiri SP, et al. Delirium risk prediction, healthcare use and mortality of elderly adults in the emergency department. J Am Geriatr Soc. 2014;62:462–469. [PubMed: 24512171]
Alagiakrishnan K, Wiens CA. An approach to drug induced delirium in the elderly. Postgrad Med J. 2004;80:388–393. [PubMed: 15254302]

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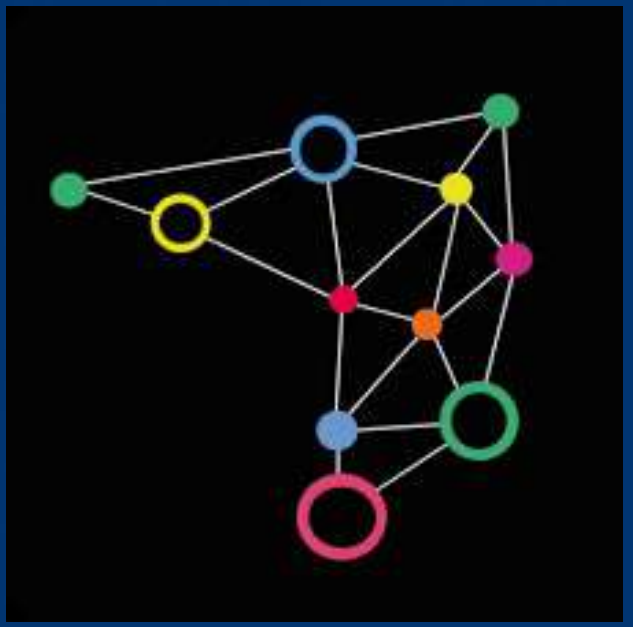
MANAGEMENT: EVALUETE

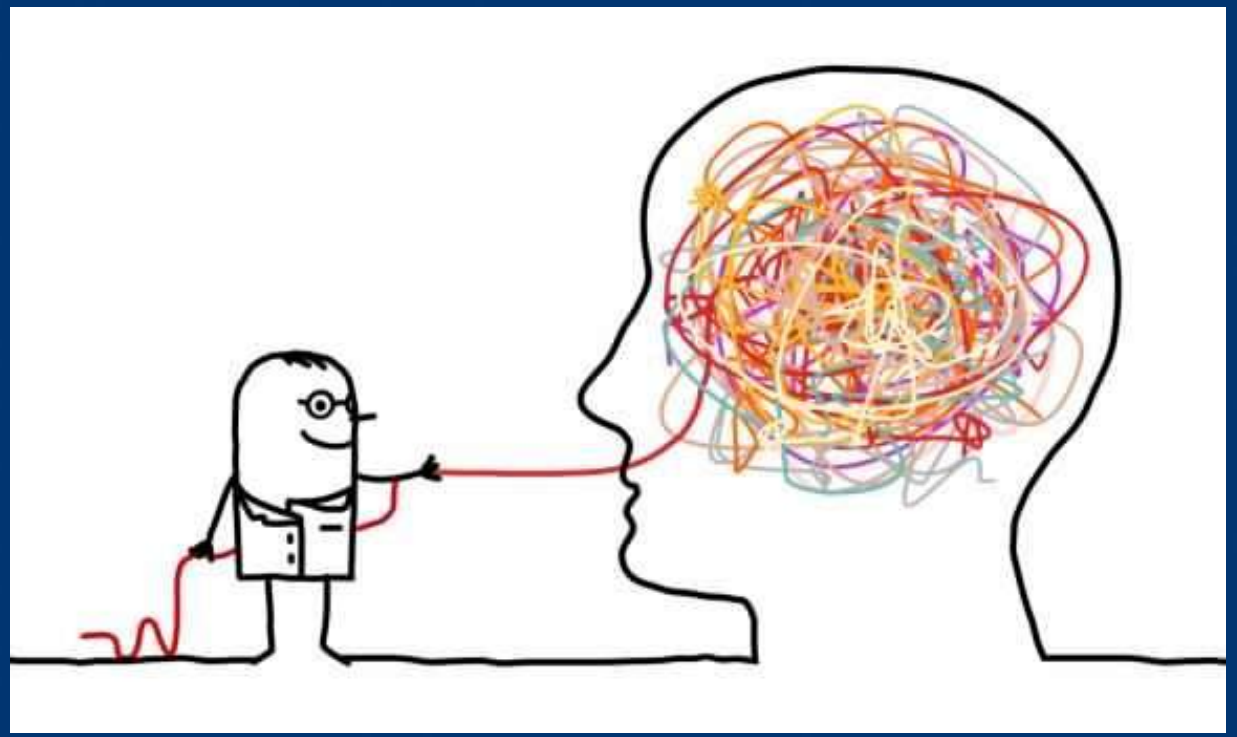
- Il delirio è anche spesso multifattoriale.

Ad esempio, un paziente con un'infezione del tratto urinario può manifestare delirio a causa dell'infezione, ma possono contribuire anche altri fattori di composizione come disidratazione, dolore, nuovi farmaci antibiotici e cambiamento dell'ambiente.



Shenvi C, Kennedy M, Austin CA, Wilson MP, Gerardi M, Schneider S. Managing Delirium and Agitation in the Older Emergency Department Patient: The ADEPT Tool. Ann Emerg Med. 2020 Feb;75(2):136-145. doi: 10.1016/j.annemergmed.2019.07.023. Epub 2019 Sep 26. PMID: 31563402; PMCID: PMC7945005.
Inouye SK, Westendorp RG, Saczynski JS. Delirium in elderly people. Lancet. 2014;383:911–922. [PubMed: 23992774]

TERAPIA



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Terapia

Special Article

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

Juliana Barr, MD, FCCM[1]; Gilles L. Fraser, PharmD, FCCM[2]; Kathleen Puntillo, RN, PhD, FAAN, FCCM[3]; E. Wesley Ely, MD, MPH, FACP, FCCM[4]; Céline Gélinas, RN, PhD[5]; Joseph F. Dasta, MSc, FCCM, FCCP[6]; Judy E. Davidson, DNP, RN[7]; John W. Devlin, PharmD, FCCM, FCCP[8]; John P. Kress, MD[9]; Aaron M. Joffe, DO[10]; Douglas B. Coursin, MD[11]; Daniel L. Herr, MD, MS, FCCM[12]; Avery Tung, MD[13]; Bryce R. H. Robinson, MD, FACS[14]; Dorrie K. Fontaine, PhD, RN, FAAN[15]; Michael A. Ramsay, MD[16]; Richard R. Riker, MD, FCCM[17]; Curtis N. Sessler, MD, FCCP, FCCM[18]; Brenda Pun, MSN, RN, ACNP[19]; Yoanna Skrobik, MD, FRCP[20]; Roman Jaeschke, MD[21]

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Delirium prevention
nei pazienti adulti in ICU

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

Juliana Barr, MD, FCCM[1]; Gilles L. Fraser, PharmD, FCCM[2]; Kathleen Puntillo, RN, PhD, FAAN, FCCM[3];

i. mobilizzazione precoce dei pazienti adulti in terapia intensiva quando possibile per ridurre l'incidenza e la durata del delirio (+1B).

ii. Non forniamo alcuna raccomandazione per l'utilizzo di un protocollo farmacologico di prevenzione del delirio (0,C).

iii. Non forniamo alcuna raccomandazione per l'utilizzo di un protocollo combinato di prevenzione del delirio non farmacologico e farmacologico (0,C).

iv. Non suggeriamo somministrazione di aloperidolo o antipsicotici atipici per prevenire il delirio

v. Non forniamo alcuna raccomandazione per l'uso della dexmedetomidina per prevenire il delirio

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Delirium TERAPIA

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

Juliana Barr, MD, FCCM[1]; Gilles L. Fraser, PharmD, FCCM[2]; Kathleen Puntillo, RN, PhD, FAAN, FCCM[3];

- i. Non ci sono prove pubblicate che il trattamento con aloperidolo riduca la durata del delirio nei pazienti adulti in terapia intensiva (nessuna evidenza).
- ii. Gli antipsicotici atipici possono ridurre la durata del delirio nei pazienti adulti in terapia intensiva (C).
- iii. Non è consigliabile somministrare rivastigmina per ridurre la durata del delirio nei pazienti in terapia intensiva (–1B).
- iv. Non suggeriamo l'uso di antipsicotici in pazienti a rischio significativo di torsione di punta (cioè, pazienti con prolungamento dell'intervallo QTc al basale, pazienti che ricevono farmaci concomitanti noti per prolungare l'intervallo QTc o pazienti con una storia di questa aritmia) (–2C) .

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Terapia farmacologica nel delirium post traumatico

Table 1. **Summary of major drug classes investigated for management of post-traumatic delirium or agitation. AChE: acetylcholinesterase; AVP: Avenir Pharmaceuticals; CBZ: carbamazepine; D2: dopamine type-2 receptor; GABA-A: gamma-aminobutyric acid type-A receptor; ROS: reactive oxygen species; UTI: urinary tract infection.**

Drug Class	Possible Mechanism(s)	Potential Benefits	Risks/Cautions	Recommended?
Beta-Blockers (*e.g.* propranolol, pindolol)	Beta-adrenergic receptor antagonism	Modulation of somatic symptoms related to sympathetic drive	Hypotension Bradycardia	Yes
Antiseizure drugs (valproate, carbamazepine)	Inhibition of arachidonic acid neurotransmission	Mood stabilization Improved behavioral disruption and confusion	Worse neurobehavioral performance on medication (CBZ)	Yes
Psychostimulants (methylphenidate, donepezil, AVP-786)	Multiple	Improved attention, memory Improved disinhibition	Decreased appetite (methylphenidate) Increased bowel frequency (donepezil) Falls, UTI, Somnolence (AVP-786)	Not currently
Flavonoids (*e.g.* querccetin, xanthohumol)	AChE inhibition Decreased concentration of intracellular ROS	Improved behavior Possible neuroprotective effect	Animal studies only	Not currently

ROBERTSON_Challenges of Delirium Management in Patients with Traumatic Brain_Current Neuropharmacology 2021

Terapia farmacologica nel delirium post traumatico

Table 1. Summary of major drug classes investigated for management of post-traumatic delirium or agitation. AChE: acetylcholinesterase; AVP: Avenir Pharmaceuticals; CBZ: carbamazepine; D2: dopamine type-2 receptor; GABA-A: gamma-aminobutyric acid type-A receptor; ROS: reactive oxygen species; UTI: urinary tract infection.

Antipsychotics (*e.g.* haloperidol, ziprasidone)	D2 receptor antagonism	Improve psychosis Sedation	Longer duration of post-traumatic agitation Extrapyramidal symptoms Worse cognitive outcomes	No
Anti-inflammatory drugs and Immuno-modulators (*e.g.* meloxicam, methylprednisolone)	Modulation of inflammatory signal cascade	Improved behavior	Increased mortality	No
Benzodiazepines (*e.g.* lorazepam, alprazolam)	GABA-A agonism	Sedation Anxiolysis	Paradoxical excitation Slowed neuronal repair processes Worse TBI outcomes	No

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ROBERTSON_Challenges of Delirium Management in Patients with Traumatic Brain_Current Neuropharmacology 2021

MANAGEMENT: TREAT

- riduzione dell'escalation verbale
- distrazione
- rassicurazione
- registrazioni video dei membri della famiglia
- Evitare le contenzioni

Shenvi C, Kennedy M, Austin CA, Wilson MP, Gerardi M, Schneider S. Managing Delirium and Agitation in the Older Emergency Department Patient: The ADEPT Tool. Ann Emerg Med. 2020 Feb;75(2):136-145. doi: 10.1016/j.annemergmed.2019.07.023. Epub 2019 Sep 26. PMID: 31563402; PMCID: PMC7945005.

Wilson MP, Nordstrom K, Vilke GM. The agitated patient in the emergency department. Curr Emerg Hosp Med Rep. 2015;3:188–194.

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MANAGEMENT: TREAT

- non evidenza di differenze tra aloperidolo, olanzapina o risperidone a basso dosaggio
- consenso attuale è per l'uso di olanzapina o risperidone a basso dosaggio
- Start low and go slow

Shenvi C, Kennedy M, Austin CA, Wilson MP, Gerardi M, Schneider S. Managing Delirium and Agitation in the Older Emergency Department Patient: The ADEPT Tool. Ann Emerg Med. 2020 Feb;75(2):136-145. doi: 10.1016/j.annemergmed.2019.07.023. Epub 2019 Sep 26. PMID: 31563402; PMCID: PMC7945005.

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MANAGEMENT: TREAT

- Olanzapina e risperidone hanno effetti minori sull'intervallo QT, ma possono essere associati ad altri effetti avversi, come l'ipotensione ortostatica
- Attenzione ai pazienti geriatrici in polifarmacoterapia per possibile prolungamento dell'intervallo QT

Shenvi C, Kennedy M, Austin CA, Wilson MP, Gerardi M, Schneider S. Managing Delirium and Agitation in the Older Emergency Department Patient: The ADEPT Tool. Ann Emerg Med. 2020 Feb;75(2):136-145. doi: 10.1016/j.annemergmed.2019.07.023. Epub 2019 Sep 26. PMID: 31563402; PMCID: PMC7945005.
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MANAGEMENT: TREAT

- Sebbene gli antipsicotici possano aiutare a gestire i sintomi del delirio o dell'agitazione, le meta-analisi non dimostrano alcun beneficio in termini di esiti quali durata dei sintomi, gravità, durata della degenza ospedaliera, disposizione luogo, o mortalità.

Shenvi C, Kennedy M, Austin CA, Wilson MP, Gerardi M, Schneider S. Managing Delirium and Agitation in the Older Emergency Department Patient: The ADEPT Tool. Ann Emerg Med. 2020 Feb;75(2):136-145. doi: 10.1016/j.annemergmed.2019.07.023. Epub 2019 Sep 26. PMID: 31563402; PMCID: PMC7945005.

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Inouye SK, Marcantonio ER, Metzger ED. Doing damage in delirium: the hazards of antipsychotic treatment in elderly people. Lancet Psychiatry. 2014;1:312–315. [PubMed: 25285270]

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Inouye SK, Bogardus ST, Charpentier PA, et al. A multicomponent intervention to prevent delirium in hospitalized older patients. N Engl J Med. 1999;340:669–676. [PubMed: 10053175]

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MANAGEMENT: TREAT

- Non interrompere bruscamente trp di lunga data di benzodiazepine.
- Le benzodiazepine dovrebbero essere evitate nei soggetti che non le stanno già assumendo perché aumenta il rischio di sedazione prolungata, agitazione paradossale e peggioramento del delirio.

Shenvi C, Kennedy M, Austin CA, Wilson MP, Gerardi M, Schneider S. Managing Delirium and Agitation in the Older Emergency Department Patient: The ADEPT Tool. Ann Emerg Med. 2020 Feb;75(2):136-145. doi: 10.1016/j.annemergmed.2019.07.023. Epub 2019 Sep 26. PMID: 31563402; PMCID: PMC7945005.
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Managing Delirium and Agitation in the Older Emergency Department Patient: The ADEPT Tool

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MANAGEMENT

La gestione dovrebbe concentrarsi:

- sul trattamento del disturbo sottostante
- su misure proattive per prevenire il peggioramento dei sintomi
- sul trattamento dell'agitazione (ATTENZIONE ai potenziali effetti avversi).

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MANAGEMENT

- escludere condizioni minacciose per la vita
- escludere condizioni da trattare immediatamente:
  - Ipossia
  - Ipoglicemia
  - STEMI
- assicurare la sicurezza del paziente e del personale

Brendel RW, Stern TA. Psychotic symptoms in the elderly. Prim Care Companion J Clin Psychiatry. 2005;7:238–241. [PubMed: 16308581]
Shenvi C, Kennedy M, Austin CA, Wilson MP, Gerardi M, Schneider S. Managing Delirium and Agitation in the Older Emergency Department Patient: The ADEPT Tool. Ann Emerg Med. 2020 Feb;75(2):136-145. doi: 10.1016/j.annemergmed.2019.07.023. Epub 2019 Sep 26. PMID: 31563402; PMCID: PMC7945005.

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MANAGEMENT: ASSESS

- stabilire lo stato mentale di base del paziente e la cronostoria di eventuali cambiamenti
- processo che in genere richiede il contatto di un familiare o di un caregiver.
- Infezioni, disturbi neurologici e disturbi metabolici o elettrolitici sono 3 delle cause più comuni di alterazioni acute dello stato mentale tra i pazienti anziani.
- Effetti avversi dei farmaci sono un'altra causa comune.

Brendel RW, Stern TA. Psychotic symptoms in the elderly. Prim Care Companion J Clin Psychiatry. 2005;7:238–241. [PubMed: 16308581]
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MANAGEMENT: ASSESS

Examples
Hypoxia, hypercarbia, hypoglycemia, hyperglycemia, hyponatremia, hyperkalemia
Urinary tract infection, pneumonia, intra-abdominal infections, meningitis/encephalitis, sepsis from other source
Transient ischemic attack, stroke, intracranial hemorrhage, intracranial mass
Anticholinergic medications (including tricyclic antidepressants, antihistamines, muscle relaxants, promethazine, typical antipsychotics, sedative hypnotics (benzodiazepines, zolpidem), corticosteroids, polypharmacy (considered ≥4 medications), salicylate toxicity
Intoxication with alcohol or substance use, alcohol or benzodiazepine withdrawal
Hyper- or hypoglycemia, hyper- or hyponatremia, dehydration, acute kidney injury, uremia, diabetic ketoacidosis
Acute coronary syndrome, dissection, hypoxia, hypotension, anemia
New or unfamiliar environment, lack of sleep, lack of hearing or vision aids
Pain, urinary retention

MANAGEMENT: DIAGNOSE

- Utilizzare i TOOLs
- Colloquio con care giver

MANAGEMENT: EVALUETE

La valutazione dovrebbe essere diretta da un'anamnesi mirata:

- Es farmacologica: gli effetti avversi dei farmaci causano comunemente delirio e si stima che siano responsabili dal 12% al 39% del delirio in ambito medico.

Brendel RW, Stern TA. Psychotic symptoms in the elderly. Prim Care Companion J Clin Psychiatry. 2005;7:238–241. [PubMed: 16308581]
Shenvi C, Kennedy M, Austin CA, Wilson MP, Gerardi M, Schneider S. Managing Delirium and Agitation in the Older Emergency Department Patient: The ADEPT Tool. Ann Emerg Med. 2020 Feb;75(2):136-145. doi: 10.1016/j.annemergmed.2019.07.023. Epub 2019 Sep 26. PMID: 31563402; PMCID: PMC7945005.
Kennedy M, Enander RA, Tadiri SP, et al. Delirium risk prediction, healthcare use and mortality of elderly adults in the emergency department. J Am Geriatr Soc. 2014;62:462–469. [PubMed: 24512171]
Alagiakrishnan K, Wiens CA. An approach to drug induced delirium in the elderly. Postgrad Med J. 2004;80:388–393. [PubMed: 15254302]

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MANAGEMENT: EVALUETE

La valutazione dovrebbe essere diretta da un attento esame obiettivo:

- Le infezioni sono la causa più comune di delirio identificata negli studi sulla DE, responsabili dal 30% al 40% dei casi, seguite da disturbi neurologici acuti come ictus ischemico, emorragia intracranica o massa intracranica.
- Ricordiamo manifestazioni insidiose nell'anziano

Brendel RW, Stern TA. Psychotic symptoms in the elderly. Prim Care Companion J Clin Psychiatry. 2005;7:238–241. [PubMed: 16308581]
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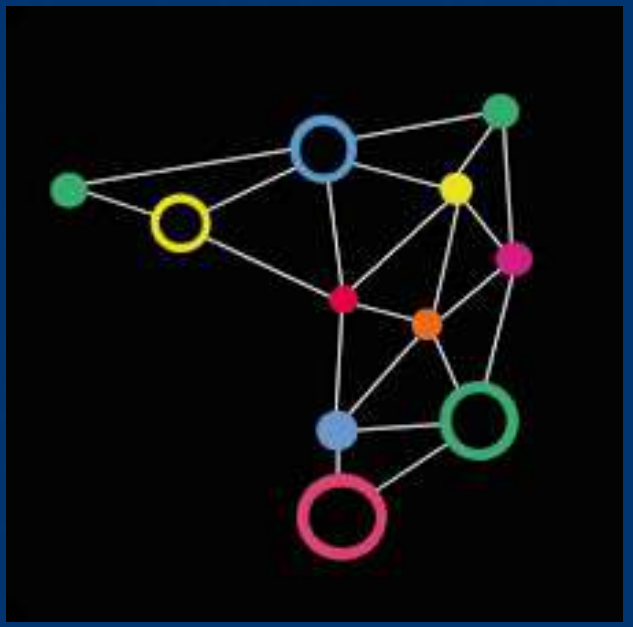
MANAGEMENT: EVALUETE

- Il delirio è anche spesso multifattoriale.

Ad esempio, un paziente con un'infezione del tratto urinario può manifestare delirio a causa dell'infezione, ma possono contribuire anche altri fattori di composizione come disidratazione, dolore, nuovi farmaci antibiotici e cambiamento dell'ambiente.



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Inouye SK, Westendorp RG, Saczynski JS. Delirium in elderly people. Lancet. 2014;383:911–922. [PubMed: 23992774]

MANAGEMENT: EVALUETE

- Sebbene ogni valutazione debba essere personalizzata in base al paziente, la maggior parte dei pazienti deve ricevere un ECG, una esame emocromocitometrico, un pannello metabolico, una glicemia point of care e un'analisi delle urine con coltura.

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MANAGEMENT: PREVENT

- La maggior parte dei PS sono ambienti affollati, luminosi, rumorosi e potenzialmente deliriogeni, specialmente per i pazienti più anziani.

Tuttavia..

Shenvi C, Kennedy M, Austin CA, Wilson MP, Gerardi M, Schneider S. Managing Delirium and Agitation in the Older Emergency Department Patient: The ADEPT Tool. Ann Emerg Med. 2020 Feb;75(2):136-145. doi: 10.1016/j.annemergmed.2019.07.023. Epub 2019 Sep 26. PMID: 31563402; PMCID: PMC7945005.
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MANAGEMENT: PREVENT

Misure che possono essere intraprese :

- trattamento della condizione sottostante
- gestione del dolore con farmaci non sedativi e non oppioidi.
- trattamento di nausea, vomito e costipazione
- Proseguire trp domiciliare correttamente per prevenire l'esacerbazione dei problemi medici di base..

Shenvi C, Kennedy M, Austin CA, Wilson MP, Gerardi M, Schneider S. Managing Delirium and Agitation in the Older Emergency Department Patient: The ADEPT Tool. Ann Emerg Med. 2020 Feb;75(2):136-145. doi: 10.1016/j.annemergmed.2019.07.023. Epub 2019 Sep 26. PMID: 31563402; PMCID: PMC7945005.

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MANAGEMENT: PREVENT

- Idratazione
- cibo (salvo controindicazioni)
- accesso e assistenza alla toilette
- assistenza o ausili per la mobilità
- Utilizzo dispositivi audio-assistiti

Shenvi C, Kennedy M, Austin CA, Wilson MP, Gerardi M, Schneider S. Managing Delirium and Agitation in the Older Emergency Department Patient: The ADEPT Tool. Ann Emerg Med. 2020 Feb;75(2):136-145. doi: 10.1016/j.annemergmed.2019.07.023. Epub 2019 Sep 26. PMID: 31563402; PMCID: PMC7945005.
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MANAGEMENT: PREVENT

- Se non necessari dal punto di vista medico, devono essere evitati:
  - atti che determinano allettamento, compresi i bracciali per la pressione sanguigna, gli elettrocateteri del monitor, le infusioni endovenose continue e i cateteri vescicali.
- Un numero maggiore di vincoli o ancoraggi, immobilizzazione e uso di cateteri vescicali sono associati a tassi più elevati di delirio

Shenvi C, Kennedy M, Austin CA, Wilson MP, Gerardi M, Schneider S. Managing Delirium and Agitation in the Older Emergency Department Patient: The ADEPT Tool. Ann Emerg Med. 2020 Feb;75(2):136-145. doi: 10.1016/j.annemergmed.2019.07.023. Epub 2019 Sep 26. PMID: 31563402; PMCID: PMC7945005.
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MANAGEMENT: PREVENT

- Fornire orologi con caratteri grandi e altri segnali visivi sulla data e sul luogo
- incoraggiare i familiari e gli operatori sanitari che dimostrano una presenza rassicurante a rimanere al capezzale.
- volontari per calmare i pazienti

Shenvi C, Kennedy M, Austin CA, Wilson MP, Gerardi M, Schneider S. Managing Delirium and Agitation in the Older Emergency Department Patient: The ADEPT Tool. Ann Emerg Med. 2020 Feb;75(2):136-145. doi: 10.1016/j.annemergmed.2019.07.023. Epub 2019 Sep 26. PMID: 31563402; PMCID: PMC7945005.
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MANAGEMENT: PREVENT

- ED-LOS superiore a 10 ore raddoppia il rischio di delirio incidente.
- misure e protocolli che riducano la durata ED-LOS ed evitano il BOARDING.
- Dare priorità al trasferimento dei pazienti più anziani o fragili
- Comunicare da ED la presenza di delirio o agitazione ai reparti. Quando la diagnosi di delirio non viene fatta al pronto soccorso, è anche più probabile che non venga fatta nemmeno nei reparti

Shenvi C, Kennedy M, Austin CA, Wilson MP, Gerardi M, Schneider S. Managing Delirium and Agitation in the Older Emergency Department Patient: The ADEPT Tool. Ann Emerg Med. 2020 Feb;75(2):136-145. doi: 10.1016/j.annemergmed.2019.07.023. Epub 2019 Sep 26. PMID: 31563402; PMCID: PMC7945005.
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MANAGEMENT: TREAT

- riduzione dell'escalation verbale
- distrazione
- rassicurazione
- registrazioni video dei membri della famiglia
- Evitare le contenzioni

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MANAGEMENT: TREAT

- non evidenza di differenze tra aloperidolo, olanzapina o risperidone a basso dosaggio
- consenso attuale è per l'uso di olanzapina o risperidone a basso dosaggio
- Start low and go slow

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MANAGEMENT: TREAT

- Olanzapina e risperidone hanno effetti minori sull'intervallo QT, ma possono essere associati ad altri effetti avversi, come l'ipotensione ortostatica
- Attenzione ai pazienti geriatrici in polifarmacoterapia per possibile prolungamento dell'intervallo QT

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MANAGEMENT: TREAT

- Sebbene gli antipsicotici possano aiutare a gestire i sintomi del delirio o dell'agitazione, le meta-analisi non dimostrano alcun beneficio in termini di esiti quali durata dei sintomi, gravità, durata della degenza ospedaliera, disposizione luogo, o mortalità.

Shenvi C, Kennedy M, Austin CA, Wilson MP, Gerardi M, Schneider S. Managing Delirium and Agitation in the Older Emergency Department Patient: The ADEPT Tool. Ann Emerg Med. 2020 Feb;75(2):136-145. doi: 10.1016/j.annemergmed.2019.07.023. Epub 2019 Sep 26. PMID: 31563402; PMCID: PMC7945005.

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Erstad BL, Patanwala AE. Ketamine for analgosedation in critically ill patients. J Crit Care. 2016;35:145–149. [PubMed: 27481750]

Inouye SK, Bogardus ST, Charpentier PA, et al. A multicomponent intervention to prevent delirium in hospitalized older patients. N Engl J Med. 1999;340:669–676. [PubMed: 10053175]

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MANAGEMENT: TREAT

- Non interrompere bruscamente trp di lunga data di benzodiazepine.
- Le benzodiazepine dovrebbero essere evitate nei soggetti che non le stanno già assumendo perché aumenta il rischio di sedazione prolungata, agitazione paradossale e peggioramento del delirio.

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Lonergan E, Luxenberg J, Areosa Sastre A. Benzodiazepines for delirium. Cochrane Database Syst Rev. 2009;4:CD006379.
American Geriatrics Society 2015 Beers Criteria Update Expert Panel. American Geriatrics Society 2015 updated Beers criteria for potentially inappropriate medication use in older adults. J Am Geriatr Soc. 2015;63:2227–2246. [PubMed: 26446832]

MANAGEMENT: TREAT

- La difenidramina non deve essere utilizzata per il trattamento degli anziani. I suoi effetti avversi anticolinergici possono portare a un peggioramento del delirio e a una sedazione prolungata.
- Non ci sono sostanziali prove a favore o contro la ketamina a dose subdissociativa per l'agitazione negli anziani. (efficace ma limitata da effetti avversi, necessità di ulteriori ricerche)

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