Gruppo di ricerca geriatrica

GRG
Journal Club
8 Agosto 2008

La nuova importanza delle malattie infettive in geriatria

Marco Trabucchi

Alcuni spunti di un non esperto, alla ricerca senza pregiudizi di elementi significativi per migliorare l'assistenza agli anziani vulnerabili, anche sulla base di alcuni dati originali

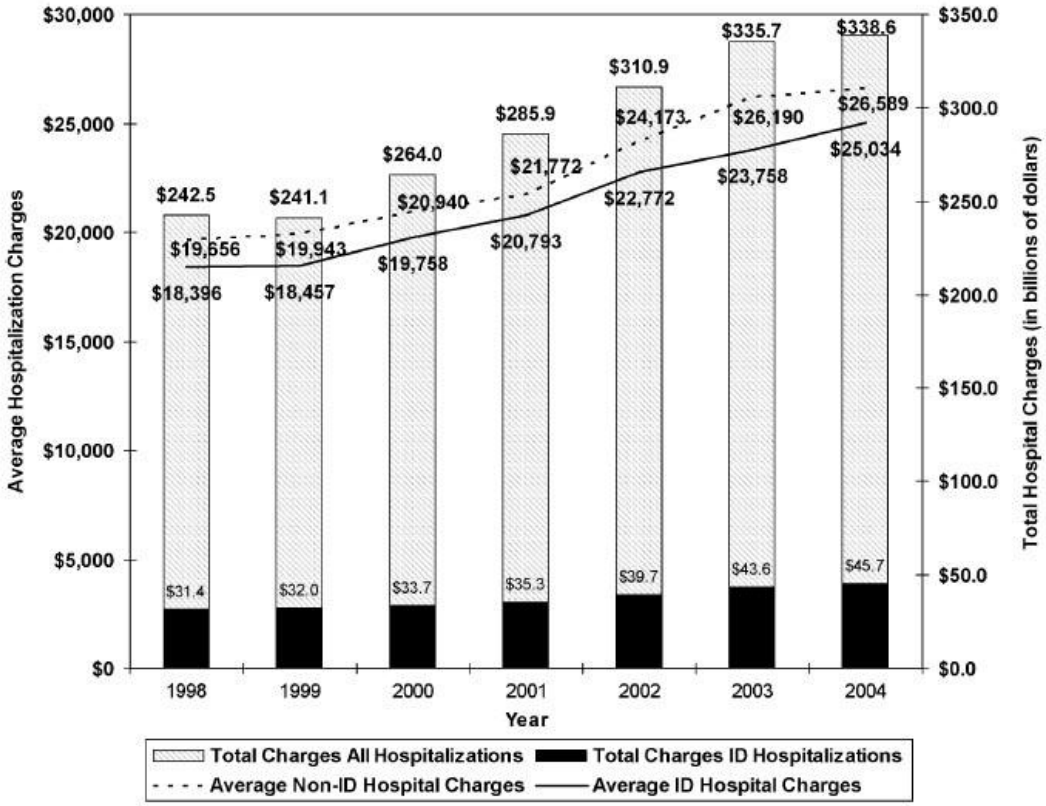

Figure 1. Total hospital charges for all-cause and infectious disease (ID) hospitalizations and average hospital charges for non-ID and ID hospitalizations of adults aged 65 and older, United States, 1998 to 2004.

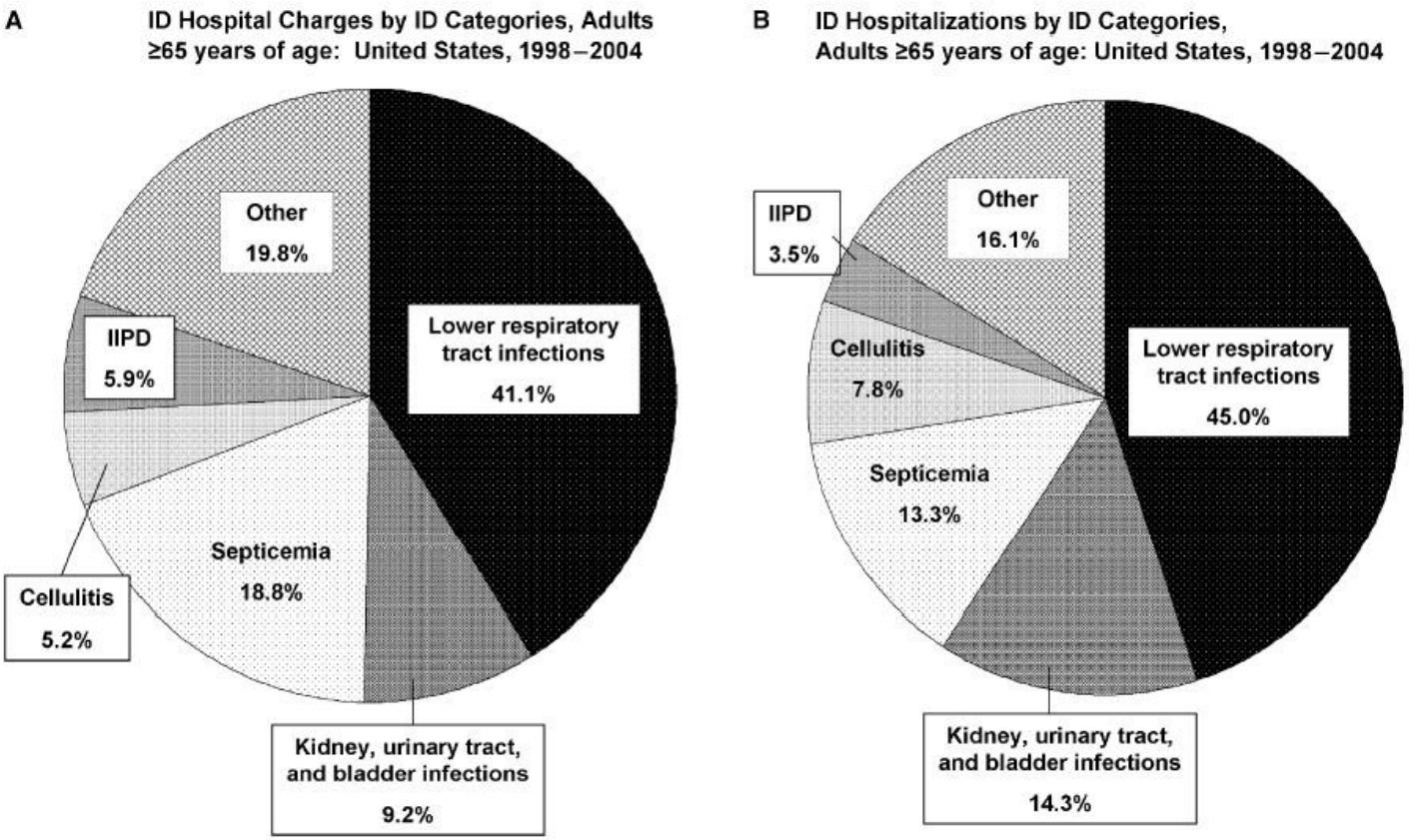

Figure 2. Proportions of infectious disease (ID) hospital charges (A) and ID hospitalizations (B) according to ID category of adults aged 65 and older, United States, 1998 to 2004. IIPD, infection and inflammatory reaction to prosthetic devices.

I costi ospedalieri per le malattie infettive aumentano come per le malattie in generale.

Quindi presumibilmente le infezioni seguono lo stesso trend epidemiologico delle altre malattie

Nel recente passato si era creduto in una scomparsa progressiva delle malattie infettive.

“La medicina moderna rimarrà una forza mutila al cospetto delle epidemie, a meno di non abbandonare la teoria dei germi per guardare ad esse come a bruschi sconvolgimenti ecologici nella cultura umana”.

(A. Nikiforuk, Il quarto cavaliere, Oscar Mondadori, 2008)

La condizione dell’anziano vulnerabile come modello di studio per le interazioni tra germe e ambiente (interno ed esterno)

Alcuni aspetti critici:

- le resistenze batteriche
- Is pneumonia still the old man's friend?
- Il ruolo della polipatologia e della dipendenza funzionale

Un aspetto rilevante, anche perché sfruttato per limitare i trattamenti antibiotici negli anziani

BMJ medical publication of the year

Increasing antituberculosis drug resistance in the United Kingdom: analysis of national surveillance data

Michelle E Kruijshaar, John M Watson, Francis Drobniewski, Charlotte Anderson, Timothy J Brown, John G Magee, E Grace Smith, Alistair Story, Ibrahim Abubakar

BMJ 2008; 336:1231-4

In Europa nel 2005 i batteri resistenti sono stati responsabili di circa il 50% delle 37000 morti per infezioni associate alle cure.

In Belgio dal 1999 al 2006 si è ridotto del 32% il consumo di antibiotici: si iniziano ad intravvedere i segni di una diminuita antibiotico-resistenza allo Streptococcus Pneumoniae

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Antibiotic Therapy in the Demented Elderly Population

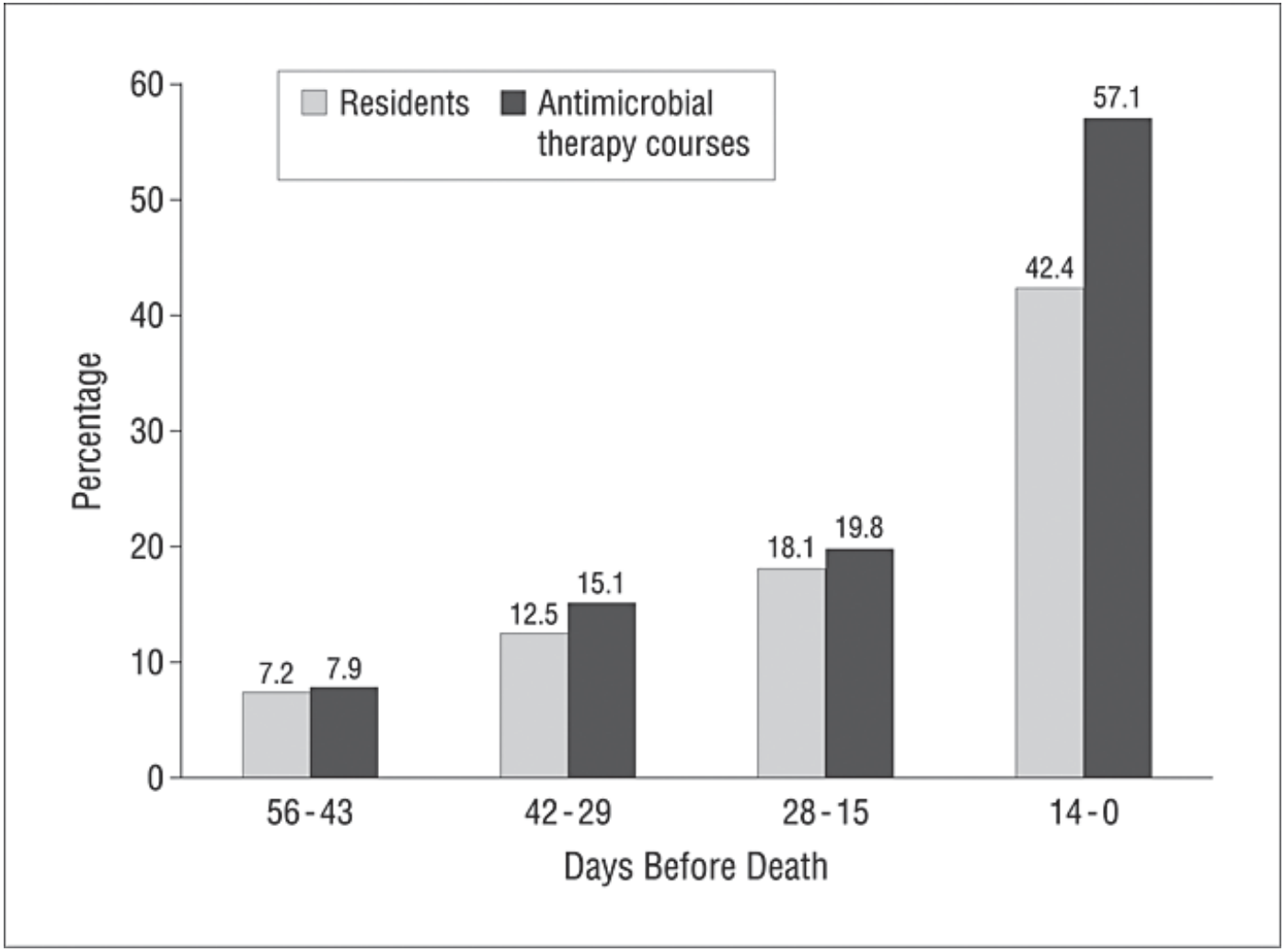
Redefining the Ethical Dilemma

Arch Intern Med. 2008;168(4):349-350.

La risposta clinica ai dilemmi etici.

Il rischio che in geriatria tutto diventi di spettanza etica, espropriando la clinica della propria capacità/dovere di dare risposte razionali

Percentages of nursing home residents with advanced dementia receiving antimicrobials and of antimicrobial therapy courses, among a total of 126 courses prescribed, during the last 8 weeks of life



D'Agata, E. et al. Arch Intern Med 2008;168:357-362.

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If a drug is effective in a disease treatment we must prescribe it independently from its **costs** (money or the risks of negative consequences on other persons). The benefits for a single patient are more important than any other evaluation. Moreover we have to consider that subjects affected by dementia in advanced stages are about 0.5% of the general population, thus their possible contribution to the diffusions on **antibiotic resistant bacteria** is rather scanty, not allowing a decision as a consequence of this motivation. We should compare these problems with those induced, for example, by the diffusion of genetic engineering applied to medicine, which spreads in the environment modified genes. The fear for the possible conseguences isn't sufficient to stop our engagement in studies so important for human health.

The issue regarding **quality of life** as an outcome of treatments is ambiguous. Who may judge the quality of life of a person with a severe cognitive impariment? Do doctors have instruments to assess it? On the other hand, biological parameters are easily measurable, thus being objective outcomes. At present we know that antibiotic therapy exerts its effect on diseases and prolong life, while it does not interfere with the quality of life since it is not invasive and has only a small number of side effects in comparison with resuscitation procedures, mechanical ventilation, etc. , both from the point of view of patients suffering and costs. This fact makes incorrect the comparison of drugs with high technology regarding their use in elderly subjects affected by dementia.

For a physician the cure of a potentially treatable disease, such as pneumonia, is a mandatory duty if drugs are available. Also in subjects affected by severe dementia, in absence of clear advanced directives, we must exert our traditional **attitude toward the cure**. Ethical dilemmas are important, byt the medical profession when treating patients unable of independent decisions must adopt the same clinical criteria as for competent subjects, avoiding doubts which may be source of discomfort, particularly for caregivers.

Alcuni aspetti critici:

Is penumonia still the old man's friend?

Anche se si muore “con la polmonite” e non “di polmonite”, essa accompagna senza dolore la fine degli anziani vulnerabili (gravemente ammalati). Quindi Olsen aveva ragione, anche se la geriatria dovrà comprendere perché la polmonite è una sorta di via comune finale di molte diverse condizioni cliniche.

Table 2. Six-Month Mortality Risk in 1803 Hospitalized Elderly Patients (Cox Regression Analysis)

	No. of Patients/ No. of Events	RR (95% CI)	
		Crude	Adjusted
Pneumonia	241/66	1.5 (1.1-2.1)	1.0 (0.5-2.1)
Cancer	302/111	2.6 (2.0-3.4)	2.1 (1.1-4.1)
Anemia	202/60	2.2 (1.6-2.9)	2.1 (1.2-3.5)
Dementia	319/98	1.9 (1.4-2.5)	1.8 (1.0-4.8)
APS-APACHE II (≥4)	524/150	1.8 (1.4-2.3)	1.7 (1.0-2.9)
Charlson Index (≥4)	303/126	3.5 (2.7-4.6)	2.4 (1.3-4.5)
Chronic renal failure	266/26	1.7 (1.0-2.8)	. . .
Chronic heart failure	228/69	1.7 (1.3-2.4)	. . .
Cor pulmonale	137/44	1.8 (1.3-2.7)	. . .
COPD	662/166	1.4 (1.1-1.8)	. . .
Stroke	231/65	1.5 (1.1-2.1)	. . .
Depression	716/141	1.2 (1.0-1.6)	. . .
Hepatic diseases	101/33	1.8 (1.2-2.8)	. . .
Diabetes mellitus	356/91	1.3 (1.0-2.7)	. . .
Serum albumin (<3.5 g/dL)	365/128	2.7 (2.1-3.5)	. . .
Disability	137/35	1.6 (1.3-2.0)	. . .
Age (≥80 y)	867/199	1.2 (1.0-1.6)	. . .
Male	592/145	1.3 (1.1-1.7)	. . .

Abbreviations: APACHE, Acute Physiology and Chronic Health Examination; APS, Acute Physiology Score; CI, confidence interval; COPD, chronic obstructive pulmonary disease; RR, risk ratio. Ellipses indicate not significantly associated with mortality in the adjusted analysis.

Arch Int Med 2003; 163:1491-2

In reply

We are grateful to van der Steen and colleagues for their observations on the important topic of pneumonia treatment in the elderly. As a contribution to the discussion, we would like to summarize the data obtained in our setting and to propose some comments on this matter.

1.*As reported in our recent article in the ARCHIVES,1elderly patients hospitalized with pneumonia have a higher 6-month mortality rate compared with those affected by other noninfectious diseases;*

2. Patients with pneumonia have a higher burden of somatic, biological, and psychological conditions;

3. While different conditions are associated with 6-month mortality, in adjusted analysis the association between pneumonia and 6-month mortality loses its statistical significance;

4. In end-stage demented patients affected by pneumonia, the 6-month mortality rate is dramatically increased,even if a sizable percentage (20%) remain alive.2

In Osler's time, pneumonia was really the old man's friend, since no drug

treatments were available. Today we practice medicine in a completely

different scenario.

In our clinical practice, we do not withhold antibiotics because

pharmacological treatment can allow patientswith even serious clinical

conditions to survive (see point 4). But because other causes are more

important than pneumonia as determinants of death (see point 3), if we

decide to withhold pneumonia treatment, we should also withhold the

treatment for all other diseases.

However, we often face the difficult decision of adopting life-sustaining

treatments. On one hand, pneumoniainduced death apparently avoids the

Although we appreciate the suggestion by van der Steen and colleagues to

share treatment options with patients, families, and the general public, we

think that the final decision has to be mainly a responsibility of

physicians, who need to adapt moral principles to extremely different and

specific clinical and human conditions.

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1. Rozzini R, Sabatini T, Trabucchi M. Is pneumonia still the old man's friend? *Arch Intern Med*. 2003;163:1491-1492.

2. Rozzini R, Sabatini T, Trabucchi M. Medical treatment of acute illnesses in end-stage dementia. *Arch Intern Med*. 2003;163:496-497.

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).

Arch Intern Med 2003; 163:496-7

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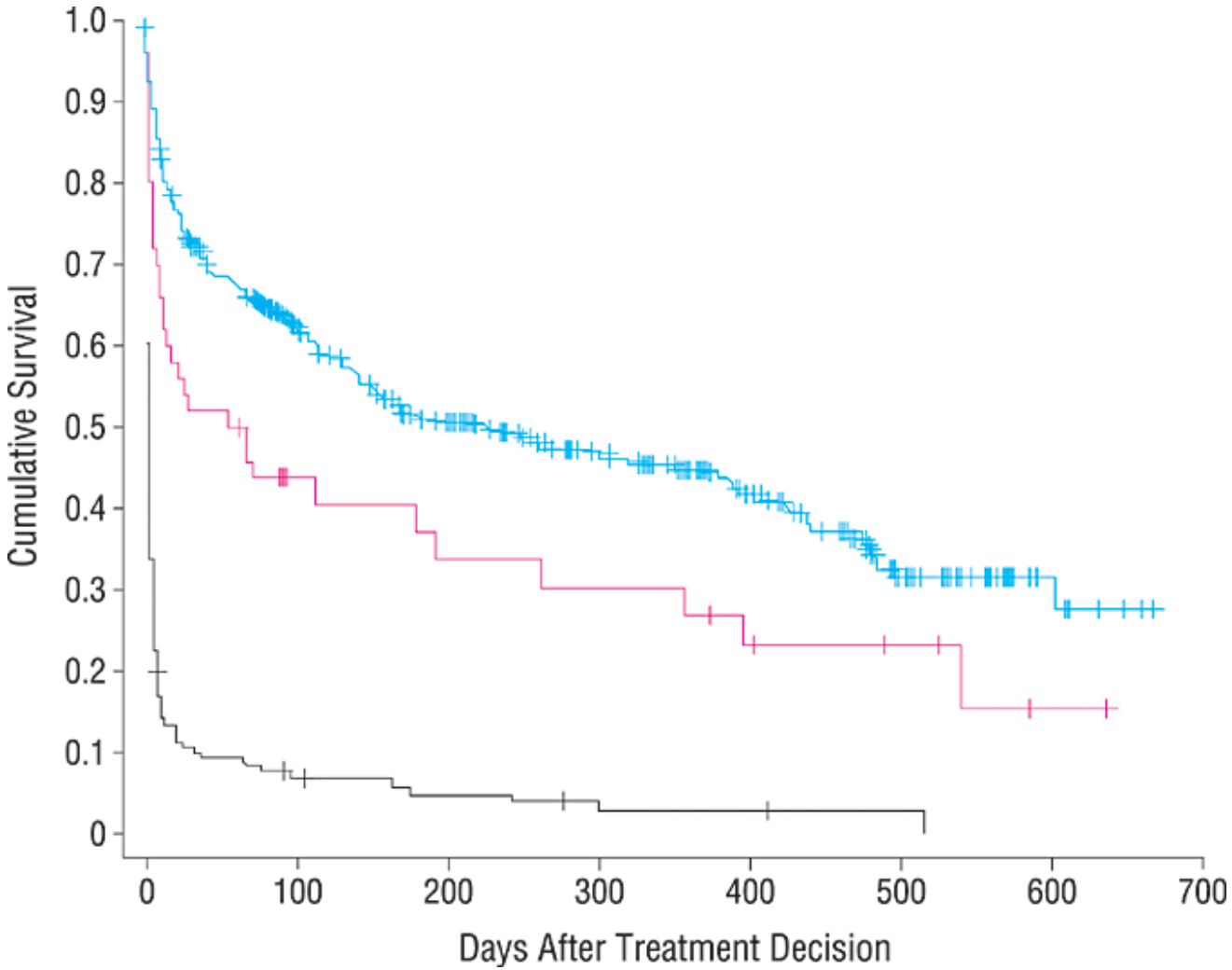

van der Steen, J. T. et al. Arch Intern Med 2003;163:497-498.

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La scelta clinica predomina sulle valenze etiche

Alcuni aspetti critici:

il ruolo della polipatologia e della dipendenza funzionale

Community Acquired Pneumonia patients and the site of treatment: hospital ward vs Sub-Intensive Care Unit

Renzo Rozzini, Intissar Sleiman, Piera Barbisoni, Marco Trabucchi.

Table. Characteristics and mortality rates of 365 in patients affected by Community Acquired Pneumonia (CAP) according to setting of admission (ward vs Sub-ICU).

	Ward (N=191)	SICU (N=174)	*p*
	M±SD (%)	M±SD (%)	
Age (years)	81.7±8.1	80.0±8.9	*0.051*
Gender (males)(%)*	(36.2)	(57.9)	*0.000*
MMSE score	19.2±9.2	17.2±10.6	*0.063*
GDS score	4.6±3.1	3.7±2.9	*0.030*
Barthel Index (15 days before admission)	67.0±33.4	58.9±35.5	*0.023*
Barthel Index (on admission)	50.1±38.6	21.7±30.1	*0.001*
IADL (functions lost)	4.3±3.1	4.5±2.9	*0.529*
Charlson Index	4.9±1.8	6.6±1.9	*0.001*
Drugs (n)	4.0±2.1	8.0±3.1	*0.001*
APACHE II score	13.5±4.9	17.0±6.0	*0.001*
APACHE II-APS subscore	4.2±4.0	10.2±5.4	*0.001*
Serum Albumin (g/dl)	3.5±0.6	3.1±0.6	*0.001*
Hemoglobin (g/dl)	12.1±2.1	12.2±2.3	*0.686*
Serum Cholesterol (mg/dl)	167.1±50.0	158.9±50.4	*0.119*
CPR (mg/dl)	8.1±9.9	11.4±10.2	*0.002*
Creatinine (mg/dl)	1.2±0.8	1.4±1.0	*0.017*
Length of stay (days)	7.7±4.1	7.5±4.3	*0.373*
Length of stay in SICU (hours)	---	77.9±68.4	---
DRG weight	1.2±0.2	1.7±0.5	*0.001*
30 days mortality (%)*	(6.8)	(23.6)	*0.001*
90 days mortality (%)*	(11.7)	(33.3)	*0.001*

*Student t test and *chi-square test.*

CAP patients admitted to the Sub-ICU and significantly higher 30-day and 90-day mortality rates. The outcome of an acute lower respiratory tract infection depends not only on the virulence of the organism and the inflammatory responses in the lung, but also on the impariment of defenses on the patients. This could be particularly true in a population of very old and frail subjects such ours. The prevalence of patients affected by dementia further supports the role of frailty in the pathogenesis of lower respiratory infections.

The Sub-ICU is a new model of care for elderly patients where intensivists abd geriatricians have the opportunity to dialogue about what to do and how it can affect the patient conditions after he/she has left the hospital. In this conditions the permanences in SICU on the first period after hospital admission allows a LOS of patients with severe disease comparable to that of less compromised. However no data are available on the possible influence of settings on the final outcomes of CAP patients. A crucial question does ICU, and in general intensive care approaches, improve patient's survival?

As suggested by Shorr et Wunderink, data indicate the need of an integrated care (acute, post-acute, rehabilitation, and home care strategies) to give attention to the most frail elderly subjects affected by CAP?

Table 1. Characteristics of 125 Hospitalized Elderly Patients with Pneumonia According to Their Premorbid Functional Status

Characteristic	Total n = 125	Functionally Independent n = 64	Functionally Dependent n = 61	*P*-value*
Age, mean ± SD	81.0 ± 7.9	80.5 ± 8.4	81.6 ± 7.1	.43
Female, n (%)	72 (57.6)	33 (51.6)	39 (63.9)	.16
Mini-Mental State Examination score, mean ± SD	19.3 ± 9.5	23.2 ± 6.2	15.1 ± 10.7	.00
Geriatric Depression Scale score, mean ± SD	5.2 ± 3.3	4.9 ± 3.1	6.1 ± 3.5	.06
Barthel Index score, mean ± SD				
Before hospitalization	70.1 ± 31.9	94.7 ± 5.5	44.3 ± 27.4	.00
At admission	52.4 ± 37.2	78.4 ± 25.1	25.1 ± 26.7	.00
At discharge	55.4 ± 38.1	80.8 ± 26.1	28.8 ± 29.5	.00
Number of instrumental activities of daily living lost before hospitalization, mean ± SD	4.4 ± 2.9	3.0 ± 2.6	5.8 ± 2.5	.00
Charlson Comorbidity Index, mean ± SD	3.9 ± 2.7	3.0 ± 1.8	4.7 ± 3.1	.00
APACHE II score, mean ± SD	15.1 ± 5.8	13.9 ± 5.9	16.4 ± 5.5	.02
APACHE II acute physiologic subscore, mean ± SD	4.3 ± 4.4	3.5 ± 4.6	5.2 ± 4.1	.03
Number of drugs, mean ± SD	4.2 ± 2.2	4.0 ± 2.1	4.5 ± 2.2	.24
Serum albumin, g/dL, mean ± SD	3.5 ± 0.6	3.7 ± 0.6	3.3 ± 0.6	.002
6-month mortality, n (%)	30 (24)	9 (14.1)	21 (34.4)	.008

*chi-square test for comparing frequencies and Student *t*-test for comparing means.
SD = standard deviation; APACHE = Acute Physiology and Chronic Health Evaluation.

JAGS 55:308–317, 2007

0002-8614/06/$15.00

La dipendenza funzionale premorbosa come indicatore di una condizione “stabile” di fragilità.

La perdita di funzione indotta dalla polmonite come ulteriore marker di vulnerabilità

“Perché per quanto gli uomini d’oggi ci provino, non possono sconfiggere il superorganismo, corrompere il Quarto Cavaliere o ignorare l’incombere perenne delle epidemie nella storia.
Né devono dimenticare la presenza del Primo Cavaliere, la speranza”

(A. Nikiforuk, ibidem)