IX congresso nazionale
simeu
TORINO 6-8 NOVEMBRE 2014

NIMV CAP SEVERA

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Fondazione IRCCS Ca' Granda Ospedale Maggiore Policlinico
Milano

ricovero?

dove?

sepsi grave

Table 4. Criteria for severe community-acquired pneumonia.

Minor criteria[a]
Respiratory rate[b] ≥30 breaths/min
PaO_2/FiO_2 ratio[b] ≤250
Multilobar infiltrates
Confusion/disorientation
Uremia (BUN level, ≥20 mg/dL)
Leukopenia[c] (WBC count, <4000 cells/mm^3)
Thrombocytopenia (platelet count, <100,000 cells/mm^3)
Hypothermia (core temperature, <36°C)
Hypotension requiring aggressive fluid resuscitation
Major criteria
Invasive mechanical ventilation
Septic shock with the need for vasopressors

insufficienza respiratoria acuta

Table 4. Criteria for severe community-acquired pneumonia.

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ATS/IDSA 2007 CAP guidelines

Aliberti et al. Respiratory Research 2014, 15:27
http://respiratory-research.com/content/15/1/27

RESPIRATORY RESEARCH

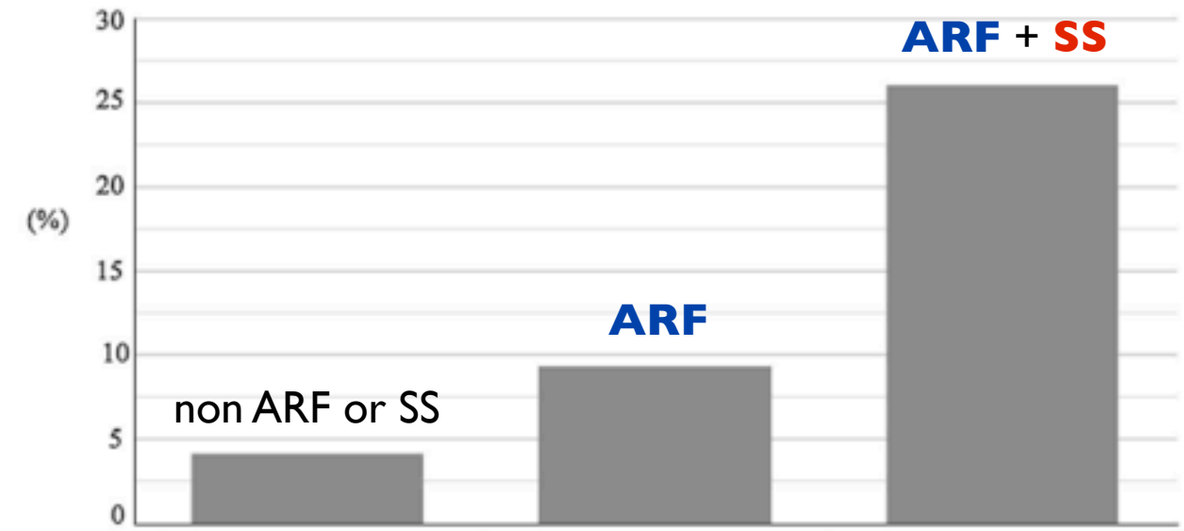
RESEARCH Open Access

Phenotyping community-acquired pneumonia according to the presence of acute respiratory failure and severe sepsis

Stefano Aliberti[1], Anna Maria Brambilla[2], James D Chalmers[3], Catia Cilloniz[4], Julio Ramirez[5], Angelo Bignamini[6], Elena Prina[2], Eva Polverino[4], Paolo Tarsia[7], Alberto Pesci[1], Antoni Torres[4], Francesco Blasi[7*] and Roberto Cosentini[2]

36% arf

20% arf + ss



	Group A (Neither ARF nor SS)	Group B (Only ARF)	Group C (Both ARF and SS)
All patients, n.	954 (45)	771 (36)	420 (20)
Patients who died, n.	43	72	108
Patients who died, % (95%CI)*	4.2 (3.3-6.1)	9.3 (7.4-11.7)	26 (22-30)

* p<0.001 among three groups

Figure 1 In-hospital mortality of the study population according to the three study groups. Group A: Community-acquired pneumonia (CAP) patients with neither acute respiratory failure (ARF) nor severe sepsis (SS) on admission. Group B: CAP patients with only ARF on admission. Group C: CAP patients with both ARF and SS on admission. n: number.

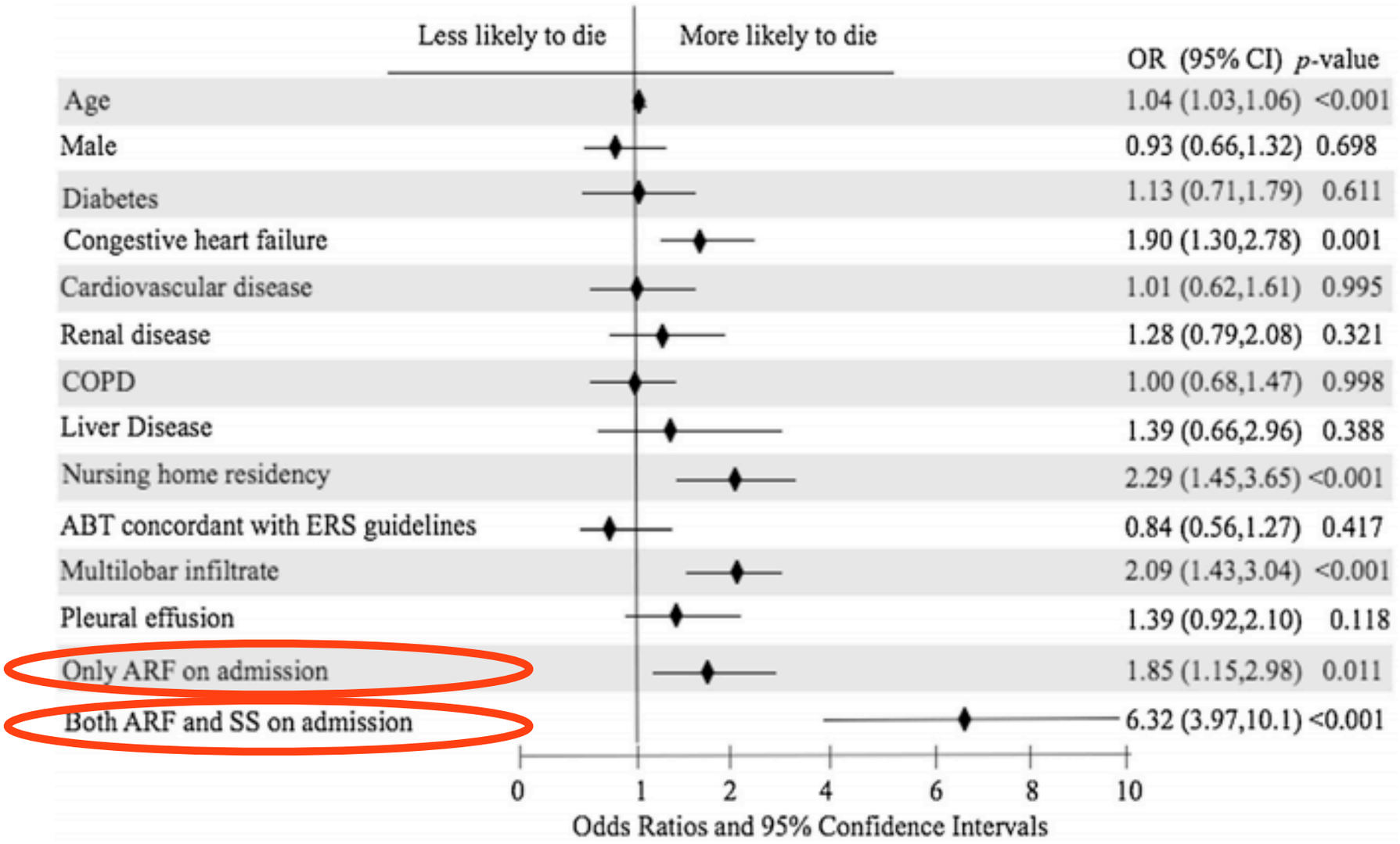
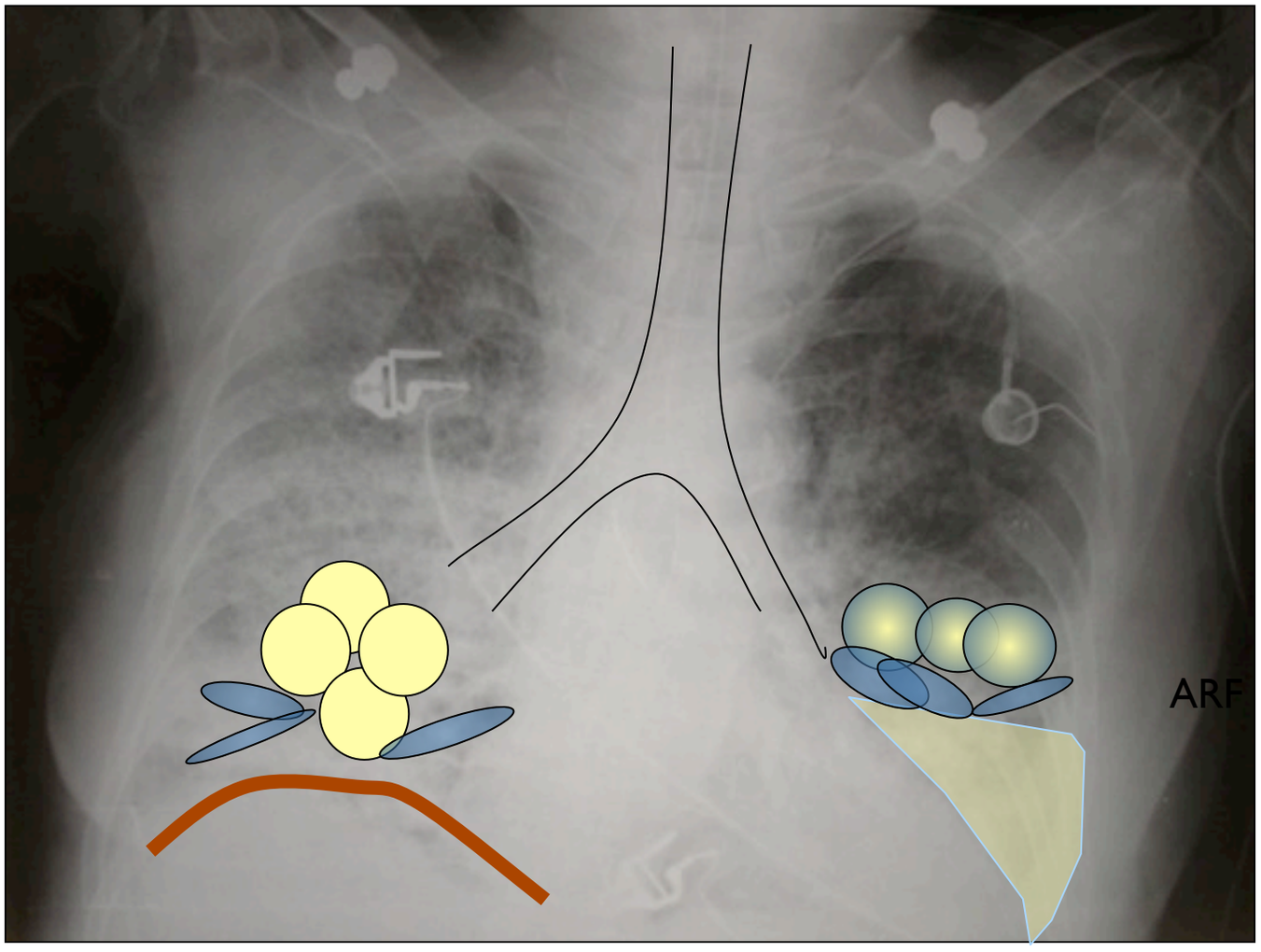


Figure 3 Multivariable logistic model with respect to in-hospital mortality. ARF: acute respiratory failure; SS: severe sepsis; COPD: chronic obstructive pulmonary disease; ABT: antibiotic empiric therapy; ERS: European Respiratory Society; OR: odds ratio; CI: confident intervals. All the variables are present vs. absent, but age (1-year change), male (vs. female) and multilobar (vs. monolobar).

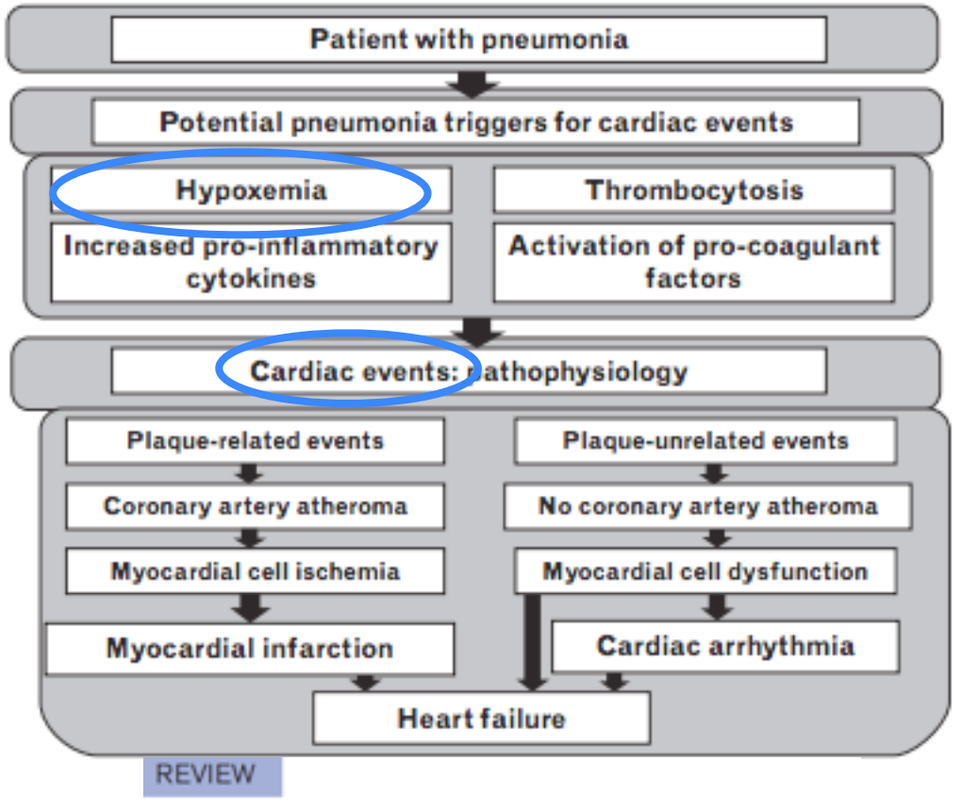
IPOSSIA



ipoperfusione tissutale

infiammazione

ossigeno ponte all'efficacia antibioticoterapia



REVIEW

Cardiac diseases complicating community-acquired pneumonia

Stefano Aliberti[a] and Julio A. Ramirez[b]

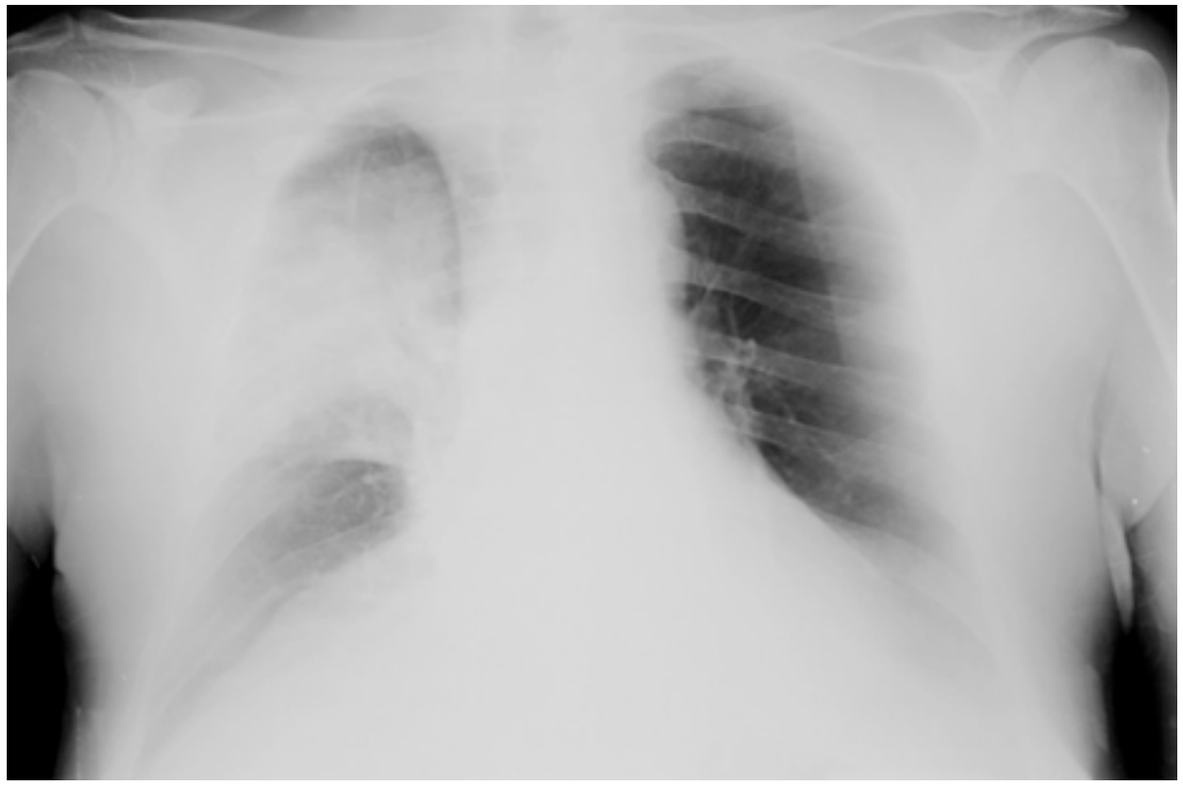
CHEST Original Research

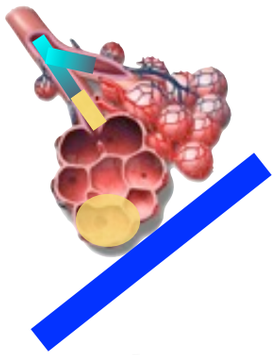
CHEST INFECTIONS

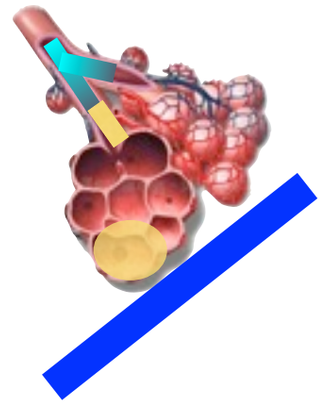
Early Cardiac Arrest in Patients Hospitalized With Pneumonia

danni cardiovascolari

effetto shunt







O_2 terapia

shunt non migliora

PRESSIONE POSITIVA

NIV e POLMONITE

guidelines

ipossiemia

immunodepresso

DNI

Polipatologico

trapiantato

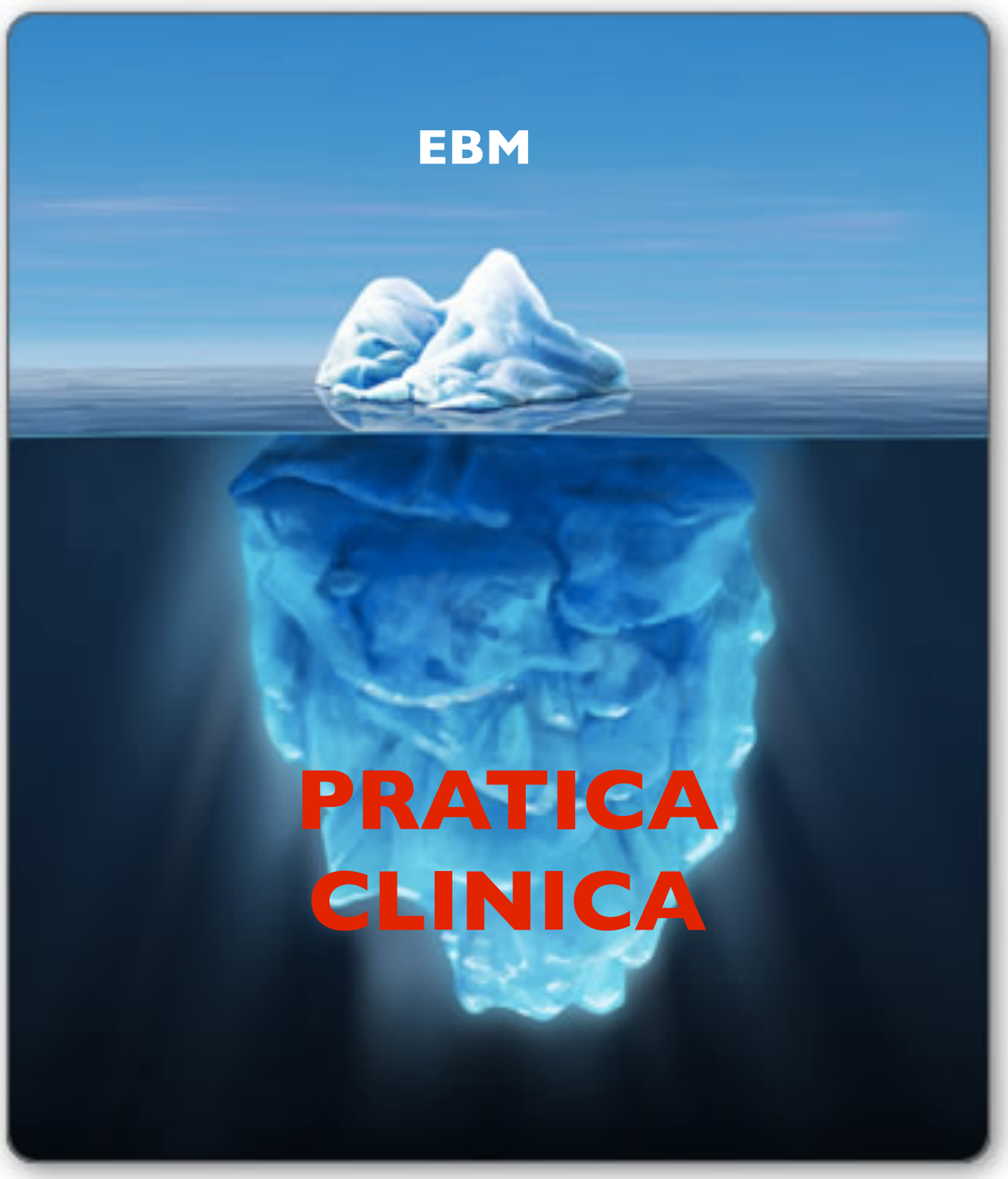
anziano

immunocompetente

primo tentativo nell'ARF

pandemie virali

10% dell'uso della NIV per
de novo ARF in europa



osservazionali

- ipossiemico
  - Antonelli 2001
  - Wang 2013 (retro, arf)
  - Thille 2013
- immunodepresso
  - Gregg 1990
  - Conti 1998
  - Hilbert 2000
  - Azoulay 2001
  - Confalonieri 2002
  - Rabitsch 2005
- polmonite
  - Nicolini, 2012 H1N1
  - Stefan 2013 ARF
  - Jolliet 2001
  - Carron 2010
  - Nicolini 2014
  - Carrillo 2012
  - Masclans 2013
  - DOmenighetti 2002

RCT

- ipossiemico
  - Ferrer 2003
  - DelClaux 2000 (tutti)
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  - Gachot 1992
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  - Principi 2004
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OXYGEN THERAPY FOR PNEUMONIA IN ADULTS (REVIEW)

Cochrane Database Syst Rev. 2012 Mar

Confalonieri 1999

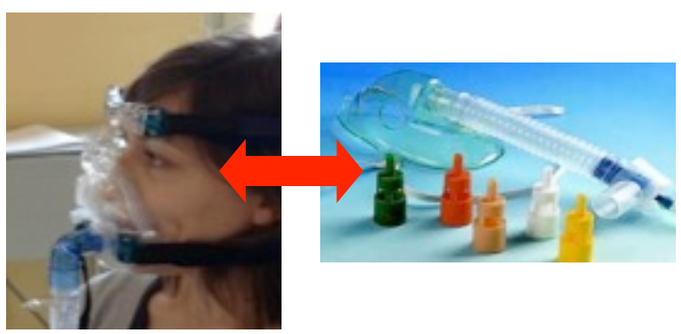
RCT, multicentre

CAP grave

Inclusi: acidosi respiratoria acuta

56 pazienti (41% BPCO) – ICU

NPPV maschera
vs venturi mask



Hillbert 2001

RCT

Immunodepressi con
– infiltrati polmonari
- febbre
- P/F<200 in venturi

Esclusi: acidosi respiratoria acuta, causa cardiaca

52 pazienti – ICU

NPPV maschera
vs venturi mask

Cosentini 2010

RCT, multicentrico

CAP
con ipossiemia
moderata

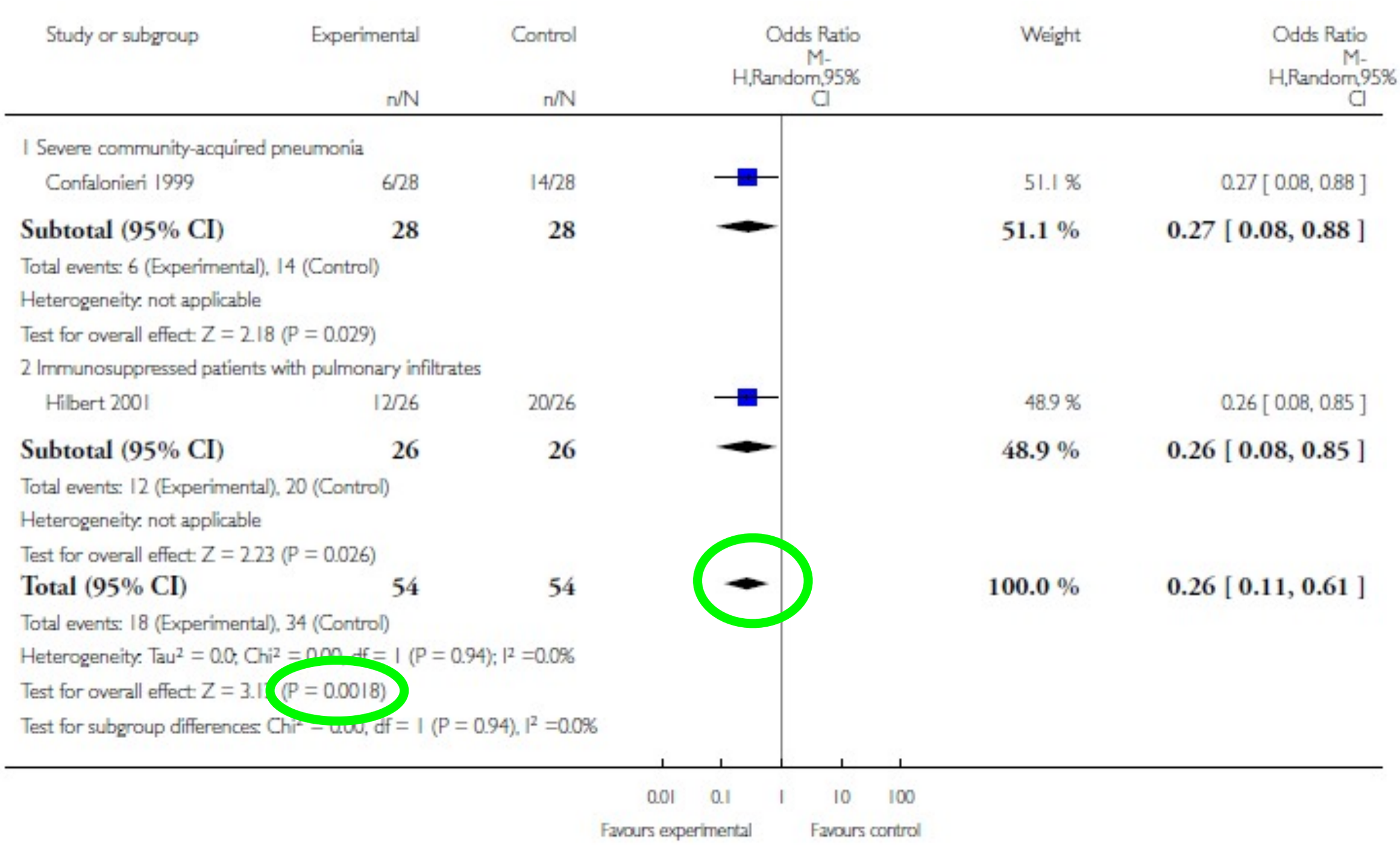
Esclusi: acidosi respiratoria acuta, causa cardiaca

57 pazienti – ED

CPAP con helmet
vs maschera venturi

OXYGEN THERAPY FOR PNEUMONIA IN ADULTS (REVIEW)

Cochrane Database Syst Rev. 2012 Mar



Conclusioni

Authors' conclusions

Non-invasive ventilation can reduce the risk of death in the ICU, endotracheal intubation, shorten ICU stay and length of intubation. Some outcomes and complications of non-invasive ventilation were varied according to different participant populations. Other than the oxygen therapy, we must mention the importance of standard treatment by physicians. The evidence is weak and we did not include participants with pulmonary tuberculosis and cystic fibrosis. More RCTs are required to answer these clinical questions. However, the review indicates that non-invasive ventilation may be more beneficial than standard oxygen supplementation via a Venturi mask for pneumonia.

non-invasive ventilation may be more beneficial than standard oxygen supplementation

The evidence is weak

More RCTs are required to answer these clinical questions.

Intensive Care Med. 2014 Jul;40(7):942-9.

Intensive Care Med
DOI 10.1007/s00134-014-3325-5

ORIGINAL

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Helmet CPAP vs. oxygen therapy in severe hypoxemic respiratory failure due to pneumonia

inclusion criteria

pneumonia
distress, RR> 30, PF<250

Table 2 Primary endpoint

	CPAP group ($n = 40$)	Control group ($n = 41$)	p
Met ETI criteria, *n* (%)	6 (15.0)	26 (63.4)	<0.001
Major criteria			
Hemodynamic instability	0	1	0.320
Intolerance to device	2	0	0.463
Minor criteria			
PO_2/FiO_2 ratio dropped by ≥30 % from baseline	3	13	0.014
Worsening of alertness	0	3	0.248
New onset or persistent respiratory distress	4	24	<0.001
SpO_2 <90 %	1	11	0.006
Exhaustion	0	4	0.130

CPAP continuous positive airway pressure, *n* number, *ETI* endotracheal intubation, *SpO₂* oxygen saturation. Twenty-four patients met two criteria, three patients met one criteria, and five patients met three criteria of ETI. Other major criteria such as respiratory arrest and respiratory pauses with unconsciousness, and other minor criteria such as increasing of 20 % of $PaCO_2$ if basal $PaCO_2$ was 40 mmHg or higher were met in neither study group

number needed to treat: 2 (CI95% 1-3)

entro le 12 ore peggioramento

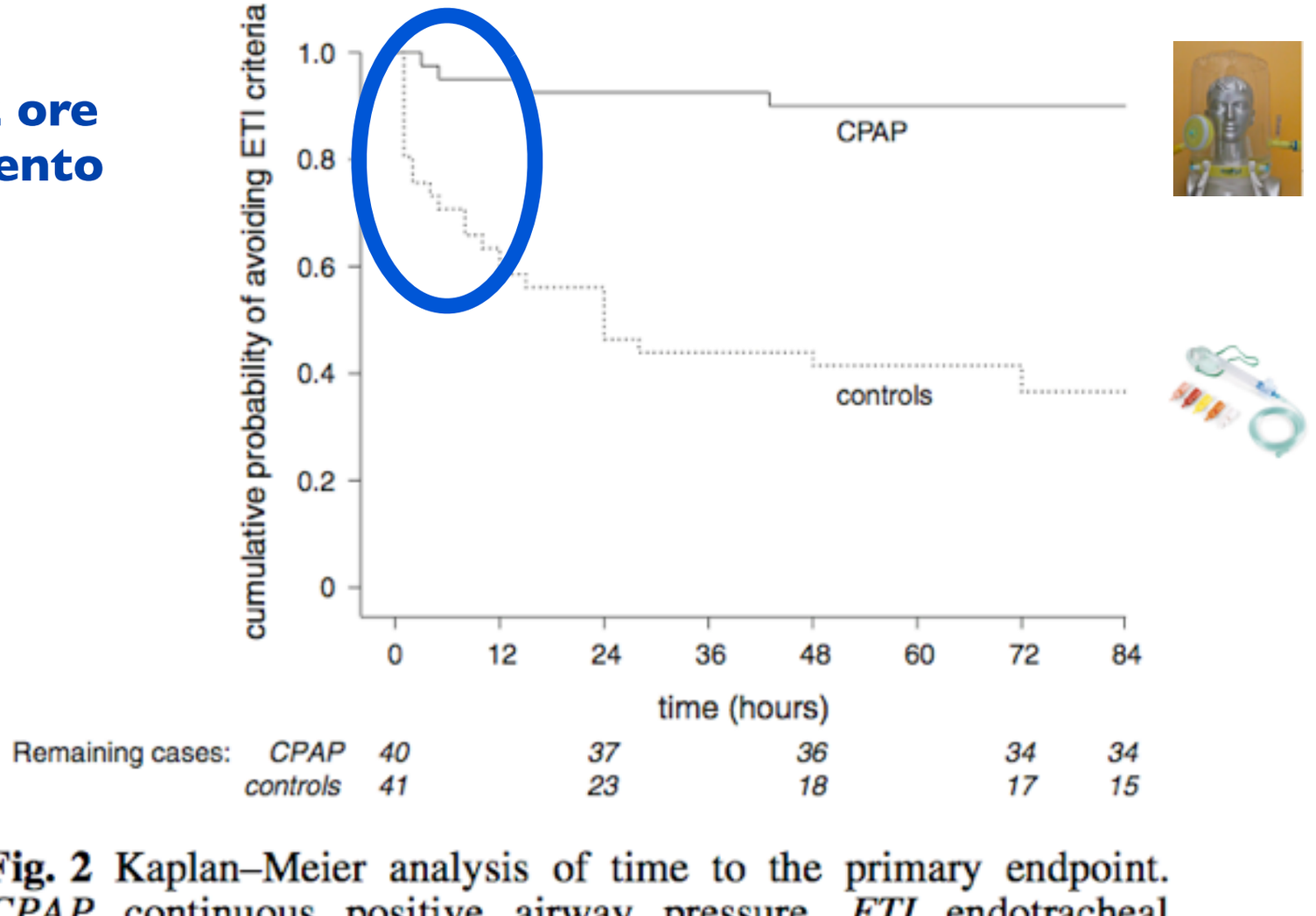

Fig. 2 Kaplan–Meier analysis of time to the primary endpoint. *CPAP* continuous positive airway pressure, *ETI* endotracheal intubation

RESULTS: Between February 2010 and 2013, 40 patients were randomized to CPAP and 41 to Venturi mask. The proportion of patients meeting ETI criteria in the CPAP group was significantly lower compared to those in the control group (6/40 = 15% vs. 26/41 = 63%, respectively, $p < 0.001$; relative risk 0.24, 95% CI 0.11-0.51; number needed to treat, 2) two patients were intubated in the CPAP group and one in the control group. The CPAP group showed a faster and greater improvement in oxygenation in comparison to controls ($p < 0.001$). In either study group, no relevant adverse events were detected.

Conclusions

Helmet CPAP reduces the risk of meeting ETI criteria compared to oxygen therapy in patients with severe hARF due to pneumonia.

Intensive Care Med (2012) 38:458–466
DOI 10.1007/s00134-012-2475-6

ORIGINAL

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Antoni Torres

Non-invasive ventilation in community-acquired pneumonia and severe acute respiratory failure

studio prospettico 184 pts in ICU
successo NIV 64%

Fallimento NIV

46% in de novo ARF
vs
30% in precedente malattia cardio/respiratoria
(p 0.007)

Fattori rischio mortalità

dopo 1 ora di NIV: alta FC, basso pO_2/FiO_2,
fallimento NIV
SOFA
età

STUDIO PROSPETTICO OSSERVAZIONALE MULTICENTRICO "REAL LIFE" SULL'USO DELLA CPAP/NIV NEL TRATTAMENTO DELLA POLMONITE

studio "3P"
Pneumonia
Positive
Pressure

nel 2013, **20** Centri Italiani, **342** polmoniti trattate con CPAP/NIV

	CPAP (171)	NIV (171)
Efficacia	106 (62%)	108 (63%)
Interruzione x intolleranza	**10 (6%)**	**12 (7%)**
Passaggio a NIV	33 (19%)	/
IOT	**11 (6.4%)**	**22 (12.9%)**
mortalità	43 (25%)	40 (23.4%)

Fattori prognostici di mortalità

età
polmonite bilaterale
anemia
azotemia alta
PSI alto

DNI
neoplasia
sepsi grave

protettivi
obesità
BPCOr

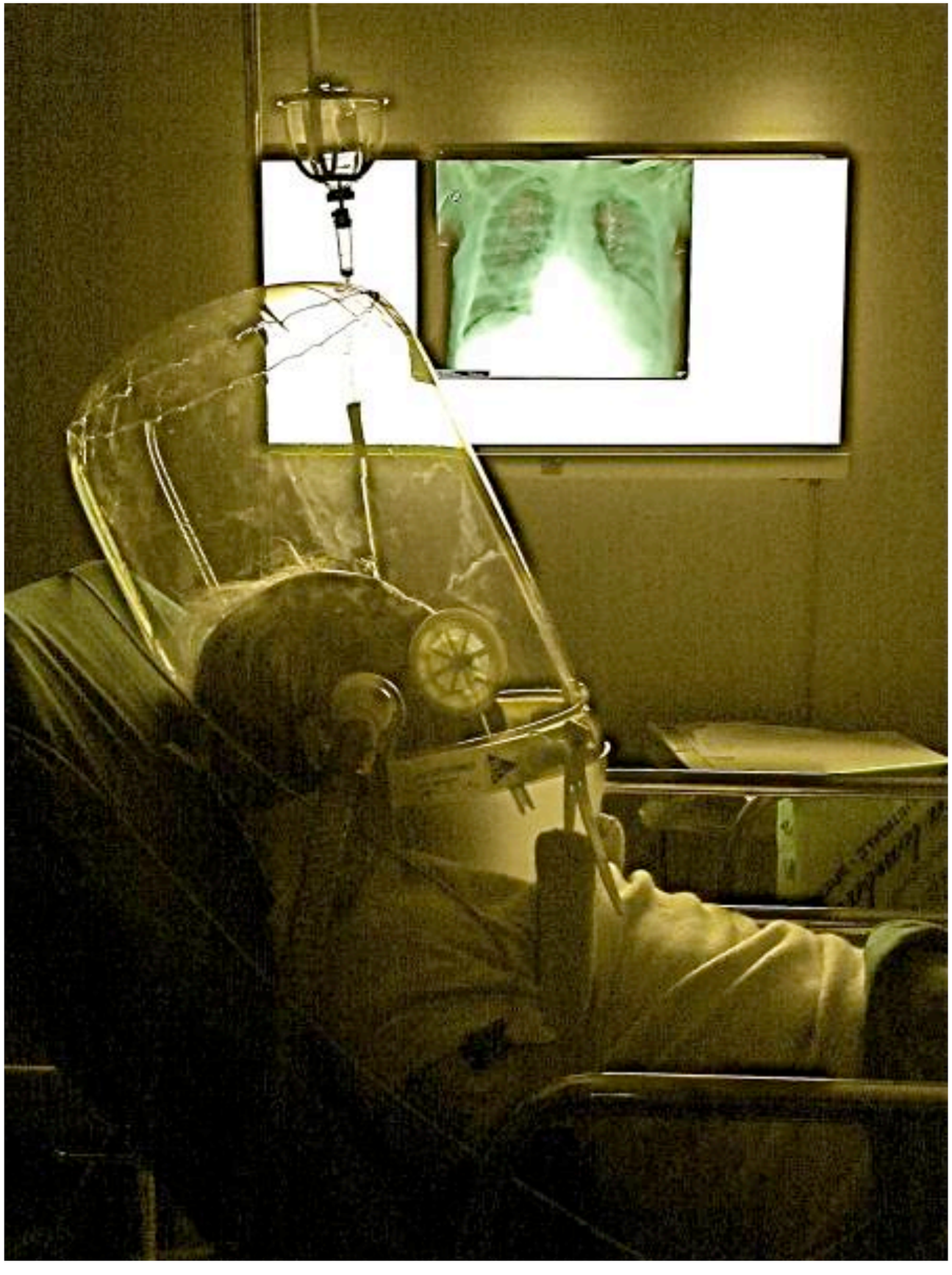
1.

2. 1 o 2 pressioni?

3.

monitoraggio

4. don’t delay ETI if necessary



grazie per
l’attenzione