



La Demenza nell'Ospedale per Acuti: in Reparto Medico

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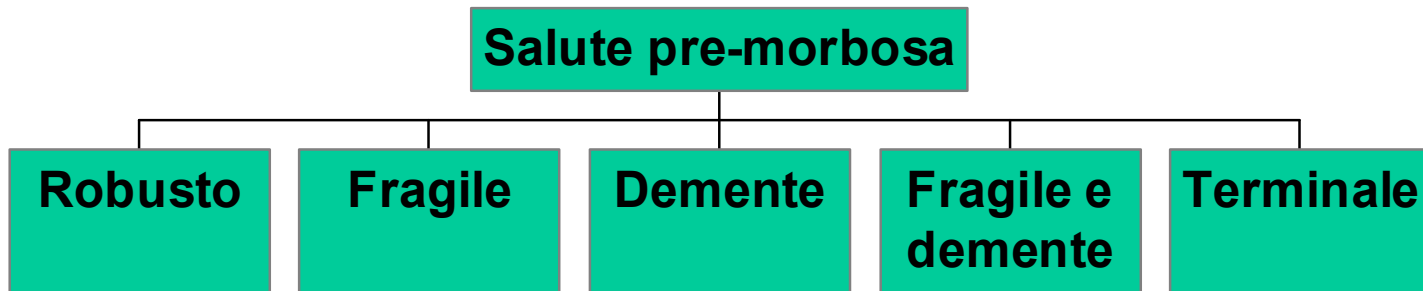
Gruppo di Ricerca Geriatrica

La Demenza nell'Ospedale per Acuti

- **Una classificazione operativa dei pazienti**
- **La fenomenologia**
- **L'epidemiologia**
- **Le implicazioni clinico-prognostiche**
- **L'intensività e il delirium**
- **La responsabilità del medico**

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- La responsabilità del medico



Gillick M, AMDA, 2000

Lo stato di salute (il background clinico)

Il paziente robusto

- Non disabile (BADL=0/6)
- Senza demenza (MMSE \geq 18)

Il paziente fragile

- Con disabilità (BADL=1+/6)

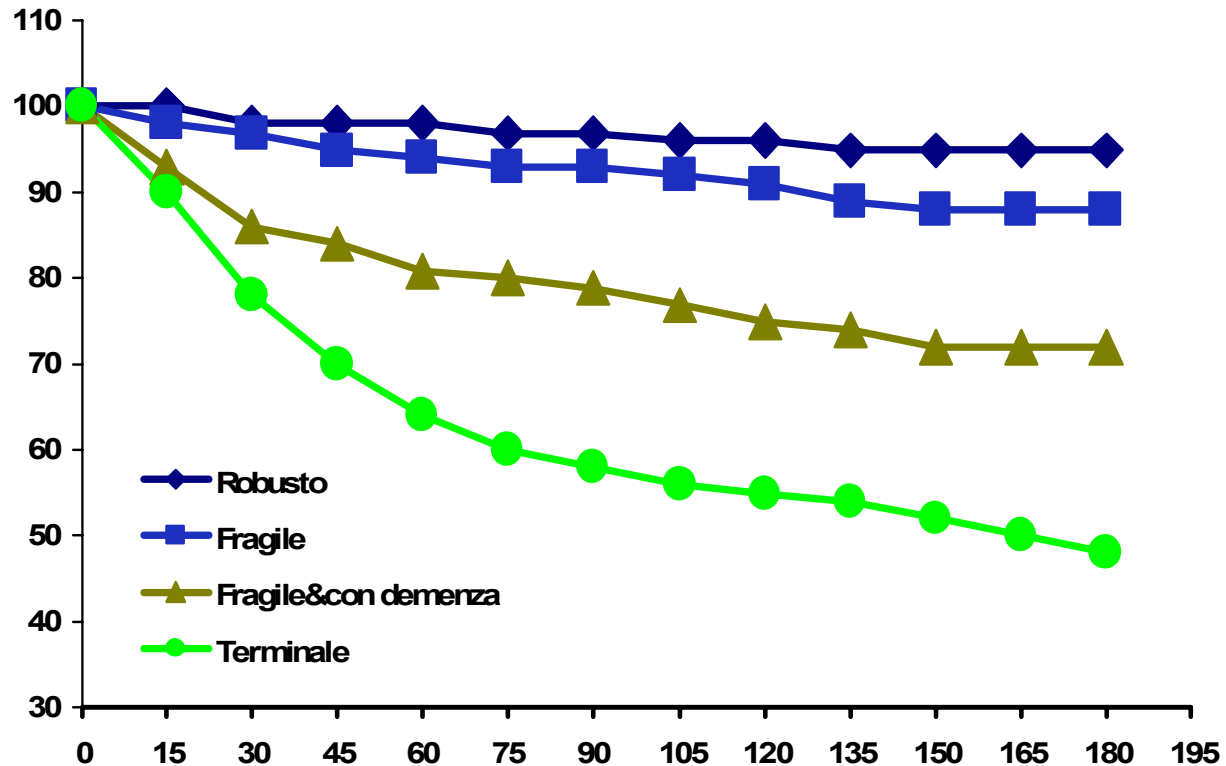
Il paziente con demenza

- ▼ cognitività (MMSE<18)

Il paziente fragile&con demenza

- Con disabilità (BADL=1+/6)
- ▼ cognitività (MMSE<18)

Sopravvivenza a sei mesi in una popolazione di pazienti anziani spedalizzati in un reparto per acuti stratificata per classi cliniche diverse



$p < 0.0001$ log-rank test

giorni dalla dimissione

Table 1. Characteristics of 2,850 Elderly Patients Admitted to a Geriatric Ward According to Activity of Daily Living (Barthel Index) Function on Admission to Hospital

Characteristic	Barthel Index on Admission			P-value
	100 (n = 921)	40–95 (n = 1,496)	0–35 (n = 434)	
Age, mean ± SD	72.4 ± 9.7	80.3 ± 8.0	82.4 ± 7.0	<.001
Female, %	58.4	72.2	70.3	<.001
Mini-Mental State Examination score, mean ± SD (0–30)	27.2 ± 5.1	23.3 ± 7.8	14.6 ± 10.1	<.001
Geriatric Depression Scale score, mean ± SD (0–15)	3.9 ± 3.3	5.5 ± 3.6	5.6 ± 3.6	<.001
Number of instrumental activities of daily living lost, mean ± SD [†]	0.8 ± 1.6	3.6 ± 2.6	5.5 ± 2.8	<.001
Barthel Index on admission, mean ± SD	100	76.9 ± 16.5	11.6 ± 12.1	<.001
Charlson Comorbidity Index, mean ± SD (0–33)	5.6 ± 2.2	7.1 ± 2.5	8.4 ± 2.7	<.001
Number of drugs, mean ± SD	4.0 ± 1.9	4.3 ± 1.8	4.5 ± 2.0	.005
Acute Physiology and Chronic Health Evaluation II score, mean ± SD (0–71)	6.5 ± 3.1	8.2 ± 4.1	11.4 ± 5.9	<.001
Serum albumin <3.5 g/dL, %	14.2	21.8	58.1	<.001
Chief reason for admission, %				
Acute dyspnea/other pulmonary problem	16.7	19.5	34.6	<.001
GI bleeding or other GI problem	15.7	12.2	14.4	NS
Congestive heart failure or other cardiac problem	24.8	16.2	8.1	<.001
Length of stay, mean ± SD	5.9 ± 2.8	6.6 ± 3.2	7.1 ± 4.6	<.001

Analysis of variance.

[†]Detected 2 weeks before admission.

SD = standard deviation; GI = gastrointestinal; NS = nonsignificant.

La Demenza nell'Ospedale per Acuti

- Una classificazione operativa dei pazienti
- **La fenomenologia (un esempio)**
- L'epidemiologia
- Le implicazioni clinico-prognostiche
- L'intensività e il delirium
- La responsabilità del medico

“...Terry described a very crowded waiting room setting where Mr S. was very agitated and wanted to leave repeatedly....

....Once Mr S. was settled into his room, removing his clothing to put on a hospital gown did not go smoothly-he could not understand who the hospital personal were and why they were taking his clothes.

...The IV in his arm also presented a problem; he kept trying to remove it.....

Improving hospital care for person with dementia
(Silverstein & Maslow, 2006)

...Once he has finished, he repeatedly wanted to clean up-the dirty dishes seemed to trigger his restless behavior.

...He repeatedly wanted to leave his room and join the activity in the hallway. When Terry walked with him, he would try to go into other patients' room and had to be redirected....”

Improving hospital care for person with dementia
(Silverstein & Maslow, 2006)

La Demenza nell'Ospedale per Acuti

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- La fenomenologia
- **L'epidemiologia**
- Le implicazioni clinico-prognostiche
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**Stratificazione per classi di età degli 82.647
pazienti afferiti al DEA dell'H. Poliambulanza nel
biennio 04-05**

	n	%
< 65	65.320	79,0
65-69	3.897	4,7
70-74	3.751	4,5
75-79	3.551	4,3
80-84	3.398	4,1
85-89	1.624	2,0
> 90	1.106	1,3

Stratificazione per classi di età e sesso dei 13.059 pazienti (15.8%) afferiti al DEA dell'H. Poliambulanza di Brescia nel biennio 2004-2005 e successivamente ricoverati.

***I valori percentuali si riferiscono al totale degli accessi.**

età	tot	%tot*	M	F	tot M (SD)	LOS		tot M	DRG	
						M (SD)	F (SD)		M	F
< 65	7.561	11,6	2892	4669	4,7 (5,1)	5,8 (6,9)	4,1 (3,5)	0,96	1,33	0,74
65-69	883	22,7	542	341	8,1 (7,9)	8,3 (8,7)	7,7 (6,8)	1,82	1,88	1,72
70-74	1.004	26,8	554	450	7,7 (6,5)	7,9 (6,7)	7,5 (6,2)	1,62	1,73	1,47
75-79	1.121	31,6	540	581	7,5 (6,0)	7,4 (5,8)	7,6 (6,3)	1,57	1,63	1,52
80-84	1.170	34,4	506	664	7,8 (6,4)	8,0 (6,8)	7,7 (6,1)	1,58	1,68	1,50
85-89	701	43,2	242	459	7,1 (6,3)	7,9 (8,9)	6,8 (4,4)	1,50	1,61	1,44
> 90	619	56,0	167	452	6,3 (4,1)	6,7 (4,9)	6,2 (3,8)	1,34	1,42	1,32
Totale	13.059	15,8	5443	7616	5,9 (5,9)	6,7 (7,1)	5,3 (4,7)	1,22	1,50	1,03

Stratificazione per classi di età dei 13.059 pazienti afferiti al DEA dell'Ospedale Poliambulanza di Brescia nel biennio 2004-2005 e successivamente ricoverati in reparto medico (n= 6622) o in reparto chirurgico (n=6437) (pazienti con demenza in rosso ~400/anno).

		%	% tot	
Reparto chirurgico (n=6437)				
< 65	4.854	75,4	64,2	
65-69	353	5,5	40,0	
70-74	340	5,3	33,9	
75-79	330	5,1	29,4	
80-84	291	4,5	24,9	
85-89	141	2,2	20,1	
> 90	128	2,0	20,7	
Reparto medico (n=6622)				
< 65	2.707	40,9	35,8	(0)
65-69	530	8,0	60,0	(3)
70-74	664	10,0	66,1	(10)
75-79	791	11,9	70,6	(16)
80-84	879	13,3	75,1	(21)
85-89	560	8,5	79,9	(32)
> 90	491	7,4	79,3	(40)

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Lo scompenso di cuore

Association of groups of risk with 6-month mortality in hospitalized elderly patients

	N/events	A RR	95% C.I.	B RR	95% C.I.
No HF and no Dementia	811/46	1.0	Ref.	1.0	Ref.
Yes HF and no Dementia	106/19	3.1	1.6-6.0	2.8	1.4-5.5
No HF and yes Dementia	97/30	5.7	3.2-10.3	2.7	1.4-5.1
Yes HF and yes Dementia	59/21	7.0	3.7-13.3	3.7	1.8-7.4
Disability in BADL	491/97	3.6	2.4-5.4	1.9	1.1-3.4
Serum albumin (<3.5 g/dl)	165/47	4.8	3.3-7.0	2.1	1.3-3.5
APACHE-APS (>3)	287/78	3.3	1.7-6.2	2.3	1.4-3.7
Charlson Index (>7)	223/63	4.3	2.9-6.4	1.6	1.0-2.8

Rozzini et al., Am J Med. 2004

Association Between Heart Failure and 6-Months Mortality in 995 Hospitalized Elderly Patients According to Increasing Frailty (Cox Regression Analysis)

Group	No./Events	Crude		Adjusted*	
		RR (95% CI)	P Value for Trend†	RR (95% CI)	P Value for Trend†
A (not disabled and not demented)					
No heart failure	430/13	1.0 (Reference)	.01	1.0 (Reference)	.005
Heart failure (NYHA III-IV)	60/9	4.1 (1.2-13.3)		4.1 (1.3-15.1)	
B (disabled or demented)					
No heart failure	266/26	1.0 (Reference)		1.0 (Reference)	
Heart failure (NYHA III-IV)	36/10	3.1 (1.3-7.4)		2.7 (1.1-6.7)	
C (disabled and demented)					
No heart failure	137/35	1.0 (Reference)	1.0 (Reference)		
Heart failure (NYHA III-IV)	21/9	1.4 (0.3-5.9)	1.3 (0.3-5.6)		

Abbreviations: CI, confidence interval; NYHA, New York Heart Association; RR, relative risk.

*Confounders: low albumin level (<3.5 g/dL), low serum cholesterol (<160 mg/dL [<4.14 mmol/L]), low hemoglobin level (<12 g/dL), high Acute Physiology Score (>3), and Charlson Index (≥ 8) (heart failure not included).

†Test for the linear decrease of the RR between heart failure and mortality through groups of increasing frailty.

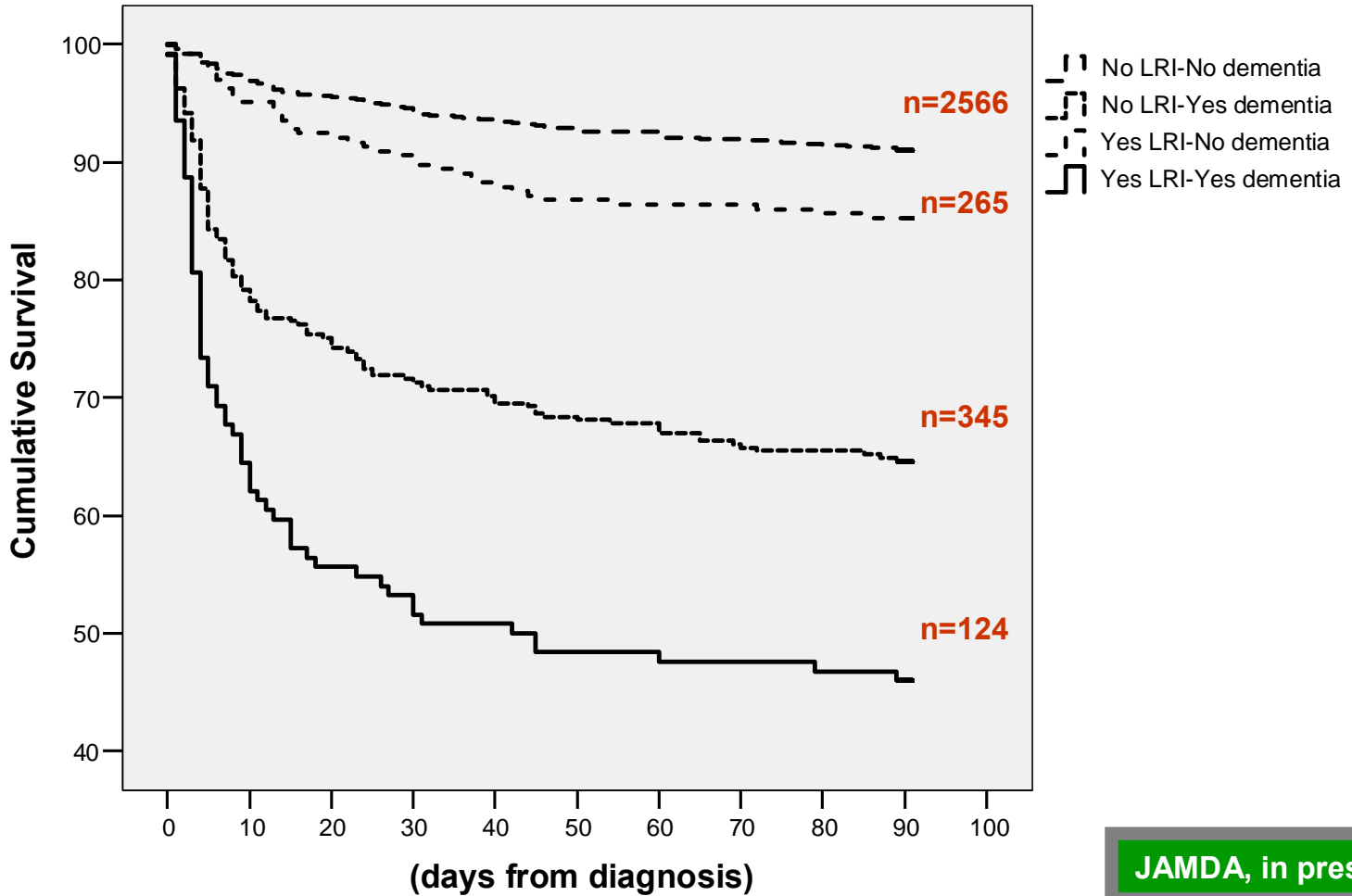
(Rozzini et al, Arch Intern Med 163:737-738, 2003)

Le infezioni respiratorie

Characteristics and 3-months mortality rate of 3300 in patients affected by Low Respiratory Tract Infections (LRI) and dementia.

	Total (N=3300)	NoLRI-NoD (N=2566)	YLRI-NoD (N=265)	NoLRI-YD (N=345)	YLRI-YD (N=124)	<i>p</i>
	M±SD (%)	M±SD (%)	M±SD (%)	M±SD (%)	M±SD (%)	
Age (years)	79.2±8.0	78.4±7.7	80.0±8.2	83.2±7.7	83.4±8.4	0.001
Gender (males)(%)*	(38.3)	(24.5)	(24.5)	(24.5)	(19.3)	0.001
MMSE score	21.8±8.5	24.9±4.4	23.4±4.9	4.5±4.7	3.7±4.4	0.001
GDS score	4.6±3.5	4.6±3.5	4.2±3.1	---	---	0.155
Barthel Index (15 days bef)	78.7±27.9	86.5±19.8	76.2±26.6	45.7±34.5	30.2±28.7	0.001
Barthel Index (on adm)	60.1±38.1	71.8±32.2	48.6±37.1	22.0±29.2	5.5±14.2	0.001
IADL (functions lost)	3.3±2.9	2.6±2.6	3.4±2.9	6.3±2.4	7.0±1.6	0.001
Diseases (n)	5.1±2.0	5.1±1.9	5.3±2.0	5.2±2.2	5.4±2.3	0.142
Charlson Index	5.3±1.8	5.0±1.7	5.5±1.9	5.8±2.1	6.5±2.2	0.001
Drugs (n)	5.7±2.9	5.4±2.6	6.2±3.3	5.8±3.1	6.9±3.0	0.194
APACHE II score	10.6±5.9	9.1±4.9	13.7±4.9	13.0±6.8	18.3±6.6	0.001
APACHE II-APS subscore	4.4±5.2	3.1±3.9	6.1±5.1	6.5±6.4	10.9±6.9	0.001
Serum Albumin (g/dl)	3.7±0.7	3.8±0.6	3.4±0.6	3.3±0.7	3.1±0.6	0.001
Hemoglobin (g/dl)	12.5±2.3	12.6±2.3	12.2±2.2	12.0±2.5	11.9±2.5	0.000
Serum Cholesterol (mg/dl)	187.3±53.3	192.2±51.9	162.8±49.6	175.4±53.5	160.9±52.5	0.001
CPR (mg/dl)	4.4±7.4	2.9±5.7	9.1±10.4	7.3±9.6	11.1±9.1	0.001
Creatinine (mg/dl)	1.1±0.7	1.1±0.6	1.3±0.8	1.2±1.0	1.4±1.1	0.000
Length of stay (days)	6.5±3.7	6.5±3.6	7.8±4.1	5.8±4.0	5.4±3.9	0.001
3 mos mortality (%)*	(13.9)	(9.0)	(14.7)	(35.4)	(54.0)	0.001

Three months survival of elderly patients according to lower respiratory tract infection (LRI) and dementia



Characteristics and 6-Month Mortality Rate of 1297 Inpatients According to Their Dementia and Disability Status*

Characteristic	Patients With Pneumonia†			Patients With Acute Noninfectious Conditions‡		
	A (n = 100)	B (n = 26)	C (n = 15)	A (n = 1033)	B (n = 90)	C (n = 33)
Age, y	81.5 ± 6.6	83.3 ± 6.9	83.9 ± 7.8	79.4 ± 4.9	84.3 ± 7.1	85.6 ± 6.0
MMSE score	23.5 ± 4.5	8.3 ± 7.6	ND	24.5 ± 4.4	8.5 ± 5.4	ND
Barthel Index‡	84.1 ± 18.0	49.0 ± 26.1	5.5 ± 6.9	88.9 ± 15.3	57.9 ± 30.2	5.0 ± 6.2
APACHE II score§	14.0 ± 5.9	14.9 ± 5.6	17.4 ± 6.8	7.3 ± 3.8	9.4 ± 5.2	11.6 ± 6.6
Diseases, No.	6.0 ± 2.0	6.6 ± 1.6	7.5 ± 4.1	5.3 ± 1.9	6.1 ± 2.3	5.6 ± 2.3
Drugs, No.	4.4 ± 2.2	4.5 ± 1.7	3.3 ± 1.6	4.2 ± 1.8	4.1 ± 1.9	4.3 ± 1.8
Length of stay, d	8.5 ± 4.0	9.1 ± 4.2	5.9 ± 6.0	6.8 ± 3.4	5.9 ± 2.3	6.4 ± 4.9
6-mo mortality, % (No.)	21 (21)	31 (8)	80 (12)	15 (152)	34 (31)	64 (21)

Abbreviations: APACHE, Acute Physiology and Chronic Health Evaluation; MMSE, Mini-Mental State Examination; ND, nondetectable.

*Data are mean ± SD unless otherwise specified.

†A, Patients with absent to moderate cognitive impairment (MMSE score >12); B, not bedridden patients with severe dementia (MMSE score ≤12); C, bedridden demented patients.

‡Barthel Index establishes the degree of disability (the lower the score, the higher the degree of functional impairment).

§APACHE II is a severity disease classification that quantifies the degree of abnormality of multiple physiologic variables (the higher the score, the higher the severity).

La grave disabilità

Characteristics of 1310 hospitalized elderly patients according to their mental status before admission: not affected by severe dementia, with severe dementia but not confined to bed, and with severe dementia and confined to bed.

	Total N=1310 M(±SD) n (%)	Without SevD N=1155 M(±SD) n (%)	SevD not Br N=71 M (±SD) n (%)	SevD & Br N=84 M (±SD) n (%)
Age (years)	79.4 (±7.8)	77.4 (±7.7)	77.0 (±6.9)	79.5 (±7.0)
Gender (male)	425 (32.4)	378 (32.7)	21 (29.9)	26 (31.0)
MMSE score	22.2 (±7.9)	24.5 (±4.6)	8.0 (±4.1)	1.8 (±3.6)
GDS score	5.2 (±3.6)	5.2(±3.6)	NA	NA
Living alone	382 (29.7)	382 (33.1)	NA	NA
Barthel Index prior	83.2 (±24.2)	88.0 (±17.8)	67.9 (±22.6)	30.3 (±31.8)
Barthel Index at	74.4 (±30.7)	80.7 (±24.8)	55.8 (±20.3)	3.3 (±5.5)
Barthel Index at discharge	76.6 (±29.6)	83.1 (±22.8)	55.3 (±21.3)	5.3 (±9.4)
No of IADLs lost prior	3.3 (±3.8)	2.8 (±3.8)	6.2 (±2.2)	7.3 (±1.3)
Charlson Index	2.6 (±2.4)	2.4 (±2.3)	3.9 (±2.5)	4.3 (±2.6)
Drugs (n)	4.3 (±1.8)	4.3 (±1.9)	4.1 (±1.8)	3.9 (±1.8)
APACHE II score	8.1 (±4.7)	7.7 (±4.3)	9.3 (±4.2)	13.2 (±7.1)
APS-APACHE II score	1.9 (±2.9)	1.7 (±2.5)	2.3 (±2.5)	5.1 (±5.2)
Serum Albumin (g/dl)	4.0 (±0.7)	4.1 (±0.6)	3.9 (±0.6)	3.3 (±0.6)
Serum Cholesterol (mg/dl)	203.5 (±32.0)	206.5 (±51.3)	194.1 (±54.2)	168.9 (±45.9)
Hemoglobin (g/dl)	12.2 (±2.1)	12.3 (±2.3)	11.8 (±2.2)	11.1 (±2.4)
LOS (days)	6.9 (±3.3)	6.9 (±3.2)	6.3 (±2.7)	6.7 (±4.6)
Six month mortality	213 (16.3)	144 (12.5)	15 (21.1)	54 (64.4)

Factors associated to 6-month mortality of 1310 hospitalized elderly patients.

	N/events	A RR (95% C.I.)	B RR (95% C.I.)
Cancer	196/78	4.8 (3.4-6.7)	3.4 (2.3-5.1)
Heart failure (NYHA III-IV)	137/40	2.3 (1.5-3.5)	1.8 (1.1-2.9)
Gastroenteric disease	104/30	2.2 (1.4-3.5)	2.0 (1.3-3.2)
Charlson Index score (3+)	361/126	5.3 (3.9-7.2)	2.6 (1.7-3.9)
APS-APACHE II (4+)	254/95	4.9 (3.5-6.7)	2.2 (1.5-3.2)
Drugs number (5+)	680/119	1.9 (1.2-2.6)	1.6 (1.1-2.5)
Negative events (1+)	138/43	2.7 (1.8-4.0)	1.6 (1.0-2.5)
No severe dementia	1155/144	1.0 (ref.)	1.0 (ref.)
With severe D not bedridden	71/15	2.4 (1.3-4.3)	1.7 (1.0-3.1)
With severe D & bedridden	84/54	6.3 (4.0-9.9)	4.6 (2.8-7.6)
Age 80+	630/127	1.7 (1.3-2.3)	-
Gender (male)	425/89	1.6 (1.2-2.1)-	-
Respiratory (COPD/pneumonia)	456/110	2.2 (1.6-2.1)	-
Renal failure (Creatinine>2.5 mg/dl))	197/52	2.1 (1.4-2.9)	-
Major Stroke	159/41	1.9 (1.3-2.8)-	-
Anemia (Hb< 8.0g/dl)	145/55	3.8 (2.6-5.6)	-
Liver cirrhosis (Child C)	65/19	2.2 (1.2-3.8)	-
Congestive Heart failure (NYHA III-IV)	56/23	3.8 (2.2-6.6)	-
Diabetes Mellitus (Glucose> 350mg/dl)	73/19	1.8 (1.1-3.2)	-
Serum albumin (<3.5g/dl)	275/92	4.0 (2.9-5.5)	-

Le barriere all'applicazione delle linee guida

Characteristics of 126 Patients With Chronic Atrial Fibrillation Admitted to an Acute Care for the Elderly Unit According to Antithrombotic Therapy*

	Anticoagulant Group (n = 58)	Aspirin Group (n = 68)	P†
Age	76.7 ± 8.9	82.8 ± 5.5	>.001
Women	43 (74.1)	42 (61.8)	.22
Living alone	16 (28.1)	21 (30.9)	.84
Rural location	16 (27.6)	42 (61.8)	>.001
Number of diseases	6.3 ± 2.0	6.9 ± 1.9	.14
Charlson Index‡	2.9 ± 1.5	3.3 ± 1.9	.09
Number of drugs	5.1 ± 1.7	5.2 ± 1.6	.68
Body Mass Index, kg/m ²	27.2 ± 5.4	25.2 ± 4.9	.08
Serum albumin, mg/L	4.1 ± 0.5	4.0 ± 0.5	.44
Cholesterol, mmol/L (mg/dL)	4.96 ± 0.82 (191.8 ± 31.8)	4.60 ± 1.34 (178.0 ± 51.9)	.27
Falls (3 or more within 12 months)	1 (1.7)	18 (26.1)	>.001
Mini-Mental State Examination score§	24.4 ± 5.5	19.9 ± 7.0	>.001
BADL (Barthel Index)	85.6 ± 19.9	69.5 ± 27.2	>.001
Instrumental activities of daily living (functions lost)	2.4 ± 2.5	4.9 ± 2.5	>.001

*Unless otherwise indicated, data are mean ± SD or number (percentage); BADL indicates basic activities of daily living.

†Significance on t test or χ^2 test for mean comparison.

‡Charlson Index assesses presence and severity of chronic conditions.

§The Mini-Mental State Examination evaluates cognitive performances (higher scores indicate better performance).

|The Barthel Index evaluates the independence in BADL (higher scores indicate better performance).

**Geriatric Assessment and Anticoagulation in Elderly Patients With Chronic Atrial Fibrillation
(Bellelli et al., Arch Intern Med. 2000;160:2402-2403)**

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Factors associated to cumulative delirium in multiple logistic regression among 401 elderly patients admitted to the Sub Intensive Care Unit

	N/Events	OR	95 % CI
MMSE (<18)	129/76	8.7	4.4–17.1
Heavy alcohol use	20/11	6.0	1.6–22.3
Maximum number of drugs (7+)	152/54	2.5	1.4–4.6
Indwelling bladder catheter	228/94	2.4	1.2–4.8
Barthel <95 (2 wks before hosp)	227/93	1.4	0.7–2.9
Visual problems	116/56	1.2	0.6–2.3
Age (80+ years)	163/61	1.4	0.7–2.5
S-albumin (<3.5 g/dl)	223/77	1.1	0.6–1.9

Ranhoff AH, et al. Aging, 2006

Characteristics of 401 patients admitted to a Sub-Intensive Care Unit with no delirium and with cumulative, incident, and prevalent delirium

	No Del N=284 M±SD	Cum. Del N=117 M±SD	<i>P</i> *	Inc. Del N=55 M±SD	Prev. Del N=62 M±SD	<i>P</i> **
Length of stay	6.1±5.1	5.9±4.0	0.754	6.7±4.3	5.2±3.6	0.039
Mortality in Hosp, n (%)	14 (4.9)	36 (30.8)	0.001	10 (18.2)	26 (41.9)	0.005

Ranhoff AH, et al. Aging, 2006

La Demenza nell'Ospedale per Acuti

- Una classificazione operativa dei pazienti
- La fenomenologia
- L'epidemiologia
- Le implicazioni clinico-prognostiche
- Intensività e delirium
- **La responsabilità del medico**

Patients with **dementia** and **confined to bed** have the worst health status: they have the higher impairment in the APS-APACHE II score, the lowest level of serum albumin, hemoglobin, and serum cholesterol, and the highest comorbidity.

Six month **mortality** was 64.4%, 21.1% and 12.5% respectively for patients with dementia and confined to bed, with dementia without being confined to bed, and for the control group.

Patients with severe dementia (with or without being confined to bed) have an independent association with increased 6 month mortality even when adjusted for all the clinical variables found to be associated to mortality in bivariate analysis.

Do we need to adopt a palliative approach for these severely demented patients?

READERS RESPOND

A 93-Year-Old Man With Advanced Dementia and Eating Problems

Risa B. Burns, MD

JAMA. 2007;298: (doi: 10.1001/jama.298.17.jrr70001).

The patient described and his daughter interviewed below face a crossroads regarding his medical care. Consider their perspectives, expressed in their own words. Then review the questions posed and imagine you are caring for Mr P. How would you approach this crossroads?

Aspetti bioetici

Advance Directives and Quality of End-of-Life Care: pros and cons in older people.

Rozzini&Trabucchi, J Am Geriatr Soc, September, 2007

The physician-surrogate relationship

Rozzini&Trabucchi, Arch Intern Med (in press)