CARDIO-GERIATRIA NEI SETTING RESIDENZIALI

9 MAGGIO 2025

ore 15.00 | Sala BENACO ASC Cremona Solidale

Focus sulla gestione dello scompenso cardiaco e della fibrillazione atriale

Diagnosi: dalla dispnea alla definizione eziologica.

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Fondazione IRCCS San Gerardo dei Tintori

Sistema Socio Sanitario Regione Lombardia

Sommario

- Le sfide cliniche della dispnea nell’anziano
- Dispnea e scompenso cardiaco in setting residenziali
- Il ruolo degli strumenti POCUS nella definizione eziologica
- Peculiarità sintomatologiche del paziente anziano con HF
- Verso la diagnosi clinica
- Conclusioni

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Dyspnea (literal meaning ‘disordered breathing’) is defined as a “subjective experience of breathing discomfort”

Breathlessness in older adults: What we know and what we still need to know. JAGS 2023

Primo problema:

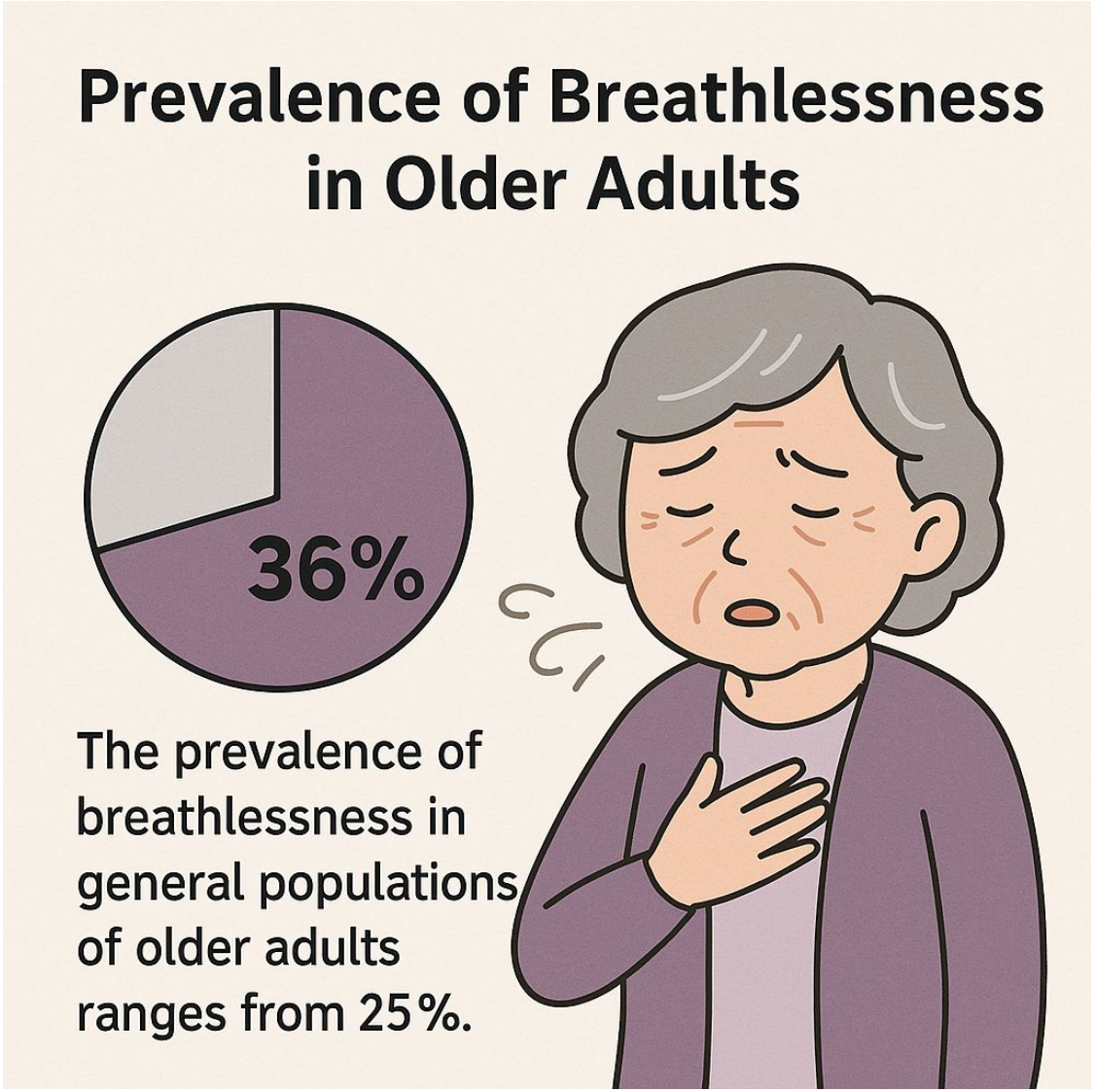
- E’ molto frequente.

▶ QUESTIONARIO MODIFICATO MRC PER LA DISPNEA[a]

Per favore barrare la casella che Vi riguarda / (una sola casella) / (Gradi 0-4)

mMRC Grado 0.	Ho dispnea solo per sforzi intensi.	❑
mMRC Grado 1.	Mi manca il fiato se cammino veloce (o corsa) in piano o in lieve salita.	❑
mMRC Grado 2.	Su percorsi piani cammino più lentamente dei coetanei, oppure ho necessità di fermarmi per respirare quando cammino a passo normale.	❑
mMRC Grado 3.	Ho necessità di fermarmi per respirare dopo aver camminato in piano per circa 100 metri o per pochi minuti.	❑
mMRC Grado 4.	Mi manca il fiato a riposo per uscire di casa o per vestirmi/spogliarmi.	❑

[a]*Fletcher CM. BMJ 1960; 2:1662.*



Breathlessness in older adults: What we know and what we still need to know. JAGS 2023

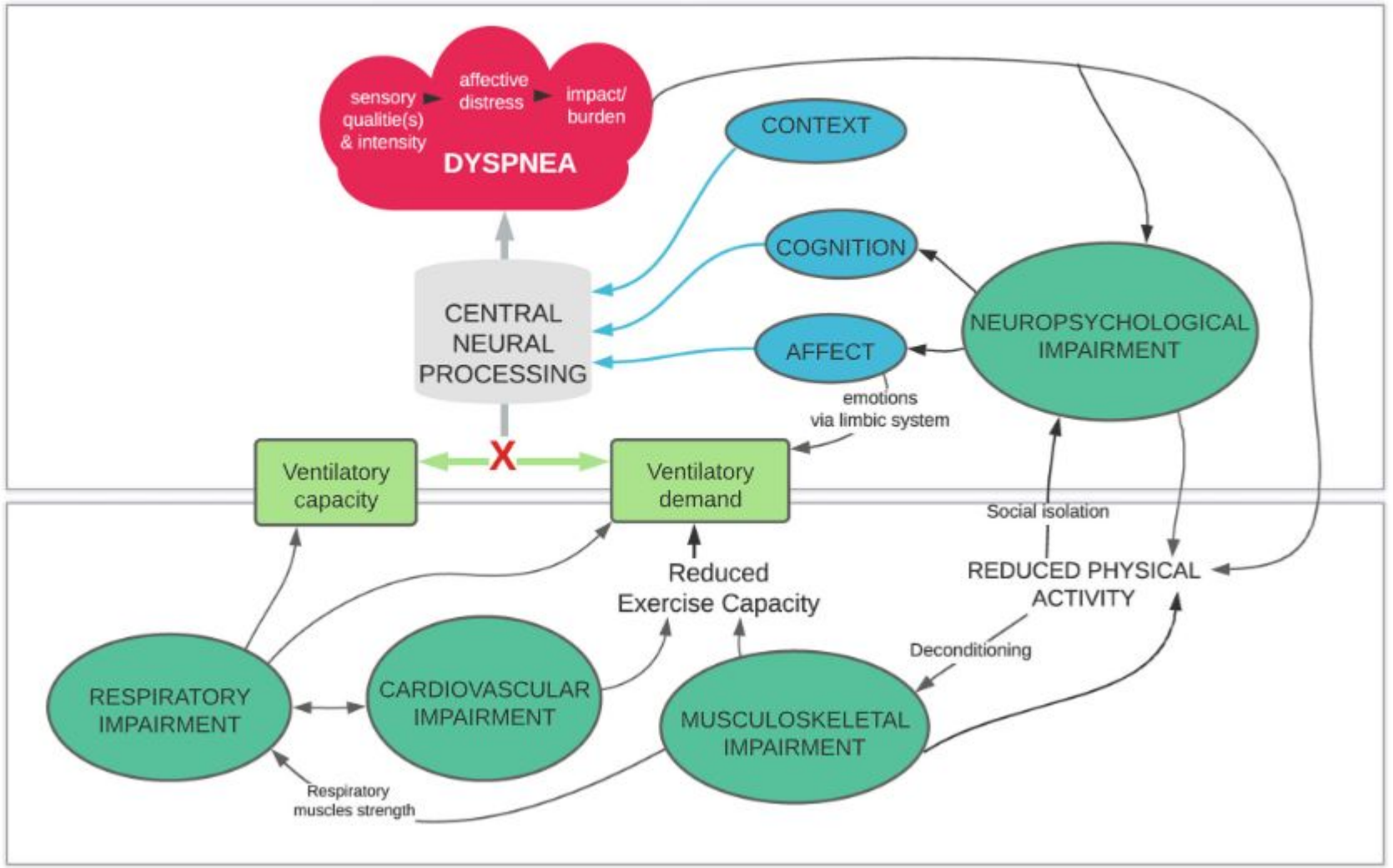
Secondo problema:

- E' multifattoriale.

TABLE 2 Studies on factors associated with breathlessness in community-dwelling older adults.

Country & year of study	Participants	Prevalence of MRC ≥3	Associated factors[a]
USA 2011–2013[17]	$n = 4342$ age ≥65 years	13.2%	• Restrictive spirometric pattern 2.11 (1.61–2.76) • Obstructive spirometric pattern 1.69 (1.33–2.14) • Pulmonary hypertension 1.47 (1.08–2.00) • LV hypertrophy 1.30 (1.01–1.67) • Lower extremity weakness 2.10 (1.53–2.88) • Upper extremity weakness 1.27 (0.98–1.64) • Depression symptoms 2.41 (1.59–3.66) • Obesity 2.22 (1.75–2.81) • Renal dysfunction 1.29 (1.01–1.65) • Anemia 1.59 (1.21–2.07)
Belgium 2008–2009[9]	$n = 567$ age ≥80 years	29.9%	• Low FEV1 3.19 (1.90–5.34) • Low physical performance 2.49 (1.50–4.12) • High NTproBNP 2.36 (1.45–3.85) • Overweight/obese 2.20 (1.29–3.75) • High GDS-15 score 1.87 (1.09–4.22)
USA 1989–1990[16]	$n = 4413$ age ≥65 years	17.5%[b]	• Low FEV1 2.88 (2.37–3.49) • Respiratory muscle weakness 1.60 (1.20–2.14) • LV ejection fraction<45% 2.12 (1.43–3.16) • Diastolic dysfunction 1.32 (1.08–1.61) • Grip weakness 1.31 (1.06–1.61) • Single chair stand 2.10 (1.61–2.73) • Depressive symptoms 2.02 (1.26–3.23) • Anxiety symptoms 1.54 (1.22–1.93) • Cardiovascular medication 1.65 (1.35–2.01) • Psychoactive medication 1.71 (1.35–2.15) • Obesity 2.07 (1.67–2.55)
UK, year not reported[13]	$n = 1169$ age ≥70 years	32.3%	Prevalence in participants with versus without dyspnea: • Reversible airway disease 19.3 versus 10.3% • COPD 19.3 versus 7% • LV systolic dysfunction 17.1 versus 6.04% • Obesity 33.9 versus 23.0% • High depression & anxiety score 62.4% versus 36.4%

Breathlessness in older adults: What we know and what we still need to know. JAGS 2023



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Terzo problema:

- E’ nascosta

Dyspnea is a multidimensional sensation with at least three main qualities. **These are:**

- **breathing effort,**
- **chest tightness,**
- **and air hunger.**

Interestingly, despite these different afferent systems, the different qualities of dys**pnea seem to be similarly affected by older age.**

Summary: Aging and Perception of Dyspnea

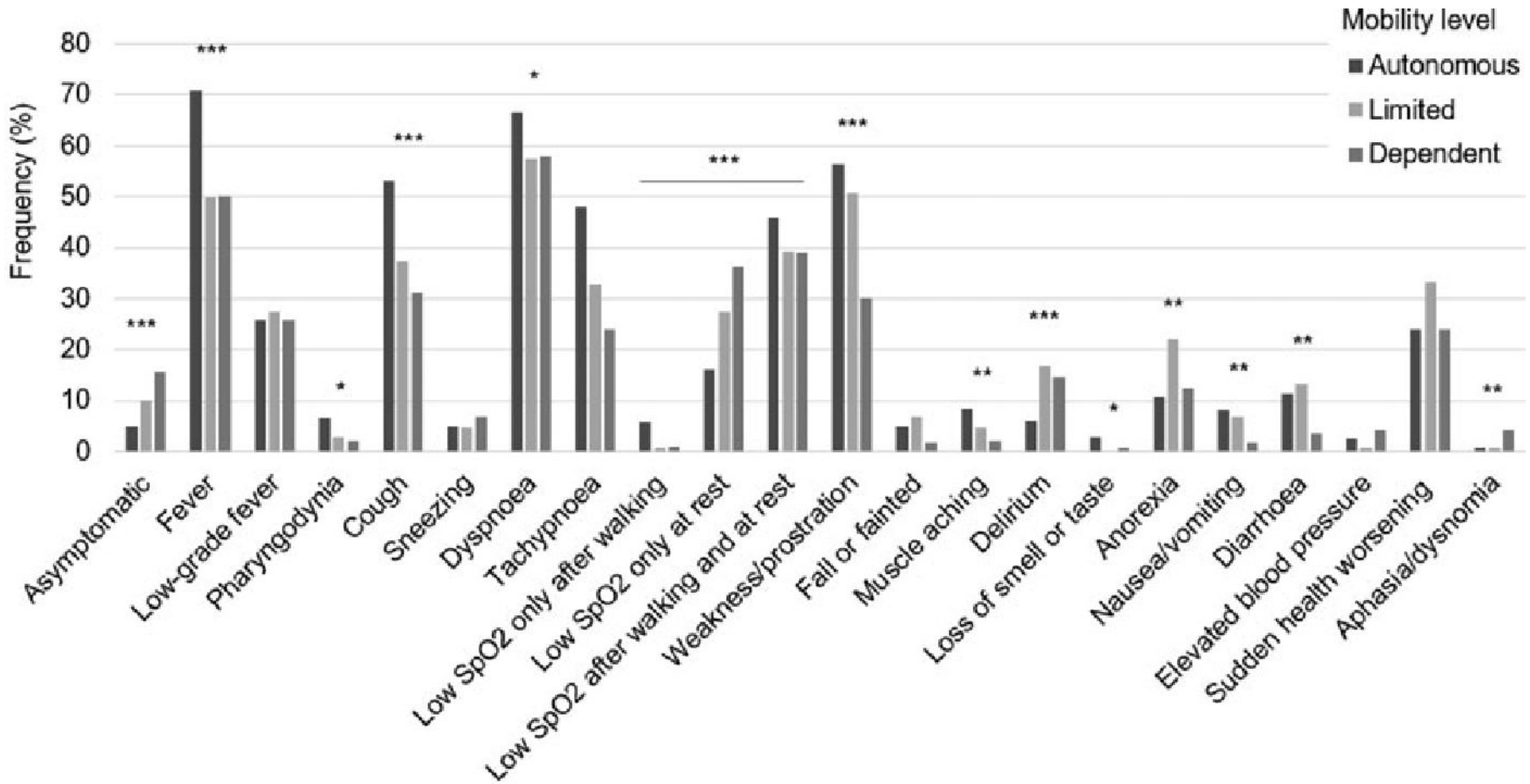
- **Increased perception threshold:** older adults (healthy and asthmatic) perceive respiratory effort from external loads less
- **Blunted response to CO_2:** reduced air hunger during CO_2 rebreathing
- **Asthma and bronchoconstriction:** lower methacholine needed to reduce FEV., but fewer symptoms reported (e.g., chest tightness)
- **COPD and silent hypercapnia:** COPD patients are often hypercapnic but report little air hunger
- **Conclusion:** Aging profoundly alters dyspnea perseption via complex peripheral afferent mechanis-

Hegendõrfer E. Degryse J-M. Breathlessness in older adults: What we know and what we still need to know. / Am Geriatr Soc. 2023, 7117): 2082-2095. doi:10.111/jgs.18326

COVID-19 as a Paradigmatic Model of the Heterogeneous Disease Presentation in Older People: Data from the GeroCovid Observational Study

Caterina Trevisan,[1,2] Francesca Remelli,[1] Stefano Fumagalli,[3,4] Enrico Mossello,[3,4] Chukwuma Okoye,[5] Giuseppe Bellelli,[6,7] Alessandra Coin,[2] Alba Malara,[8] Pietro Gareri,[9] Fabio Monzani,[5] Susanna Del Signore,[10] Gianluca Zia,[10] Raffaele Antonelli Incalzi,[11] and Stefano Volpato[1]; and the GeroCovid Acute Ward Working Group*

I classici sintomi respiratori si «confondono» con l'incrementare della disabilità



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Still, the first sign…

3.1 Definition of heart failure

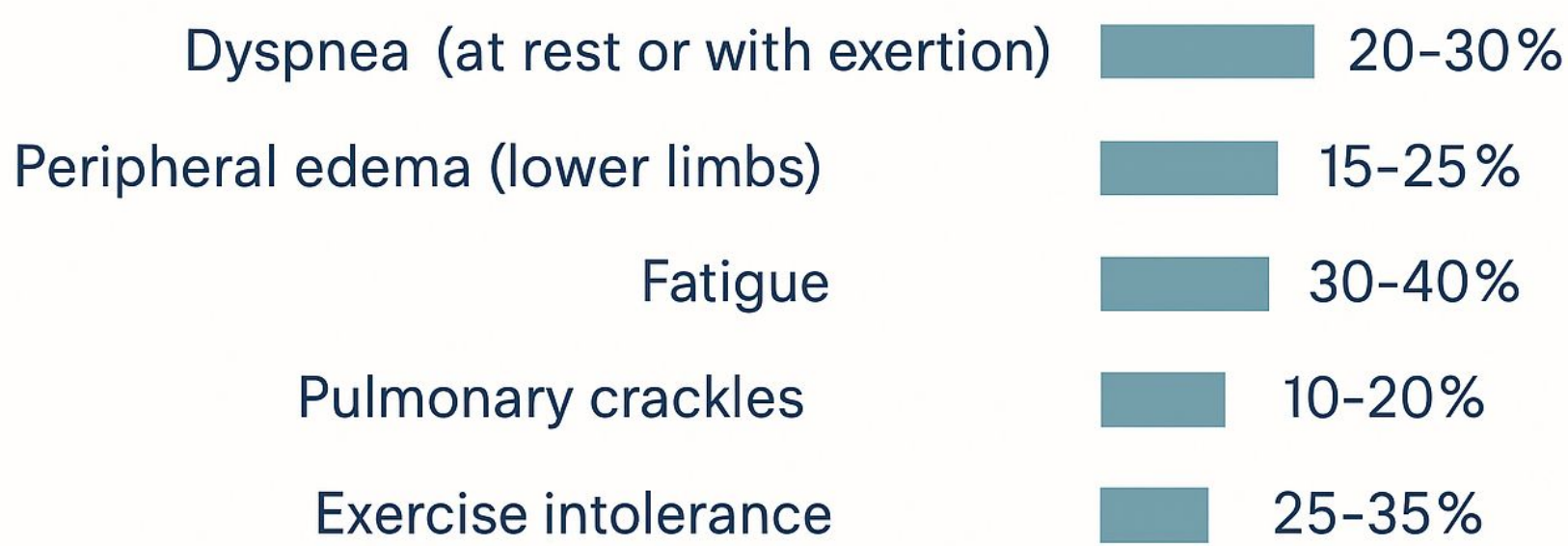
Heart failure is not a single pathological diagnosis, but a clinical syndrome consisting of cardinal symptoms (e.g. breathlessness, ankle swelling, and fatigue) that may be accompanied by signs (e.g. elevated jugular venous pressure, pulmonary crackles, and peripheral oedema). It is due to a structural and/or functional abnormality of the heart that results in elevated intracardiac pressures and/or inadequate cardiac output at rest and/or during exercise.

Identification of the aetiology of the underlying cardiac dysfunction is mandatory in the diagnosis of HF as the specific pathology can determine subsequent treatment. Most commonly, HF is due to myocardial dysfunction: either systolic, diastolic, or both. However, pathology of the valves, pericardium, and endocardium, and abnormalities of heart rhythm and conduction can also cause or contribute to HF.

ESC HF Guidelines, 2021

Prevalence of Heart Failure Symptoms in Older Adults

Even in the absence of a formal diagnosis



Source: Health ABC Study; Rotterdam Study; Hegendörfer E, Degryse J-M. *J Am Geriatr Soc.* 2023

Heart failure in NH

- Prevalence of heart failure in nursing homes varies greatly, with data suggesting rates between 10—45%

- Recent qualitative findings suggest **that nursing home staff lack the knowledge and competency to appropriately care for residents with heart failure,** are unaware of relevant signs and symptoms, do not know how to identify exacerbations, and do not understand the purpose for daily weighing.

Heart failure in nursing homes: A scoping review of educational interventions for optimising care provision. McMahon 2023

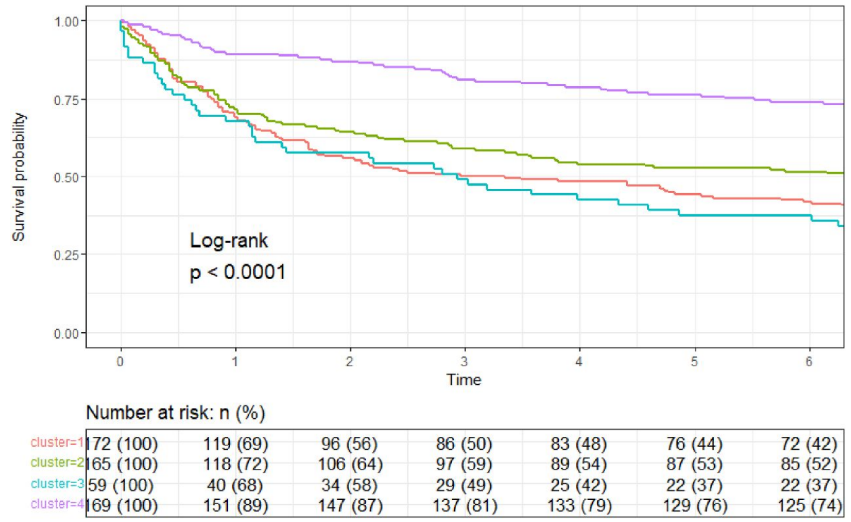
Heart failure in NH

- Prevalence of heart failure in nursing homes varies greatly, with data suggesting rates between 10—45%
- **Complications include the presence of non-specific signs and symptoms** associated with geriatric syndromes, such as fatigue and delirium, confounding the diagnosis of heart failure exacerbations, and resulting in worsened clinical outcomes

Heart failure in nursing homes: A scoping review of educational interventions for optimising care provision. McMahon 2023

Riconoscere i fattori di risch

- Fragilità
- Multimorbidità e comorbidità
- Cardiopatia ischemica (HFrEF).
- Valvulopatie (HFpEF).
- Ipertensione non controllata
- Fibrillazione atriale,
- Amiloidosi cardiaca



Aging Clinical and Experimental Research (2023) 35:2919–2928
https://doi.org/10.1007/s40520-023-02566-w

ORIGINAL ARTICLE

Predicting mortality and re-hospitalization for heart failure: a machine-learning and cluster analysis on frailty and comorbidity

Chukwuma Okoye[1,2,3] · Tessa Mazzarone[1] · Filippo Niccolai[1] · Leonardo Bencivenga[4] · Giulia Pescatore[1] · Maria Giovanna Bianco[1] · Cinzia Guerrini[1] · Andrea Giusti[1] · Daniela Guarino[1] · Agostino Virdis[1]

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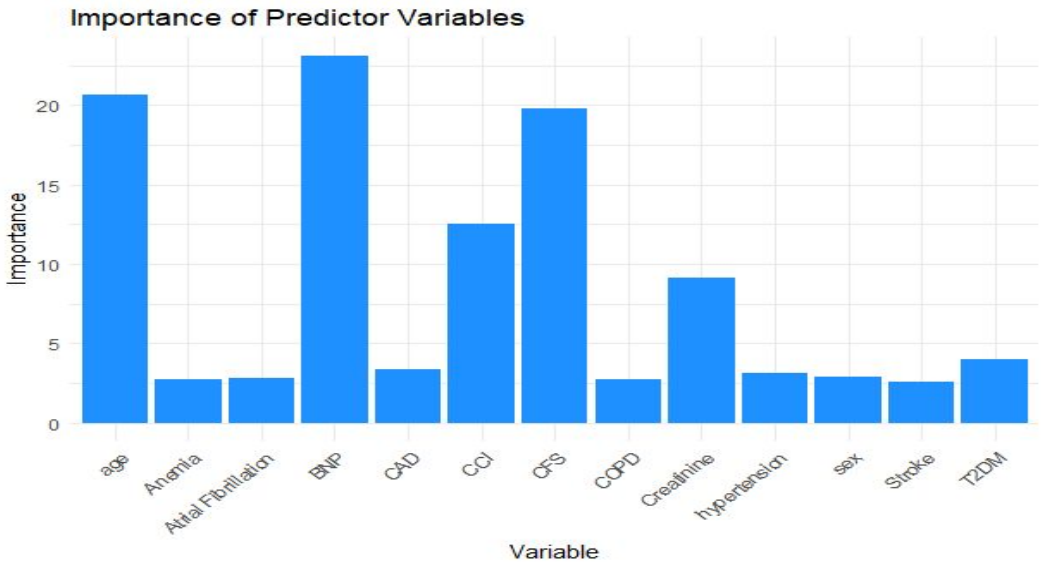

E in BNP?

Heart Failure Reviews (2021) 26:1131–1140
https://doi.org/10.1007/s10741-020-09944-w

Natriuretic peptides for heart failure screening in nursing homes: a systematic review

Vesna Homar[1,2] · Spela Mirosevic[1] · Igor Svab[1] · Mitja Lainscak[1,3]

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Abstract
The high burden of heart failure in nursing-home populations is due to advanced age and comorbidities. Heart failure is often undiagnosed or misdiagnosed in this population and therefore remains untreated. We review the use of natriuretic peptide

population were included. The prevalence of heart failure among nursing-home residents was higher than in the general population of comparable age (23% vs 10%, respectively). The rate of misdiagnosis in nursing homes ranged from 25 to 76%. NT-proBNP was the most commonly used natriuretic peptide biomarker for heart failure screening. The mean value of NT-proBNP was significantly higher in residents with heart failure than in residents overall (pooled means of 2409 pg/mL vs 1074 pg/mL, respectively). In comparison with current guidelines, the proposed cut-off values for ruling out heart failure were higher in the

analyzed studies, with ranges of 230–760 pg/mL for NT-proBNP and 50–115 pg/mL for BNP. NT-proBNP and BNP are used for screening heart failure in the nursing-home population. The current screening cut-off values are probably too low for use in nursing homes. Our most conservative estimation for ruling out heart failure is an NT-proBNP cut-off value of 230 pg/mL.

Keywords Nursing home · Heart failure · Natriuretic peptides · Elderly · Screening

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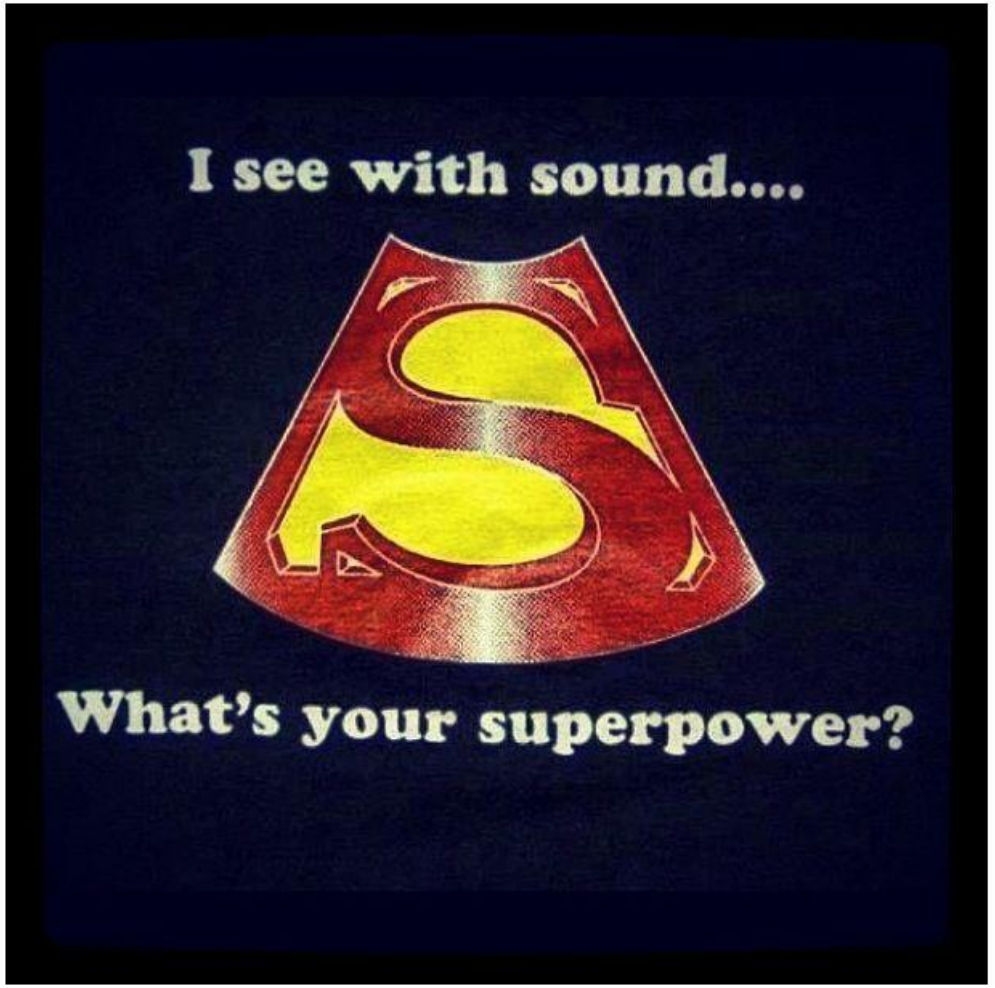
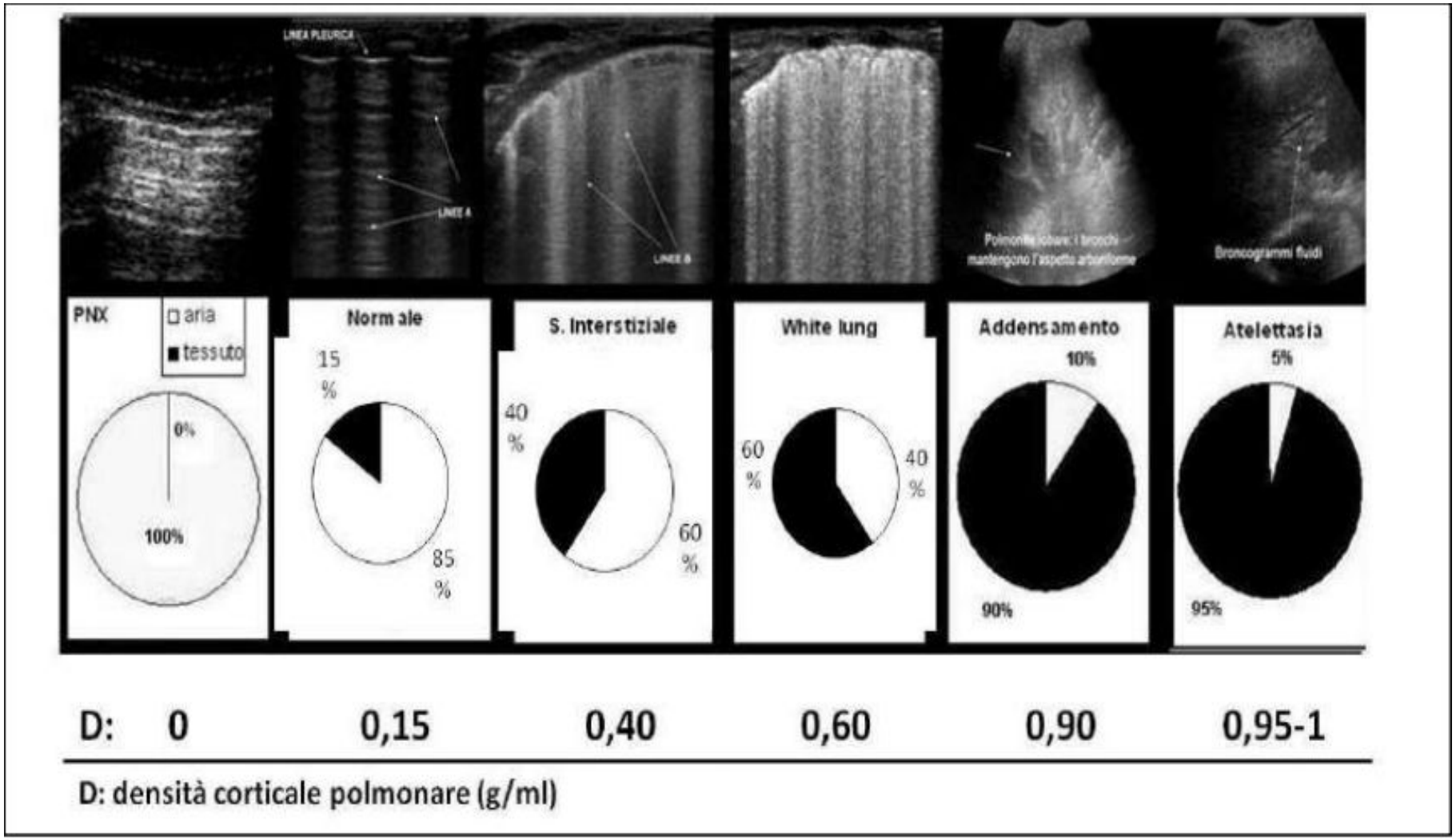
Il ruolo degli strumenti point-of-care



PREMESSA


LINEA PLEURICA
LINEE A
LINEE B
Polmonite lobare: i bronchi mantengono l'aspetto arborifome
Broncogrammi fluidi
PNX
aria
tessuto
0%
100%
Normale
15 %
85 %
S. Interstiziale
40 %
60 %
White lung
60 %
40 %
Addensamento
10%
90%
Atelettasia
5%
95%
D: 0 0,15 0,40 0,60 0,90 0,95-1
D: densità corticale polmonare (g/ml)

Caso clinico

G.B. Paziente anziano, 88 aa

Ex muratore. Vive con la moglie. Necessita di parziale aiuto nelle BADL (4/6), IADL (2/8).

Anamnesi Patologica remota

Ipertensione arteriosa. Ipoacusia bilaterale, ipertrofia prostatica benigna, pregressa tromboflebite, iniziale declino cognitivo, scompenso cardiaco a FE preservata, obesità.

In data 8 Febbraio 2020 accesso in PS per persistenza di stato confusionale associato a febbricola non responsiva a terapia empirica con Ceftriaxone e trattamento psicoattivo.

In PS eseguiva: esami ematochimici (da segnalare Leucociti 11310, 82,4%, Hb 10 g/dl. PCT 1,25, PCR 6,8), BNP 330.

EGA all'ingresso (aa): pH 7,41 pO_2 68 mmHg pCO_2 30 mmHg SO_2 97% HCO^{3-} 25,5 mMol/L BE 10 mMol/L lattato 2,2 mMol/L.

Prima dell'invio in reparto per persistenza di stato confusionale, somministrato aloperidolo 1f + talofen 1 fl + midazolam ½ fl.

Anamnesi farmacologica:

Avodart 0,5 mg, Barnidipina/HCT, Ranitidina 300, Rocefin 2g (da 5 giorni), Simvastatina

Caso clinico

G.B. Paziente anziano, 88 aa

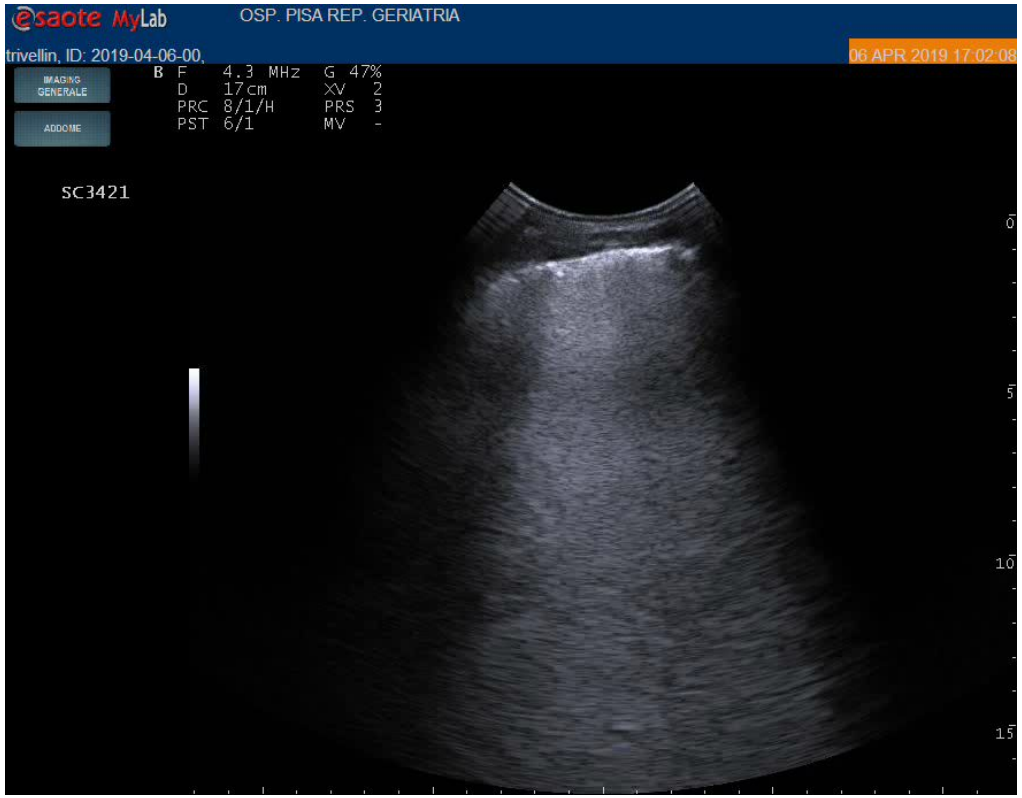
All' arrivo in reparto il paziente viene trovato agitato, marcatamente dispnoico.

SpO2 70% in aa.

Al torace rumore respiratorio ridotto con rumori discontinui tipo rantoli a medie bolle a partenza dai campi medi. Respiro addominale, addome trattabile non dolente né dolorabile peristalsi valida. Non edemi declivi

Caso clinico

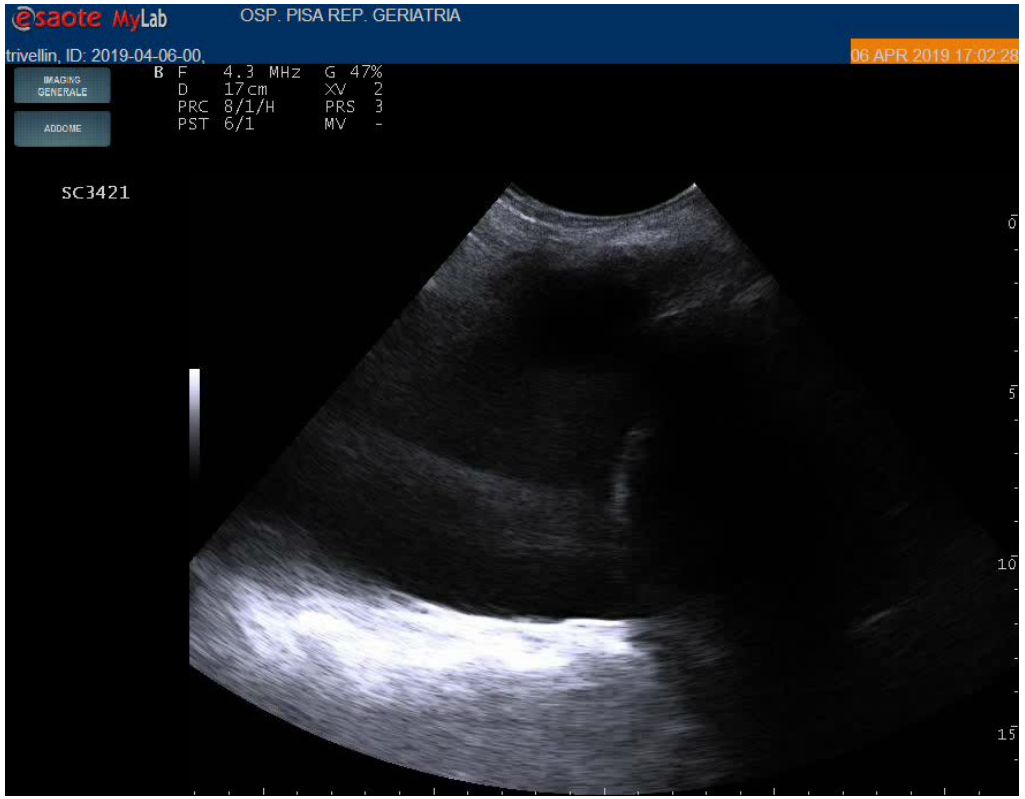
Posizione R2



Posizione L2

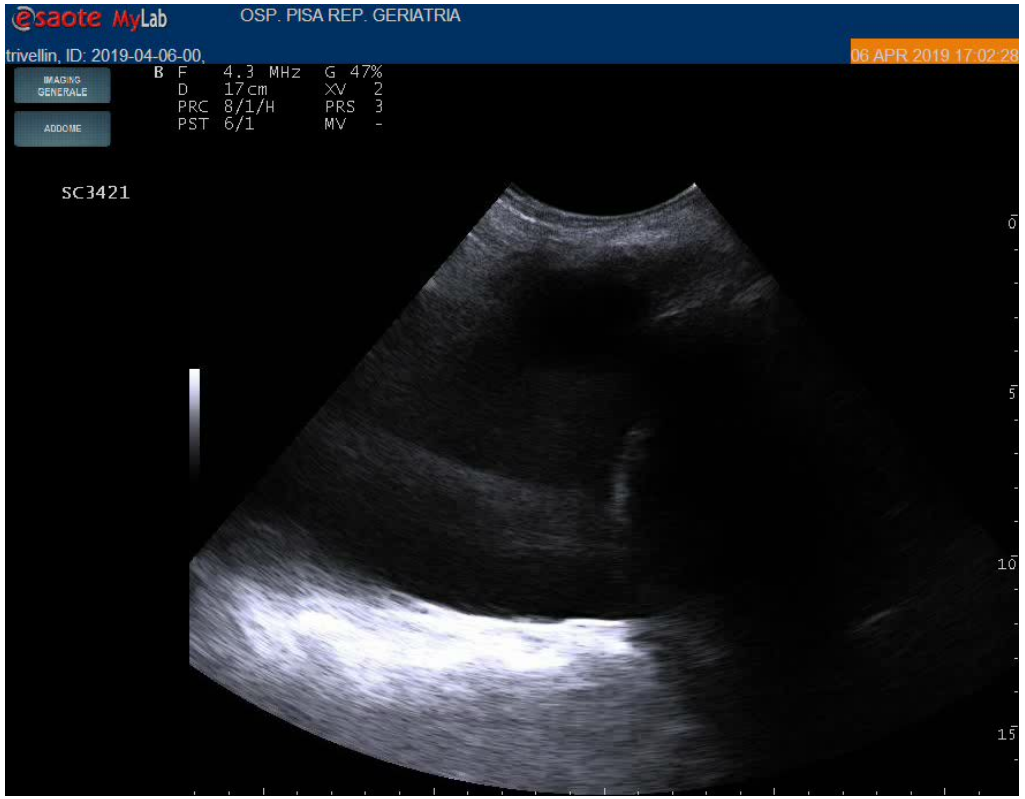
Caso clinico

Proiezione longitudinale vena cava inferiore



Posizione PLAPS dx (e sx)

DELIRIUM COME PRODROMO DI AHF



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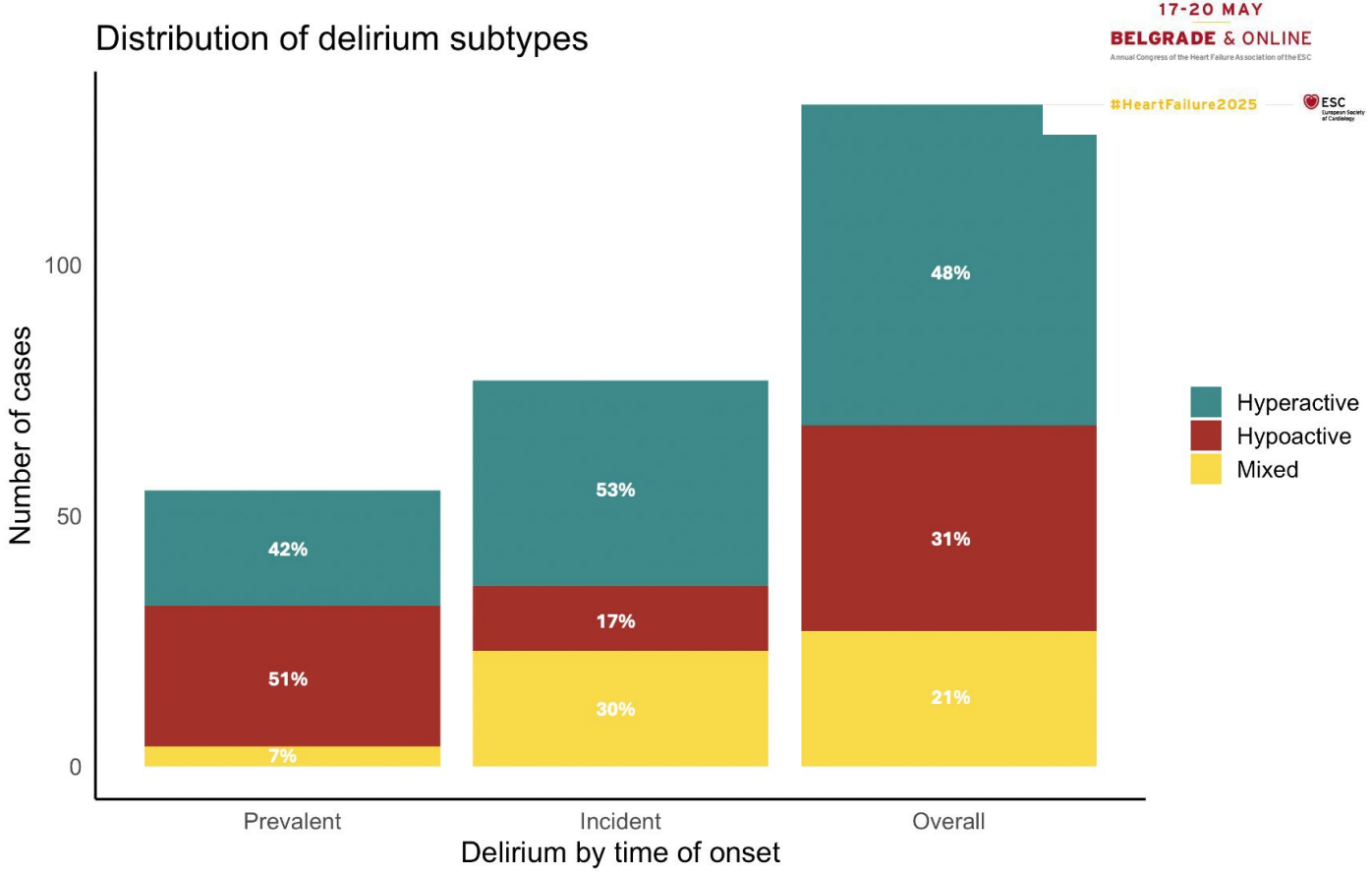
Delirium subtypes and HF

Delirium emerges as a pivotal clinical feature in the presentation of AHF among older adults,

- **Affecting approximately one-third of patients admitted to the AGU with AHF**, delirium significantly worsens outcomes, doubling mortality risk at both 30 and 90 days.
- **prevalence and incidence of delirium were 13.8% and 19.2%,** respectively, underscoring its frequent occurrence in this context.
- the distribution of delirium subtypes revealed hyperactive delirium as the most common (48%), followed by hypoactive (31%) and mixed-type delirium (21%).



Finazzi, Okoye et al 2025

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Verso la diagnosi clinica...

Step 1: Valutazione clinica:

- Anamnesi mirata: onset della dispnea, sintomi associati (edema, ortopnea), comorbilità, assessment di fragilità.
- Esame obiettivo: segni di congestione (rantoli, edema periferico, turgore giugulare).

Verso la diagnosi clinica

Step 2: Diagnostica di primo livello (3 min):

- Biomarcatori: ruolo di BNP/NT-proBNP (cut-off specifici per anziani, es. NT-proBNP >450 pg/mL per età >75 anni).
- ECG: anomalie frequenti (fibrillazione atriale, blocchi di branca).
- Utilizzo di metodiche point-of-care

Verso la diagnosi clinica

Step 3: Diagnostica avanzata (3 min):

- Ecocardiografia: valutazione di FE, disfunzione diastolica, valvulopatie (in caso di stabilità una volta ogni 12-24 mesi).
- **Ruolo della consulenza cardiologica/cardiogeriatrica in RSA: telemedicina o collaborazione interdisciplinare.**

Conclusioni

- La dispnea è sintomo frequente e spesso aspecifico nel paziente anziano, pur rimanendo il sintomo cardine dello SC
- Gli strumenti POCUS possono essere di grande aiuto nella diagnosi nei setting residenziali
- Il delirium colpisce 1/3 dei pazienti over 75 enni con SC acuto e può presentarsi come prodromo di riacutizzazione
- Le prospettive future: telemedicina, diagnostica point-of-care, gestione integrata.

Ringraziamenti

Ambulatorio di Cardiogeriatria
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- Alberto Finazzi

GeroHeart Lab
- Luca Tinelli
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- Lavinia Vitali
- Martina Marelli

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CARDIO-GERIATRIA NEI SETTING RESIDENZIALI

9 MAGGIO 2025

ore 15.00 | Sala BENACO ASC Cremona Solidale

Focus sulla gestione dello scompenso cardiaco e della fibrillazione atriale

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