Insufficienza cardiaca cronica nell'anziano

"La gestione di un paziente complesso"

Dr. Samuele Baldasseroni

27 Novembre 2015

REVIEW ARTICLE

Journal of Gerontology: MEDICAL SCIENCES
2001, Vol. 56A, No. 2, M88–M96

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Heart Failure in the 21st Century: **Cardio**Geriatric Syndrome

Michael W. Rich

Washington University School of Medicine, St. Louis, Missouri.

Dove risiede la complessità?

Chronic management

Acute worsening

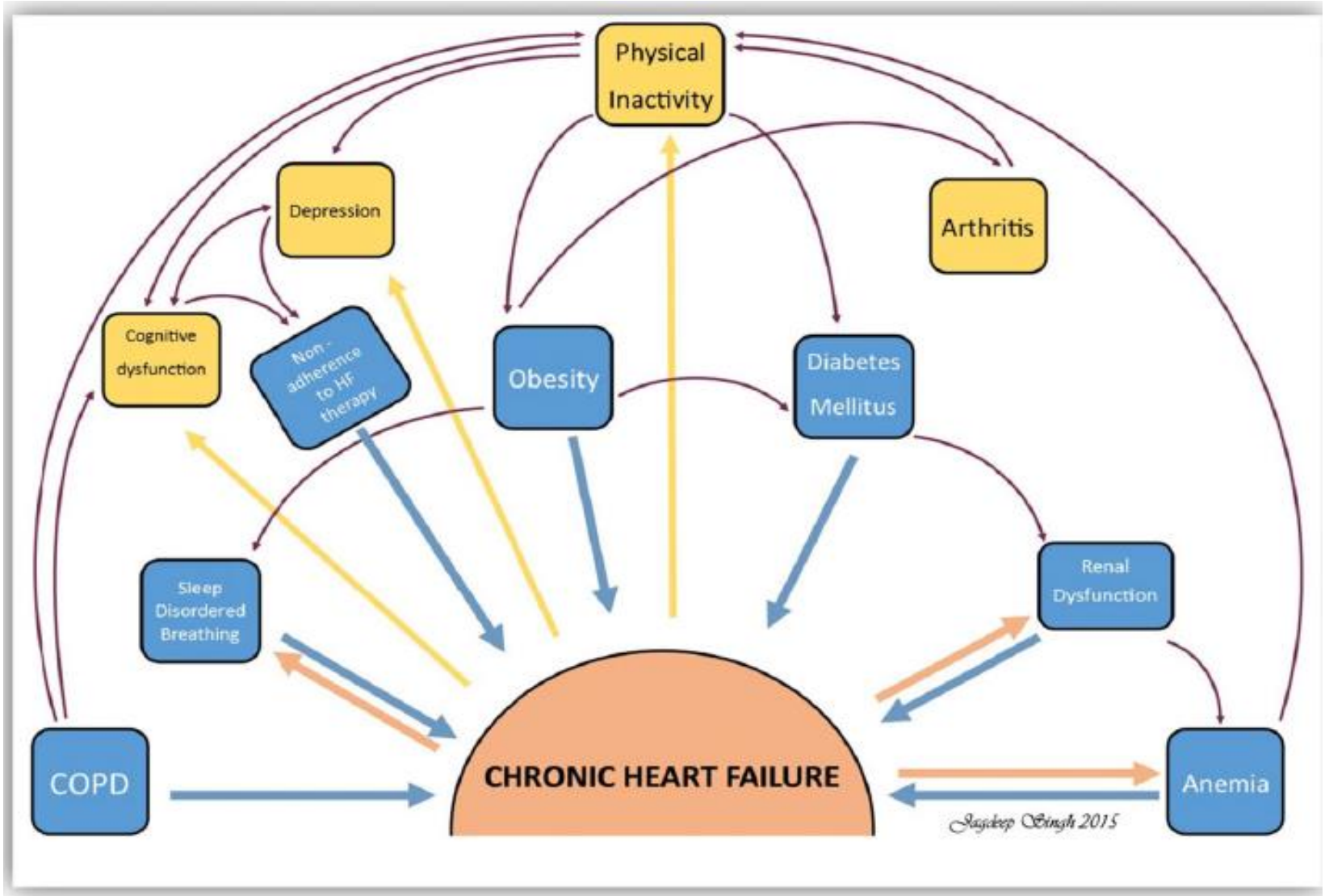
Follow-up

End of life

Chronic management

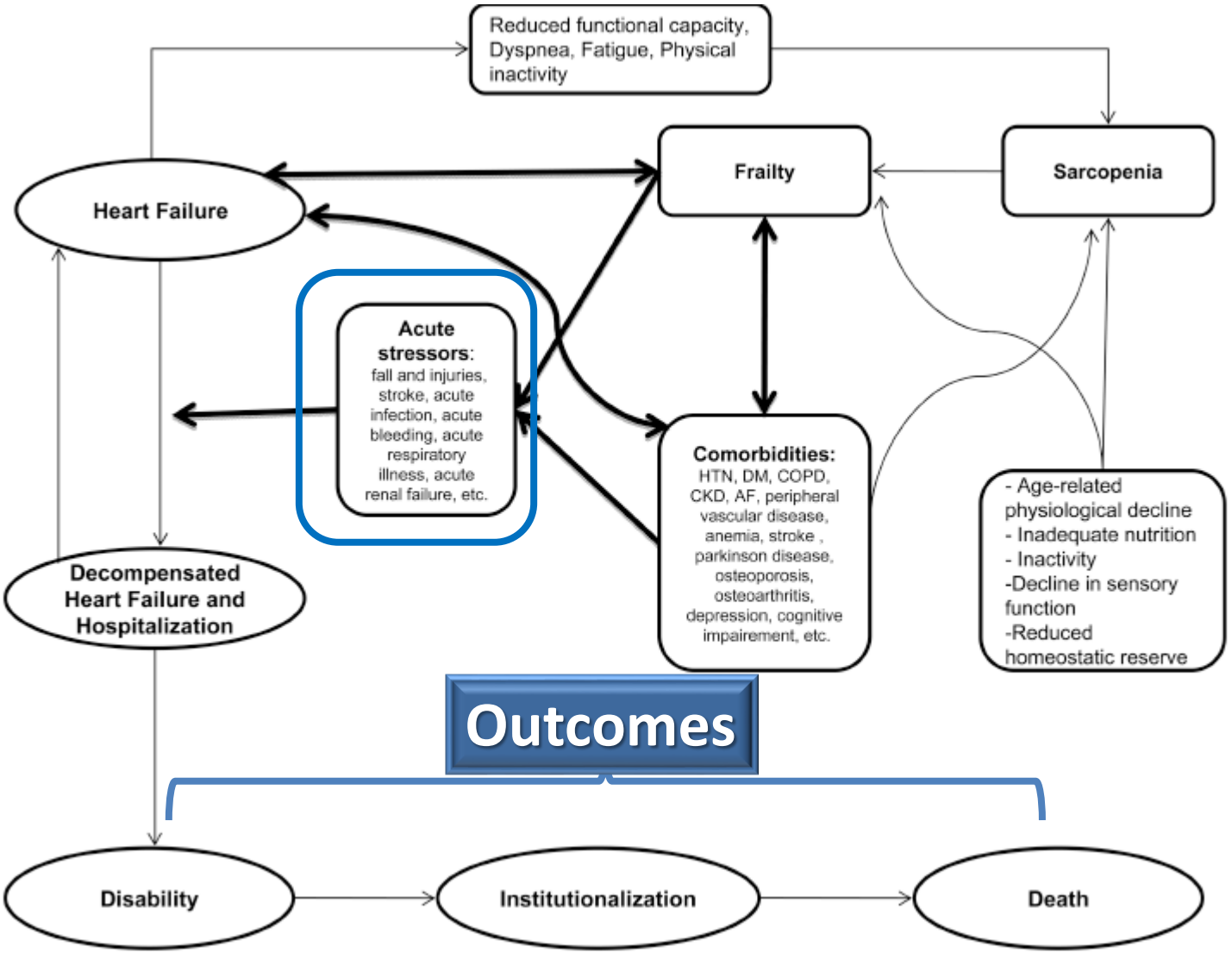
Management of Noncardiac Comorbidities in Chronic Heart Failure

Vun Heng Chong,[1] Jagdeep Singh,[2] Helen Parry,[1] Jocelyn Saunders,[3] Farhad Chowdhury,[3] Donna M. Mancini,[4] & Chim C. Lang[1]



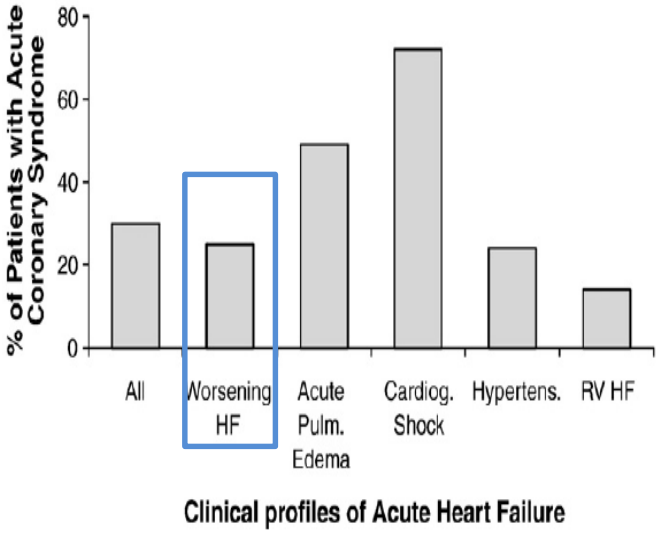
Frailty and Multiple Comorbidities in the Elderly Patient with Heart Failure: Implications for Management

Heart Fail Rev. 2012 September ; 17(0): 581–588.



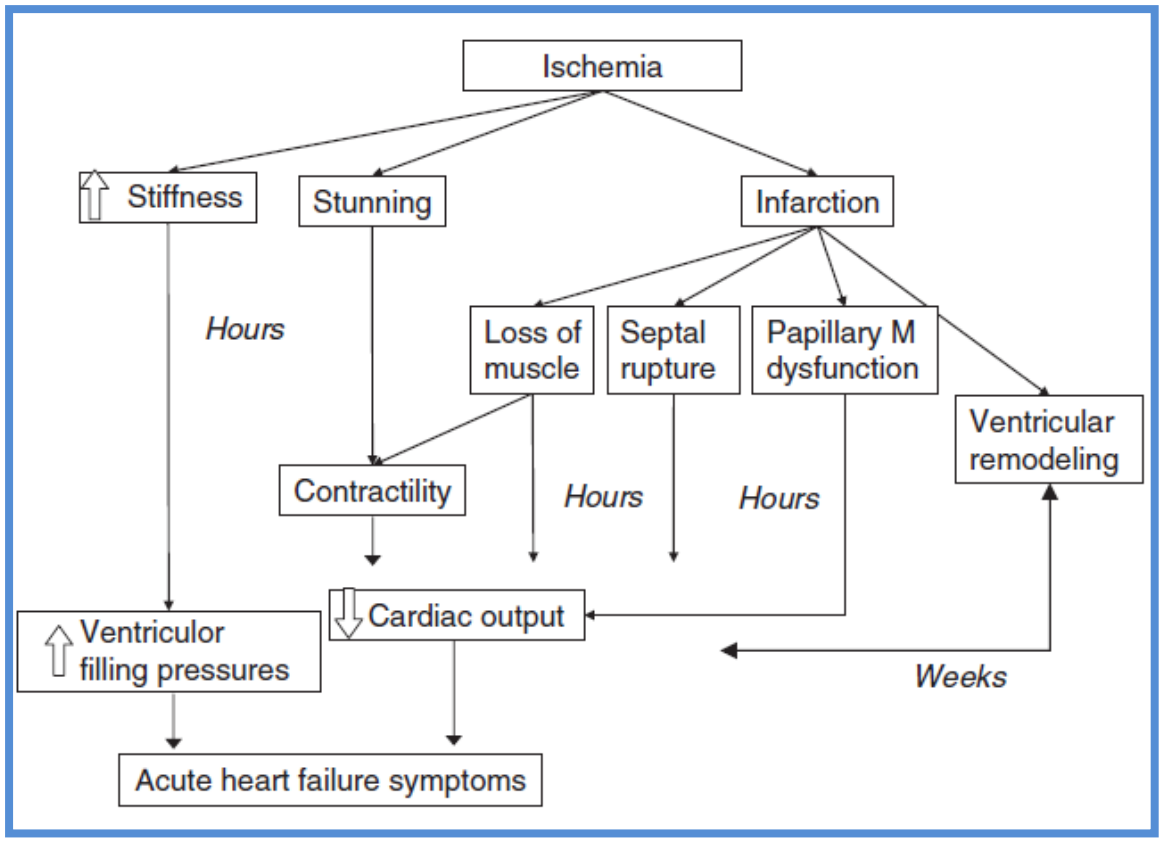
Acute worsening

Stressors cardiologici (ischemia miocardica)



Clinical profiles of Acute Heart Failure

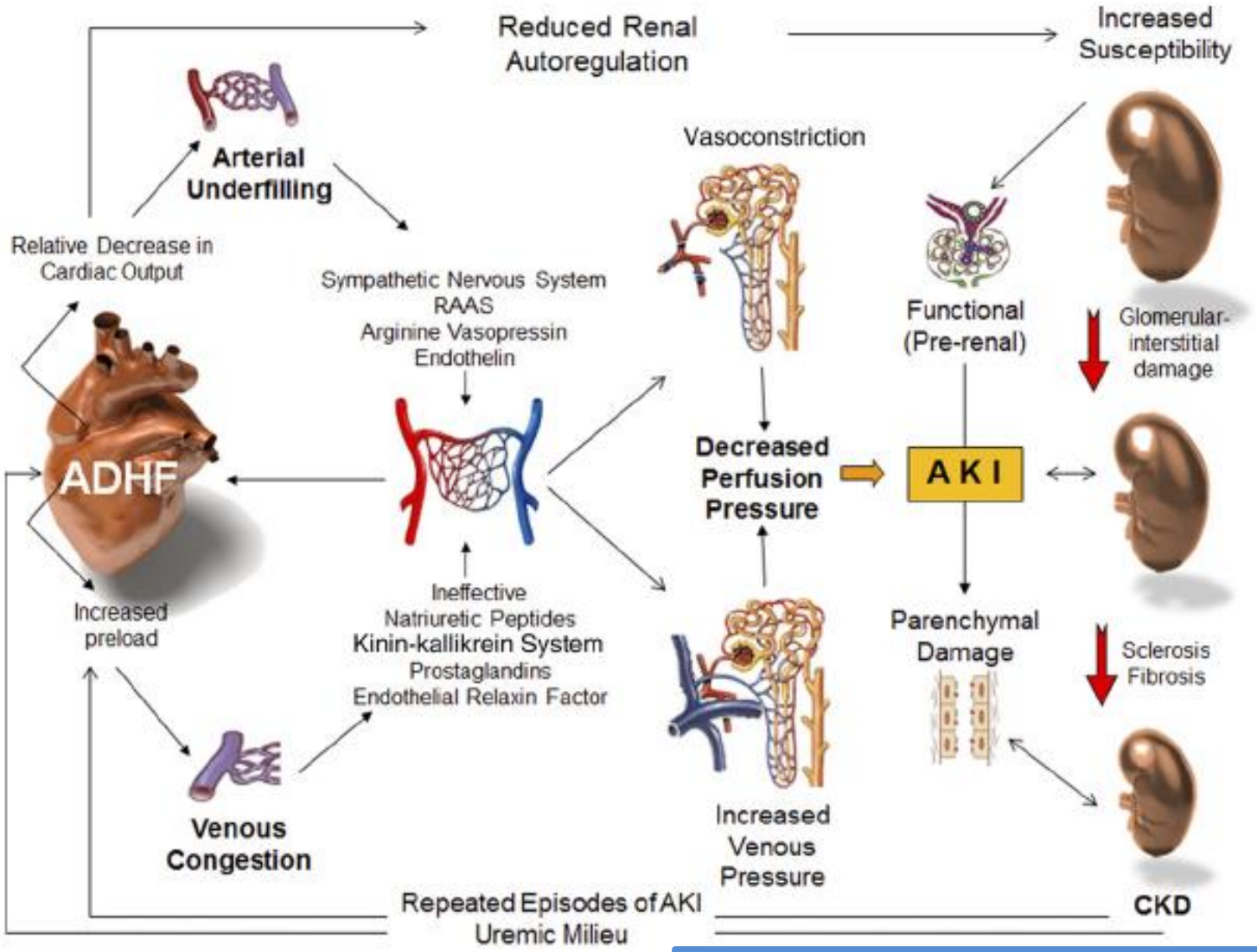
1) The role of ACS as the pathogenic mechanism of acute HF may vary according to the clinical scenario and ACS account for more than half of the cases of cardiogenic shock, the clinical profile of acute HF associated with the highest in-hospital mortality rate .



2) On the other hand, myocardial ischemia and necrosis may occur during an episode of acute HF as a consequence of a transient reduction in coronary perfusion due to increased left ventricular filling pressure, reduced systemic arterial blood pressure, tachycardia, coronary vasoconstriction and endothelial dysfunction mediated by neurohormonal activation

Stressors cardiologici (fluid overload)

Starting point



La sindrome cardio-renale; Type 1

Stressors cardiologici (fluid redistribution)

The pathophysiology of acute heart failure—Is it all about fluid accumulation?

Gad Cotter, MD,[a] G. Michael Felker, MD,[a] Kirkwood F. Adams, MD,[b] Olga Milo-Cotter, MD,[a] and Christopher M. O'Connor, MD[a] *Durham and Chapel Hill, NC*

↓ Riserva contrattile

Senza che sia presente "FLUID ACCUMULATION"

↑ Stiffness Vsx

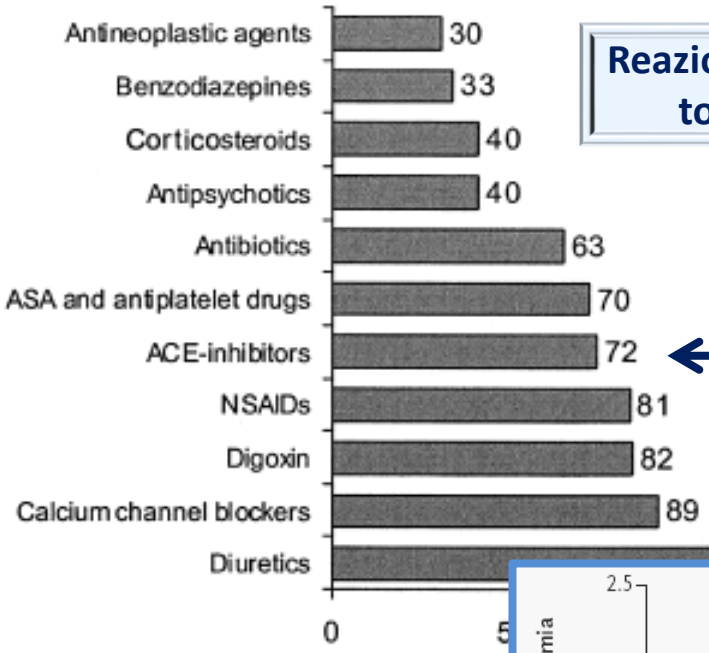
Crisi ipertensiva
Fibrillazione atriale

↑ Wedge pressure

Central fluid redistribution

Pulmonary congestion

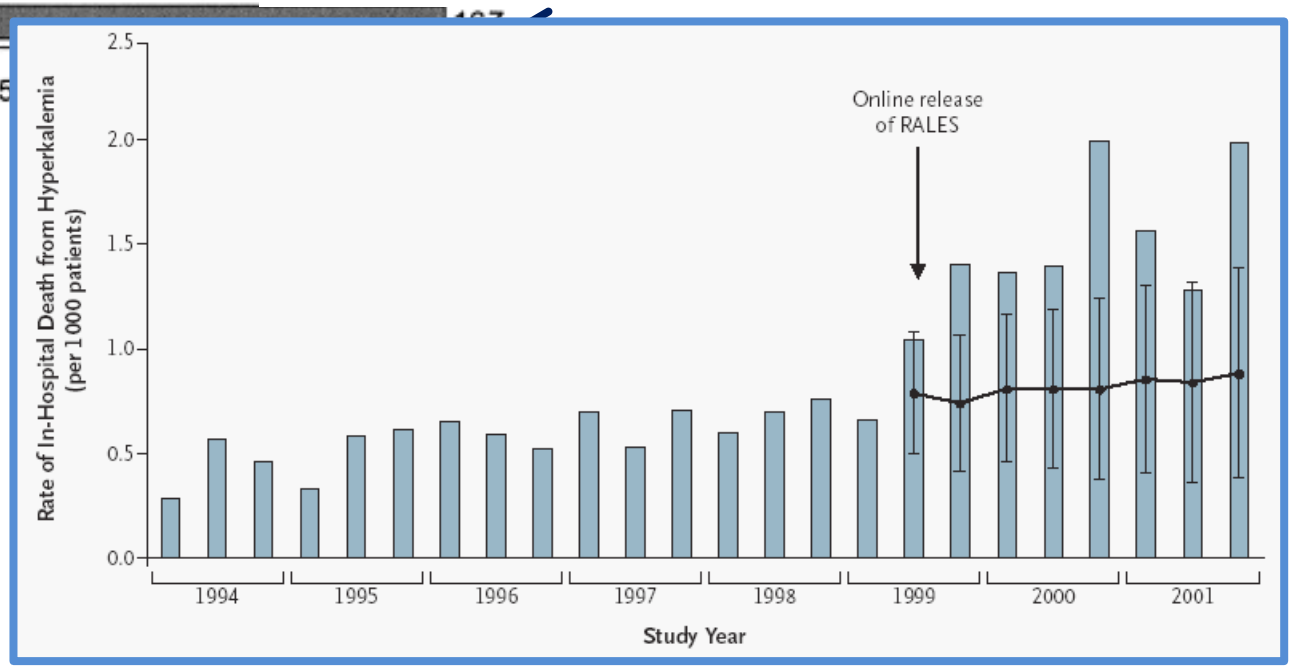
Stressors cardiologici (Adverse Drug Reactions)



Reazioni avverse totali (n)

Rates of Hyperkalemia after Publication of the Randomized Aldactone Evaluation Study

David N. Juurlink, M.D., Ph.D., Muhammad M. Mamdani, Pharm.D., M.P.H., Douglas S. Lee, M.D., Alexander Kopp, B.A., Peter C. Austin, Ph.D., Andreas Laupacis, M.D., and Donald A. Redelmeier, M.D.



Stressors NON cardiologici (Infections)

RESEARCH ARTICLE Open Access

Patients with worsening chronic heart failure who present to a hospital emergency department require hospital care

Masoud Shafazand[1*], Harshidaben Patel[2], Inger Ekman[2], Karl Swedberg[1] and Maria Schaufelberger[1]

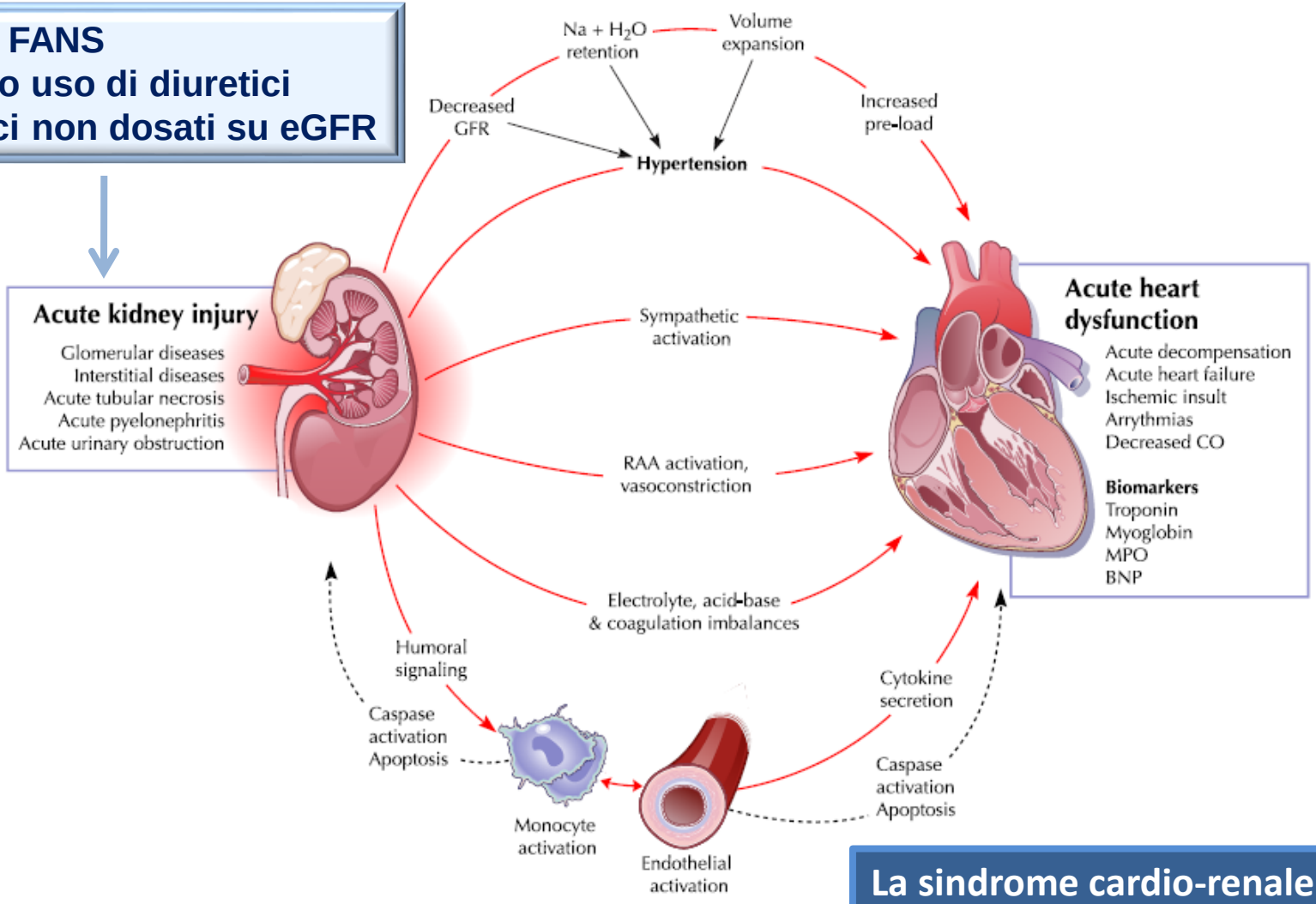
Table 2 Reasons for hospital admission in patients with worsening CHF (The pati one reason)

Reason for hospital admission	Proportion
Pneumonia/respiratory disease	35.4%
Need to monitor cardiac rhythm	15.6%
Communication problem (such as dementia, stroke and aphasia)	22.3%
Pulmonary oedema	11.3%
Myocardial infarction	6.2%
Anaemia*	5.2%
Pathologic blood chemistry other than haemoglobin**	3.7%
Hypotension	2.1%

Pneumonia and other respiratory diseases were the most common reason for hospital admission among patients with CHF in our study

Stressors NON cardiologici (Acute Kydney injury)

- ✓Abuso di FANS
- ✓Incongruo uso di diuretici
- ✓Antibiotici non dosati su eGFR



La sindrome cardio-renale
Type 3

Factors Identified as Precipitating Hospital Admissions for Heart Failure and Clinical Outcomes

Findings From OPTIMIZE-HF

Arch Intern Med. 2008;168(8):847-854

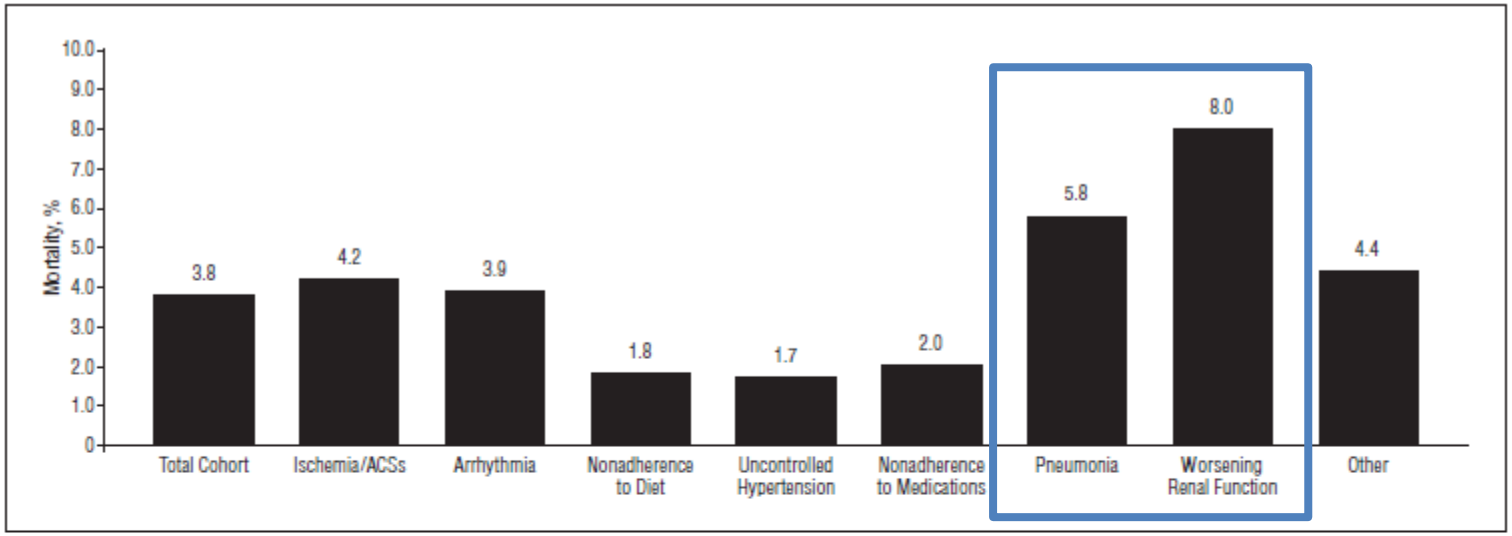


Figure. Unadjusted in-hospital mortality rates by precipitating factors for heart failure admission. ACSs indicates acute coronary syndromes.

Table 2. Precipitating Factors and Multivariate Risk-Adjusted In-Hospital Clinical Outcomes

Factor	No. of Patients	Adjusted Length of Stay Ratio	*P* Value	In-Hospital Mortality: Adjusted Odds Ratio (95% Confidence Interval)	In-Hospital Mortality: *P* Value
Ischemia/acute coronary syndrome	7155	0.99	.22	1.20 (1.03-1.40)	.02
Arrhythmia	6552	1.04	<.001	0.85 (0.71-1.01)	.07
Nonadherence to diet	2504	0.96	.01	0.69 (0.48-1.00)	.05
Uncontrolled hypertension	5220	0.96	<.001	0.74 (0.55-0.99)	.04
Nonadherence to medications	4309	0.96	<.001	0.88 (0.67-1.17)	.39
Pneumonia/respiratory process	7426	1.08	<.001	1.60 (1.38-1.85)	<.001
Worsening renal function	3304	1.09	<.001	1.48 (1.23-1.79)	<.001
Other	6171	0.99	.23	1.15 (0.97-1.36)	.10

THE COCHRANE COLLABORATION®

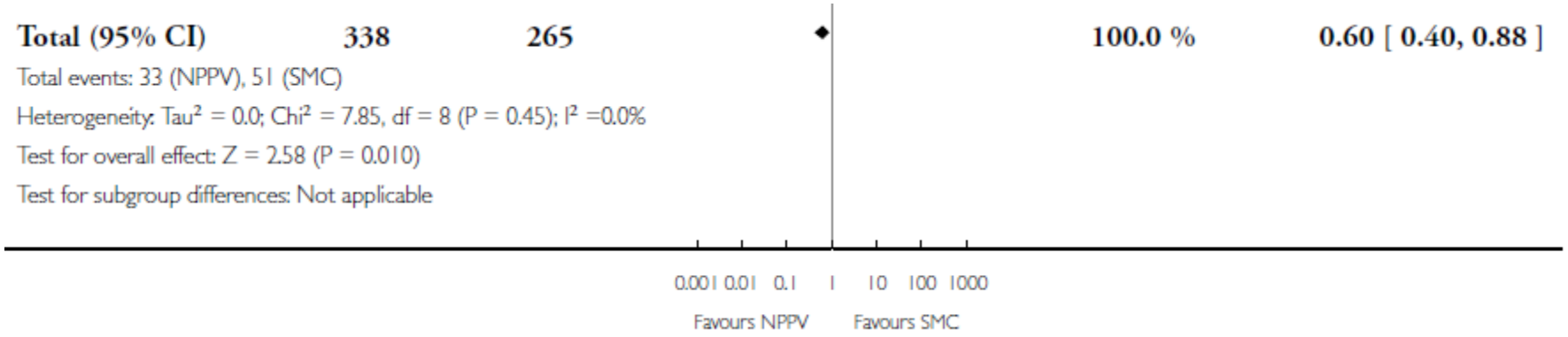
Non-invasive positive pressure ventilation (CPAP or bilevel NPPV) for cardiogenic pulmonary oedema (Review)

Vital FMR, Ladeira MT, Atallah ÁN

THE COCHRANE COLLABORATION®

Analysis 1.5. Comparison 1 Hospital mortality, Outcome 5 NPPV (CPAP and BILEVEL) X SMC - in patients hypercanics - baseline.

2013



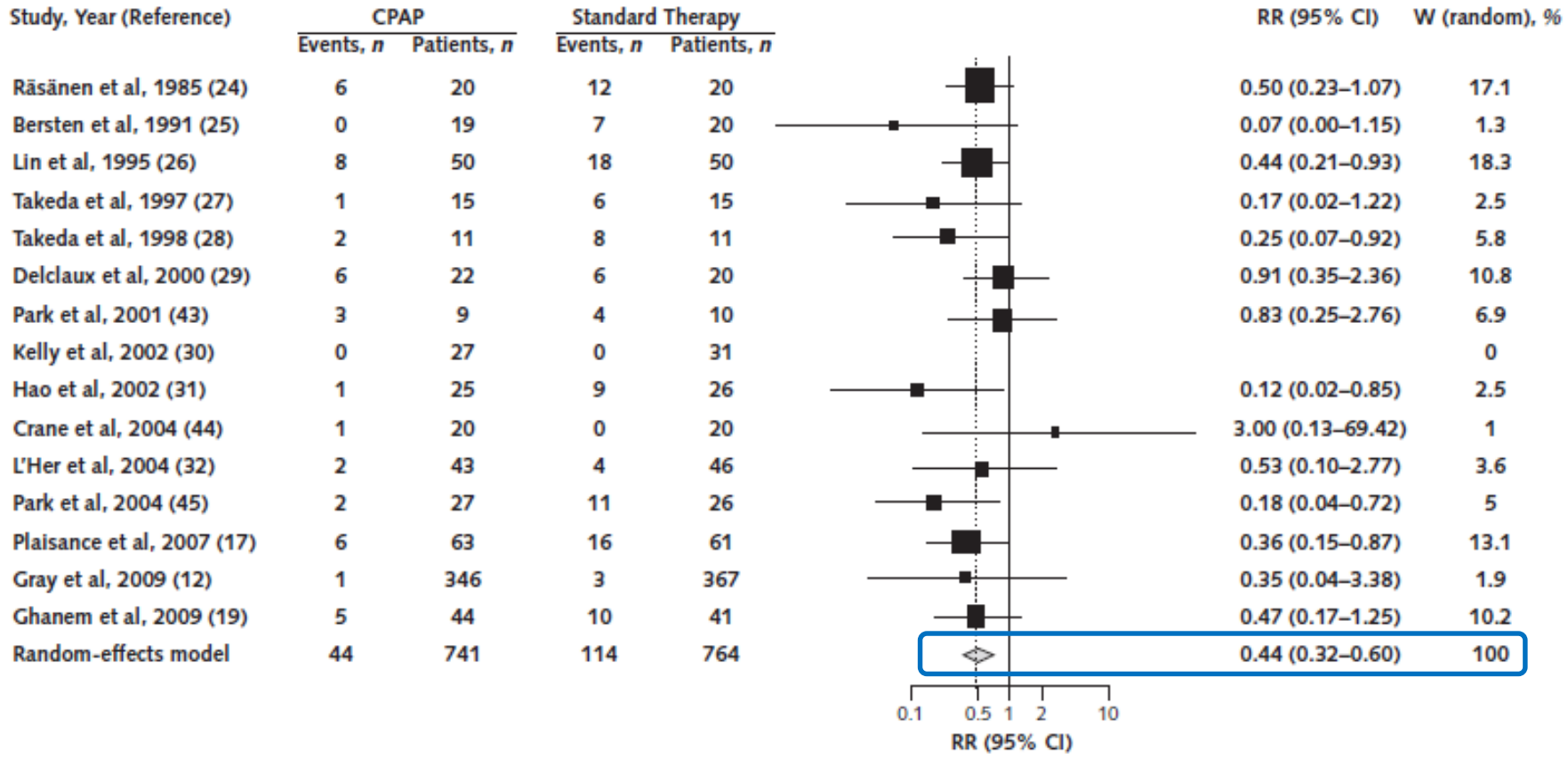
Authors' conclusions

NPPV in addition to standard medical care is an effective and safe intervention for the treatment of adult patients with acute cardiogenic pulmonary oedema. The evidence to date on the potential benefit of NPPV in reducing mortality is entirely derived from small-trials and further large-scale trials are needed.

REVIEW | Annals of Internal Medicine Ann Intern Med. 2010;152:590-600.

Meta-analysis: Noninvasive Ventilation in Acute Cardiogenic Pulmonary Edema

Figure 2. Forest plot for need for intubation.

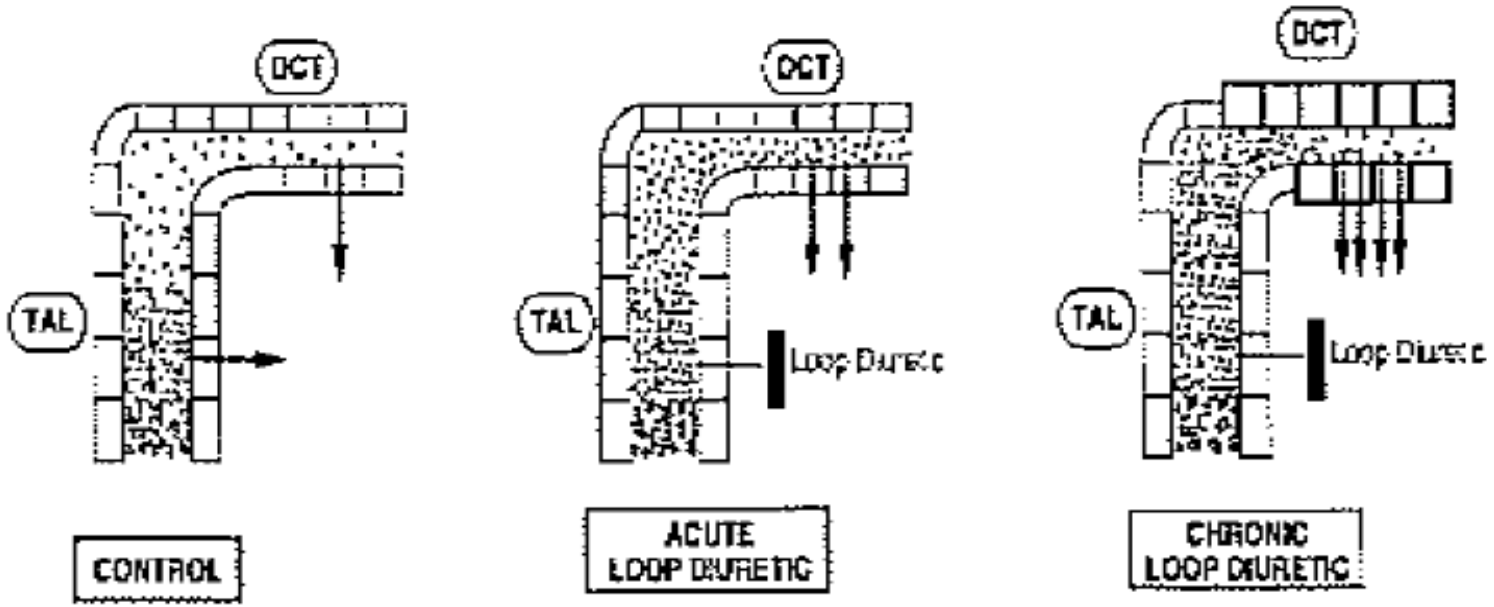


In conclusion, findings from this meta-analysis support previous assessments that the use of CPAP reduces mortality and intubation rates in patients with ACPE, especially those with myocardial ischemia or MI at presentation, and bilevel ventilation reduces the need for intubation compared with standard therapy.

Diuretic Resistance: Physiology and Therapeutics

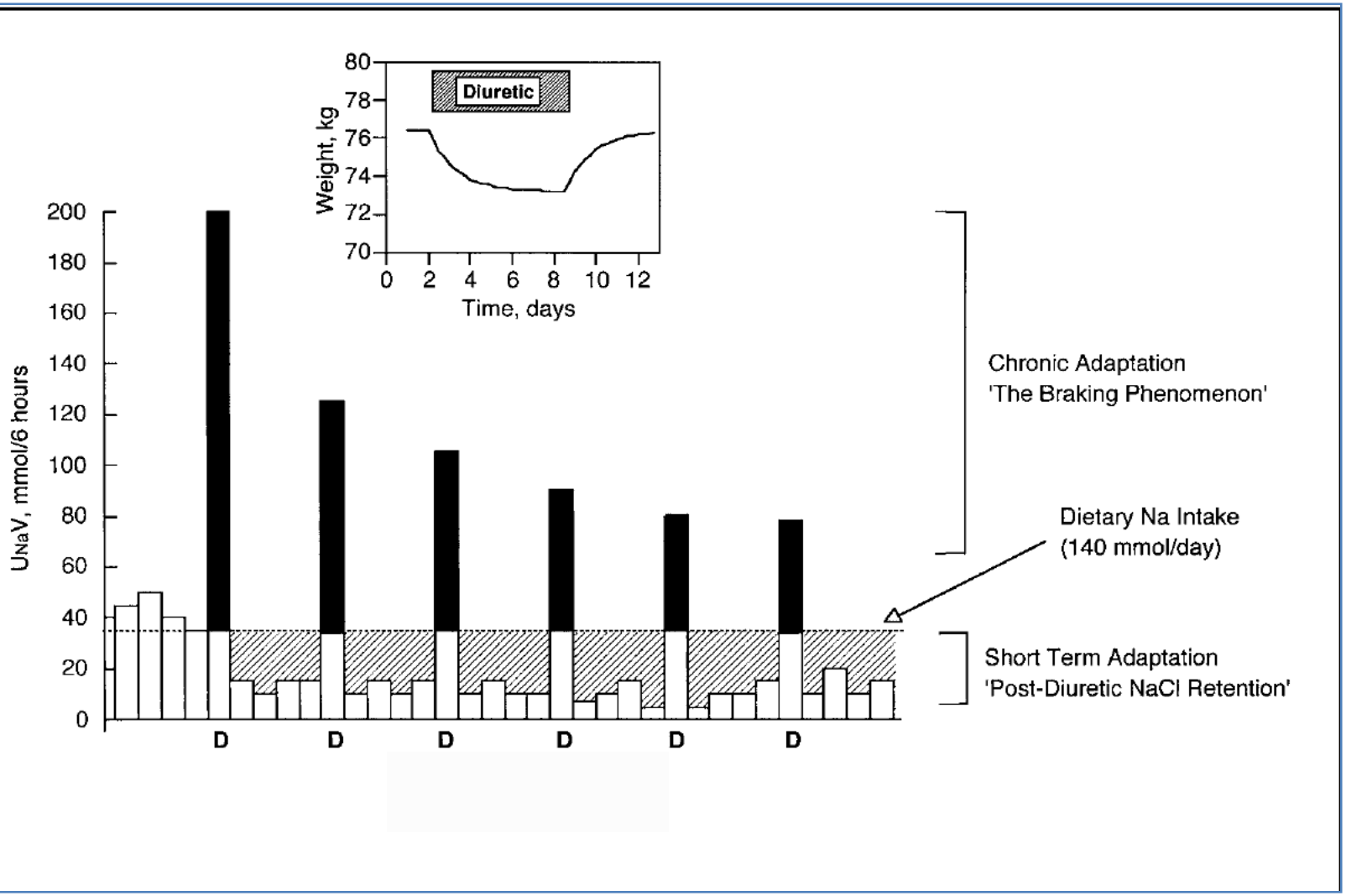
By David H. Ellison

The central role of DISTAL TUBE



Seminars in Nephrology, Vol 19, No 6 (November), 1999: pp 581-597

Postdiuresis Sodium Retention-the braking phenomen



The horizontal broken line indicates the level of Na intake. Solid shading shows periods of negative Na balance and diagonal shading periods of positive Na balance.

Wilcox et al.
Kidnney Int.1987

Adaptation of the Distal Convoluted Tubule of the Rat

Structural and Functional Effects of Dietary Salt Intake and Chronic Diuretic Infusion

David H. Ellison,* Heino Velázquez,* and Fred S. Wright*‡
With the technical assistance of **Katherine Harvey**
*Departments of *Medicine and ‡Cellular and Molecular Physiology, Yale University School of Medicine, New Haven, Connecticut 06510; and Veterans Administration Medical Center, West Haven, Connecticut 06516*

J Clin Invest
1989

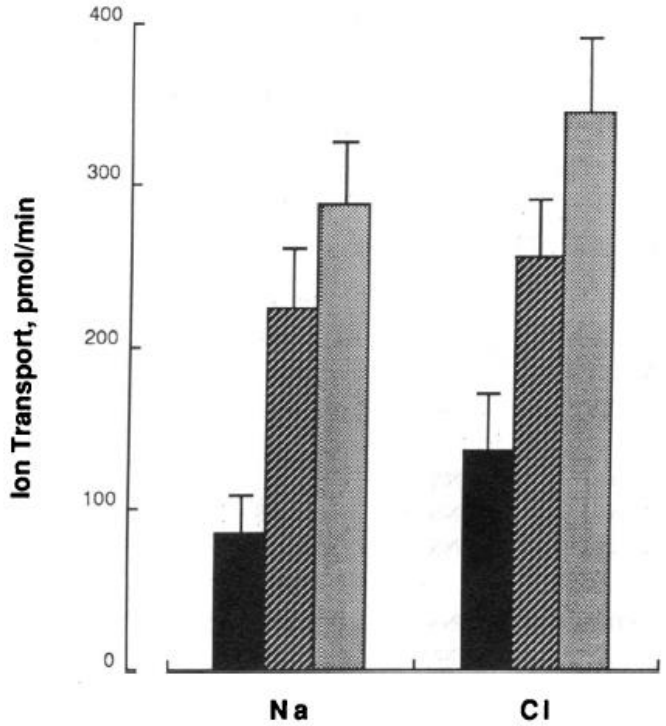
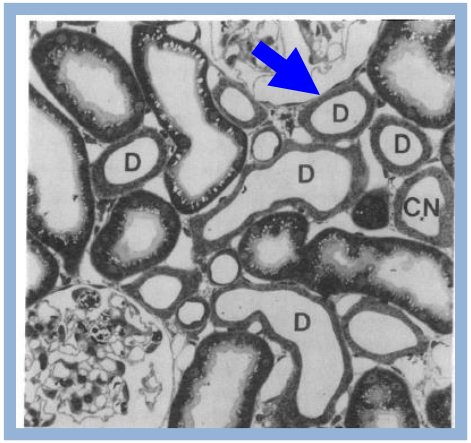
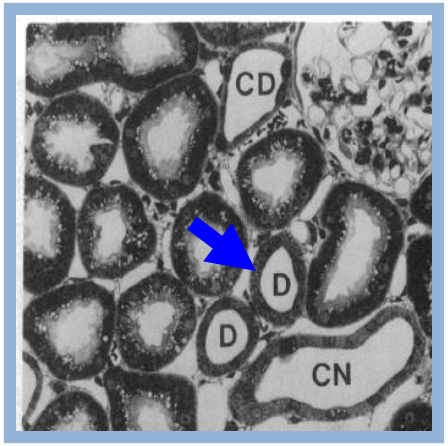


Figure 3. Ion transport by DCT (+SE) estimated as the CTZ-sensitive portion of Na and Cl transport by the distal tubule. There were 17 nephrons in 8 animals in group 1, 16 nephrons in 7 animals in group 2, and 14 nephrons in 8 animals in group 3. Sodium absorption was significantly greater ($P < 0.01$) in groups 2 and 3 (low NaCl and furosemide) than in group 1 (high NaCl). Chloride absorption was significantly greater in group 3 (furosemide, $P < 0.05$) than in group 1 (high NaCl).

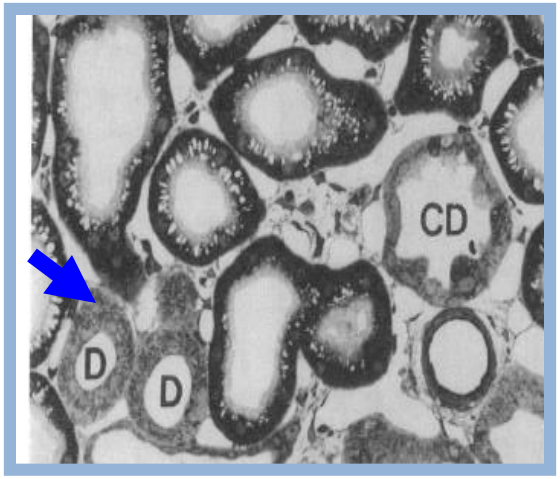
Group 1



Group 2



Group 3



Group 1
high [Na] dietary intake

Group 2
Low [Na] dietary intake

Group 3
Chronic furosemide infusion

Other MECHANISMS of Diuretic Resistance

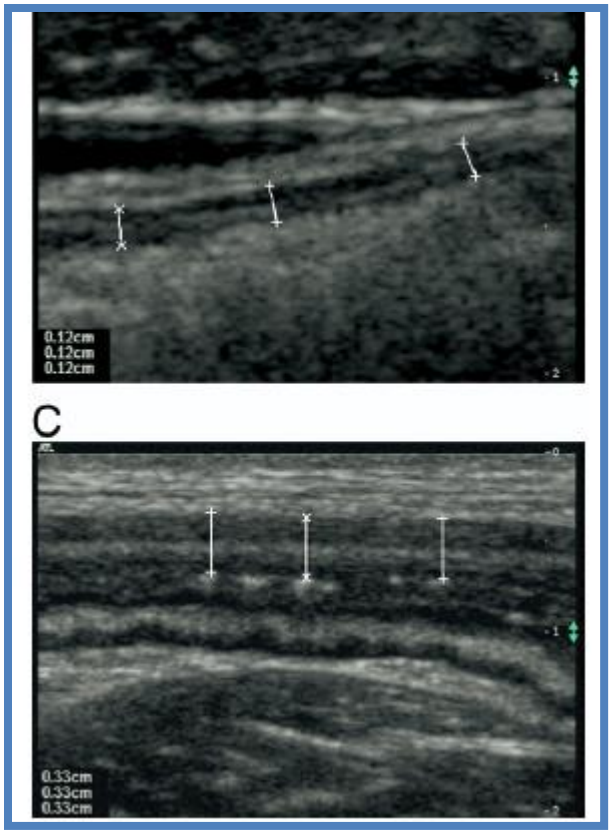
Sete incontrollabile

Non compliance alla restrizione idrica

Aumento marcato della vasopressina da stimolo non osmotico

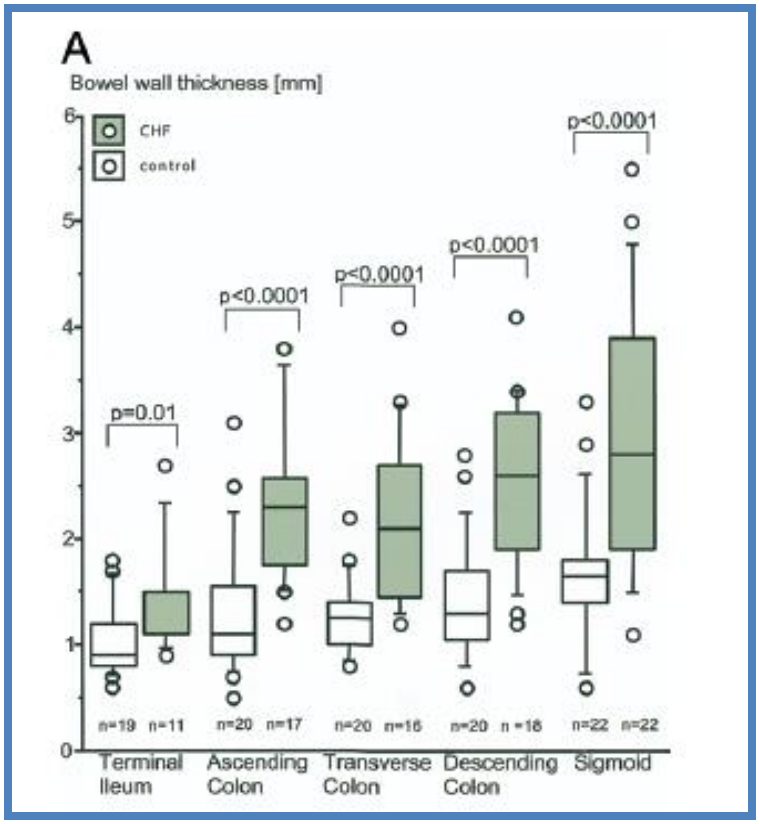
IPONATREMIA DA DILUIZIONE

Altered Intestinal Function in Patients With Chronic Heart Failure



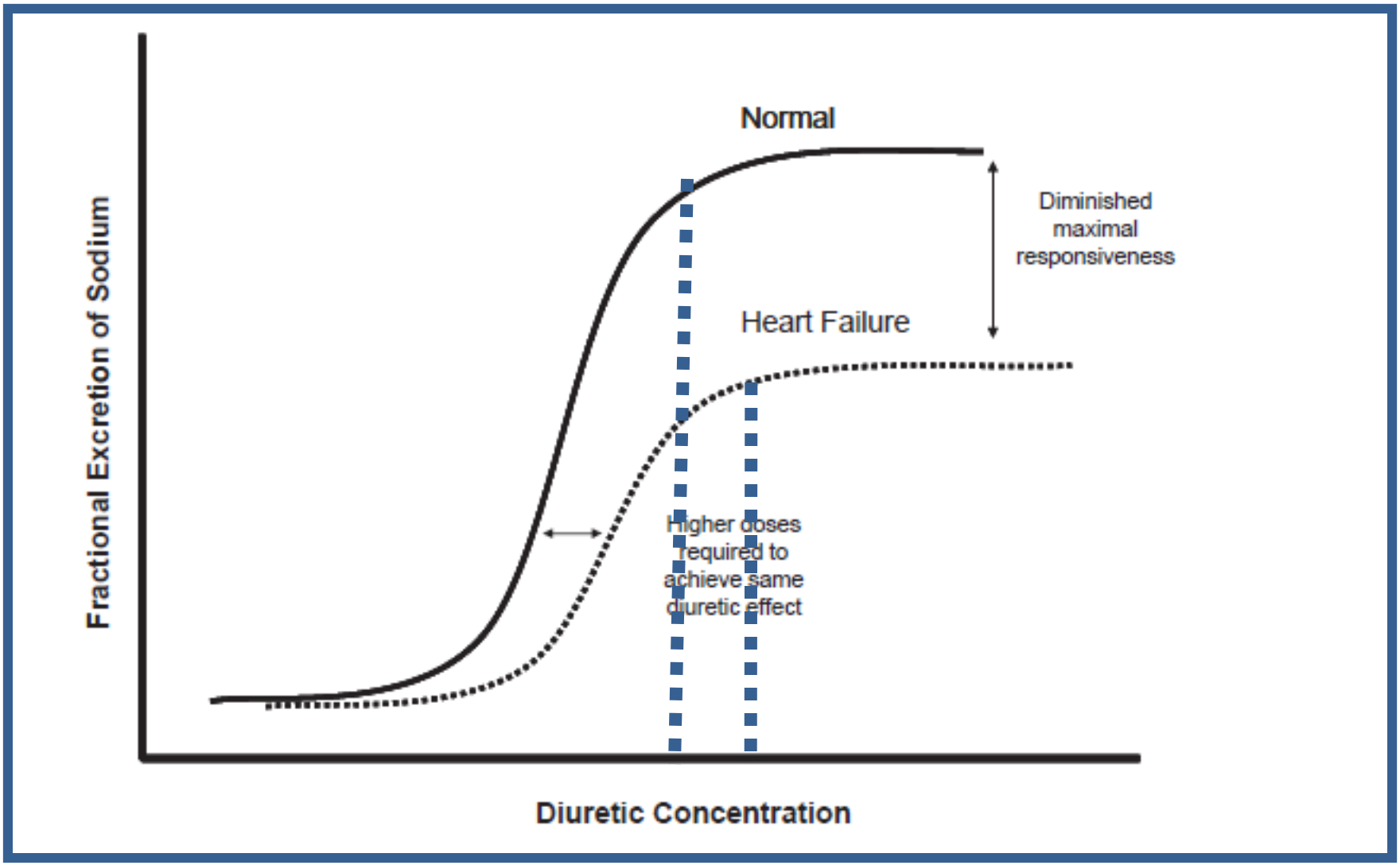
Controlli

Pts with CHF

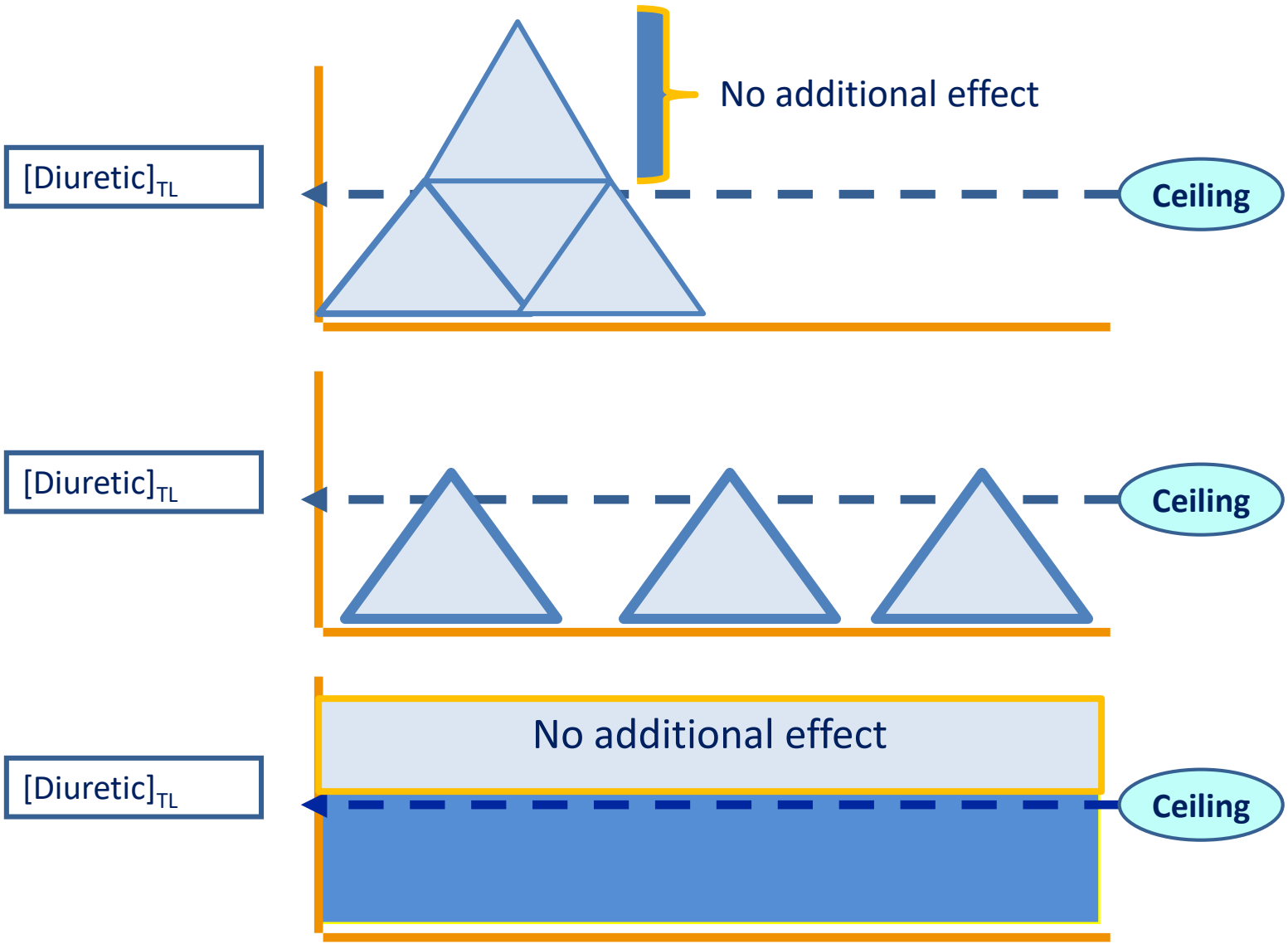


We have found significant morphological and functional alterations of the intestine in CHF patients. These findings are consistent with restricted intestinal perfusion and consequent mucosal edema, a higher intestinal permeability, and a lack of immunological defense with an augmented
bacterial biofilm.

Concetto di CELING DOSE



Concetto di CELING DOSE e rationale utilizzo dei diuretici



Combination diuretic therapy

Come usarla?

Initiation of CDT should be done with careful observation and frequent monitoring of renal function and electrolytes.

Ultrafiltration for the treatment of congestion: a window into the lung for a better caress to the heart

Nephrol Dial Transplant (2014) 29: 1335–1341

Table 1. Current guidelines recommendations

Expert Group	Comment
ACC/AHA [6]	UF is reasonable for patients with refractory congestion not responding to medical therapy. (see the text for definition). (Class of recommendation IIa, level of evidence: B) If the degree of renal dysfunction is severe or if oedema becomes resistant to treatment, UF or haemofiltration may be needed to achieve adequate control of fluid retention. This can produce clinical benefits and may restore responsiveness to conventional doses of loop diuretics.
ESC [7]	UF should be considered to reduce fluid overload (pulmonary and/or peripheral oedema) in selected patients and correct hyponatraemia in symptomatic patients refractory to diuretics. (Class of recommendation IIa, level of evidence: B)
CCVS [25]	In highly selected patients and under experienced supervision, intermittent slow continuous veno-venous UF may be considered (Weak Recommendation, Low-quality Evidence).

CONCLUSIONS

It is altogether evident from what herein reviewed that UF, as most other effective therapeutic strategies, should be reserved for the right patients and should be undertaken by experienced teams. Prospective studies guided by the degree of pulmonary congestion are necessary to establish the correct placing of this novel and effective treatment of congestion in patients with ADHF.

Follow-up

STATE-OF-THE-ART PAPER

Rehospitalization for Heart Failure

Problems and Perspectives

Mihai Gheorghiade, MD,* Muthiah Vaduganathan, MD, MPH,† Gregg C. Fonarow, MD,‡
Robert O. Bonow, MD, MS*

Chicago, Illinois; Boston, Massachusetts; and Los Angeles, California

JACC Vol. 61, No. 4, 2013
January 29, 2013:391–403

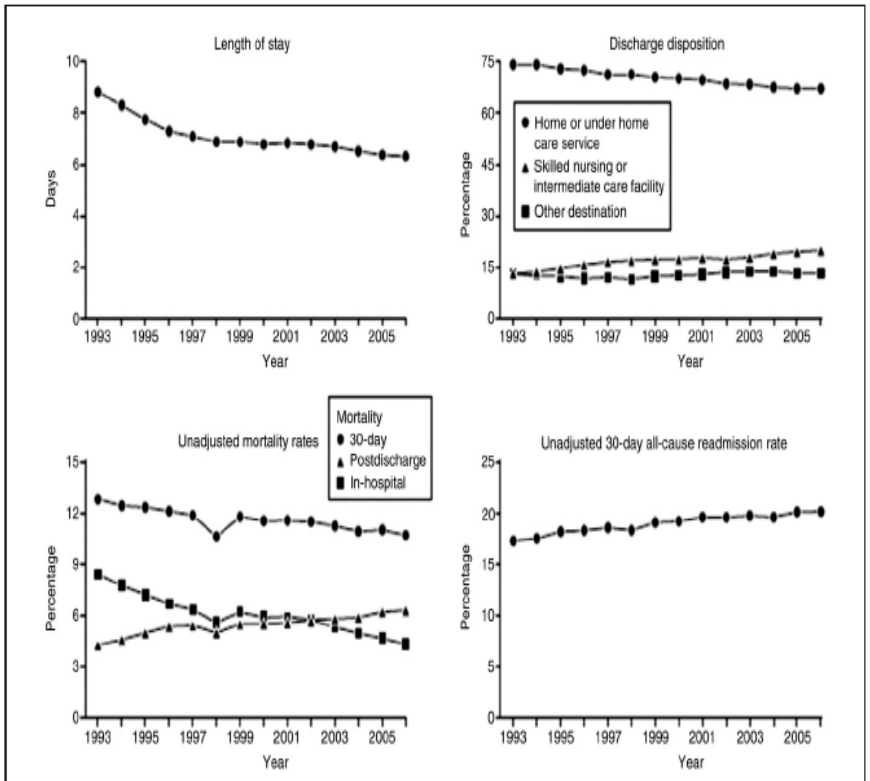
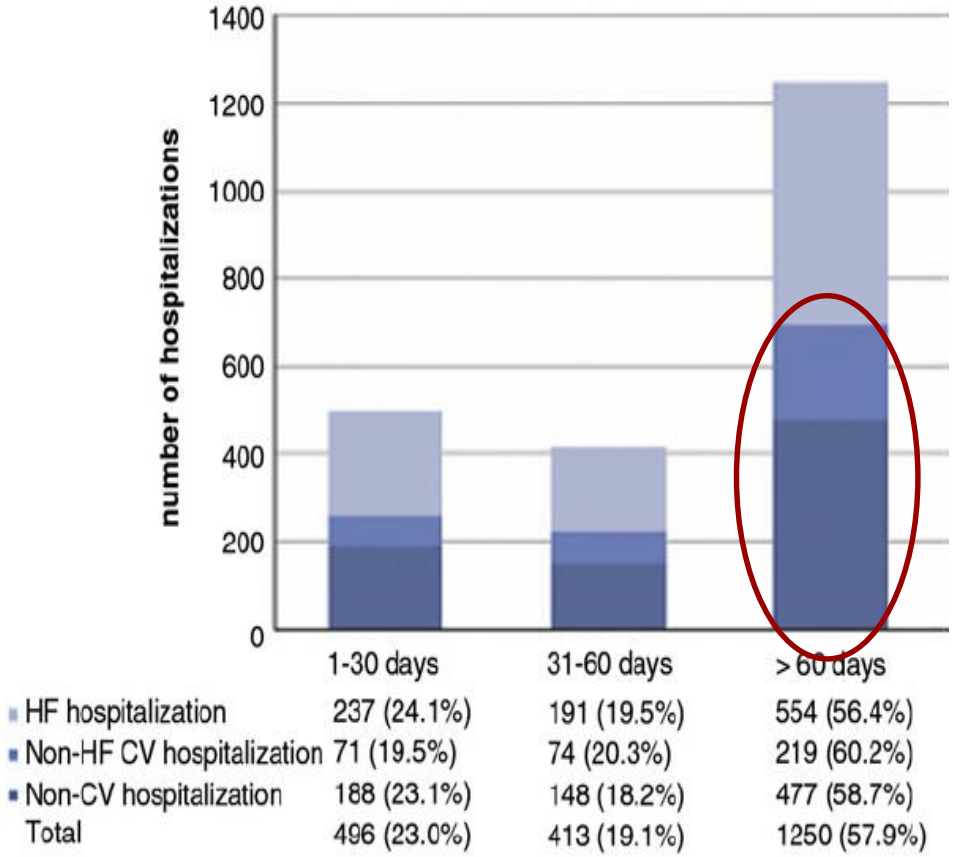


Figure 1 Hospitalization for HF in the United States



Heart Failure–Associated Hospitalizations in the United States

JACC Vol. 61, No. 12, 2013
March 26, 2013:1259–67

Saul Blecker, MD, MHS,*† Margaret Paul, MS,* Glen Taksler, PHD,*†
Gbenga Ogedegbe, MD, MS, MPH,*† Stuart Katz, MD, MS‡
New York, New York

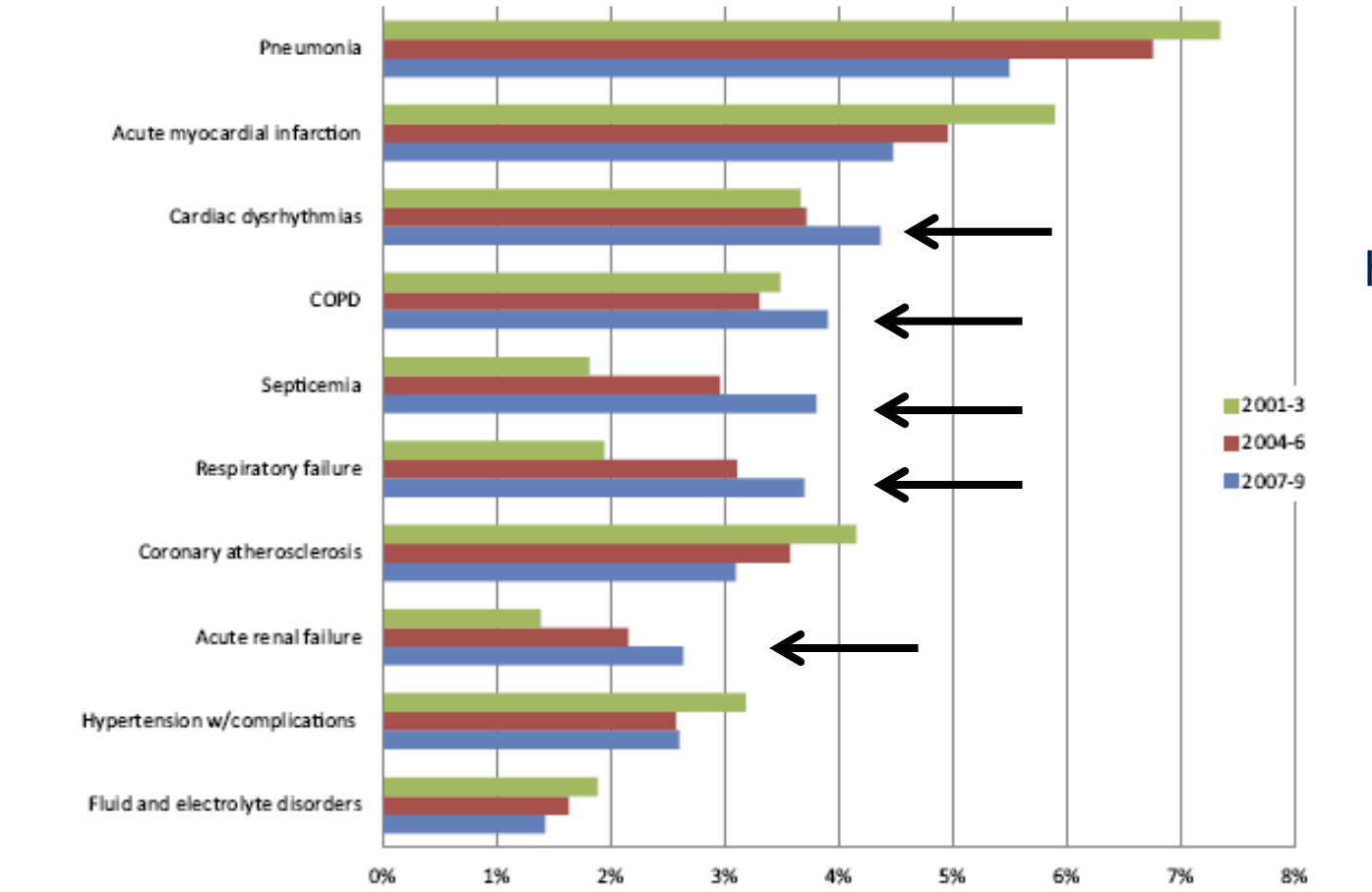


Figure 2 Trends in Prevalence of the 10 Most Common Primary Diagnoses for Heart Failure–Related Hospitalizations, Other Than Heart Failure Itself

…….Strategies to reduce the high burden of hospitalizations of heart failure patients should include consideration of **both cardiac disease and noncardiac conditions……**

Canadian Journal of Cardiology 30 (2014) 612–618

Clinical Research

Determinants of Early Readmission After Hospitalization for Heart Failure

Table 2. Risk-adjusted models for nonelective readmission for patients discharged alive after a first hospitalization with a most responsible diagnosis of HF[a]

Outcome (N = 18,590)	Readmission within 7 days for all causes	Readmission within 7 days for HF	Readmission within 30 days for all causes	Readmission within 30 days for HF
Male sex	0.97 (0.85-1.10)	1.03 (0.84-1.27)	0.98 (0.90-1.06)	1.04 (0.92-1.17)
Age (y)				
20-49	Reference	Reference	Reference	Reference
50-64	0.85 (0.57-1.27)	0.71 (0.38-1.33)	1.12 (0.87-1.44)	0.94 (0.64-1.39)
65-74	0.99 (0.68-1.45)	0.90 (0.50-1.61)	1.19 (0.94-1.52)	1.07 (0.74-1.56)
≥ 75	1.12 (0.78-1.61)	1.05 (0.60-1.83)	1.36 (1.08-1.72)	1.43 (1.00-2.05)
Admission year	–	–	–	–
Myocardial infarction	–	–	–	–
Peripheral vascular disease	–	–	–	–
Cerebrovascular disease	–	–	0.73 (0.56-0.94)	0.64 (0.42-0.99)
Dementia	–	–	–	–
Pulmonary disease	–	–	1.14 (1.05-1.24)	–
Liver disease	–	–	1.41 (1.07-1.85)	–
Diabetes	–	–	–	–
Kidney disease	1.28 (1.08-1.53)	–	1.37 (1.24-1.52)	1.43 (1.23-1.67)
Cancer	–	–	1.31 (1.10-1.55)	–
Atrial fibrillation	–	–	–	1.14 (1.01-1.29)
Transferred to index hospital	1.22 (1.02-1.46)	–	1.21 (1.09-1.35)	–
Length of stay				
1-7 d	Reference	–	–	–
8-14 d	1.03 (0.89-1.20)			
15-29 d	1.04 (0.86-1.26)			
≥ 30 d	0.65 (0.47-0.90)			
Disposition				
Home	Reference		Reference	Reference
Home care	1.26 (1.07-1.49)	1.28 (1.01-1.63)	1.23 (1.11-1.35)	1.17 (1.02-1.34)
Long-term care	0.77 (0.57-1.04)	0.81 (0.54-1.22)	0.66 (0.56-0.78)	0.65 (0.51-0.83)
Discharge against medical advice	4.47 (3.10-6.46)	4.60 (2.70-7.86)	3.10 (2.33-4.13)	3.16 (2.16-4.61)
Attending physician specialty	–	–	–	–
Hospital with HF services	0.65 (0.57-0.74)	0.67 (0.54-0.82)	0.71 (0.65-0.77)	0.81 (0.72-0.92)

Annals of Internal Medicine

Transitional Care Interventions to Prevent Readmissions for Persons With Heart Failure

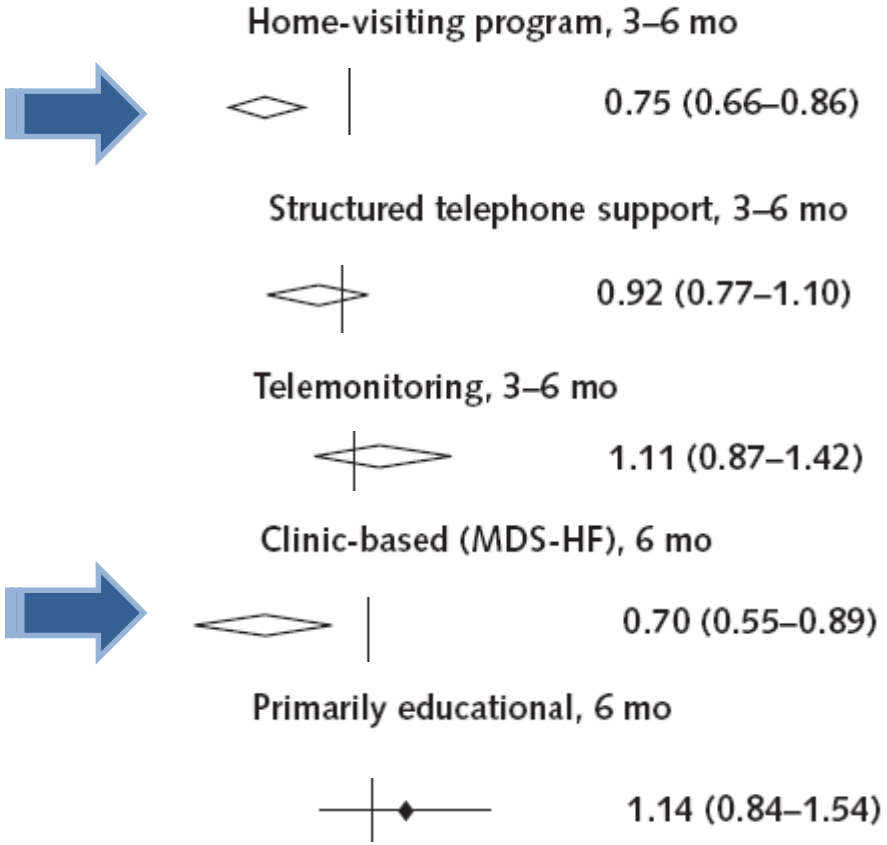
Ann Intern Med. 2014;160:774-784.

A Systematic Review and Meta-analysis

Table 1. Transitional Care Interventions

Category	Definition
Home-visiting programs	Home visits by clinicians, such as a nurse or pharmacist, who educate, reinforce self-care instructions, perform physical examination, or provide other care (e.g., physical therapy or medication reconciliation). These interventions are often referred to as nurse case management interventions, but they also can include home visits by a pharmacist or multidisciplinary team.
STS	Monitoring, education, or self-care management (or various combinations) using simple telephone technology after discharge in a structured format (e.g., series of scheduled calls with a specific goal, structured questioning, or use of decision-support software).
Telemonitoring	Remote monitoring of physiologic data (e.g., electrocardiogram, blood pressure, weight, pulse oximetry, or respiratory rate) with digital, broadband, satellite, wireless, or Bluetooth transmission to a monitoring center, with or without remote clinical visits (e.g., video monitoring).
Outpatient clinic–based	Services provided in one of several types of outpatient clinics: multidisciplinary HF, nurse-led HF, or primary care. The clinic-based intervention can be managed by a nurse or other provider and may also offer unstructured telephone support (e.g., patient hotline) outside clinic hours.
Primarily educational	Patient education (and self-care training) delivered before or at discharge by various personnel or methods: in person, interactive CD-ROM, or video education. Interventions in this category do not feature telemonitoring, home visits, or STS and are not delivered primarily through a clinic-based intervention. Follow-up telephone calls may occur to ascertain outcomes (e.g., readmission rates) but not to monitor patients' physiologic data.
Other	Unique interventions or interventions that do not fit into any of the other categories (e.g., individual peer support for patients with HF).

HF = heart failure; STS = structured telephone support.



Conclusion: Home-visiting programs and MDS-HF clinics reduced all-cause readmission and mortality; STS reduced HF-specific readmission and mortality. These interventions should receive the greatest consideration by systems or providers seeking to implement transitional care interventions for persons with HF.

End of life

QUARTERLY FOCUS ISSUE: HEART FAILURE State-of-the-Art Paper

Palliative Care in Congestive Heart Failure

Sarah J. Goodlin, MD
Salt Lake City, Utah

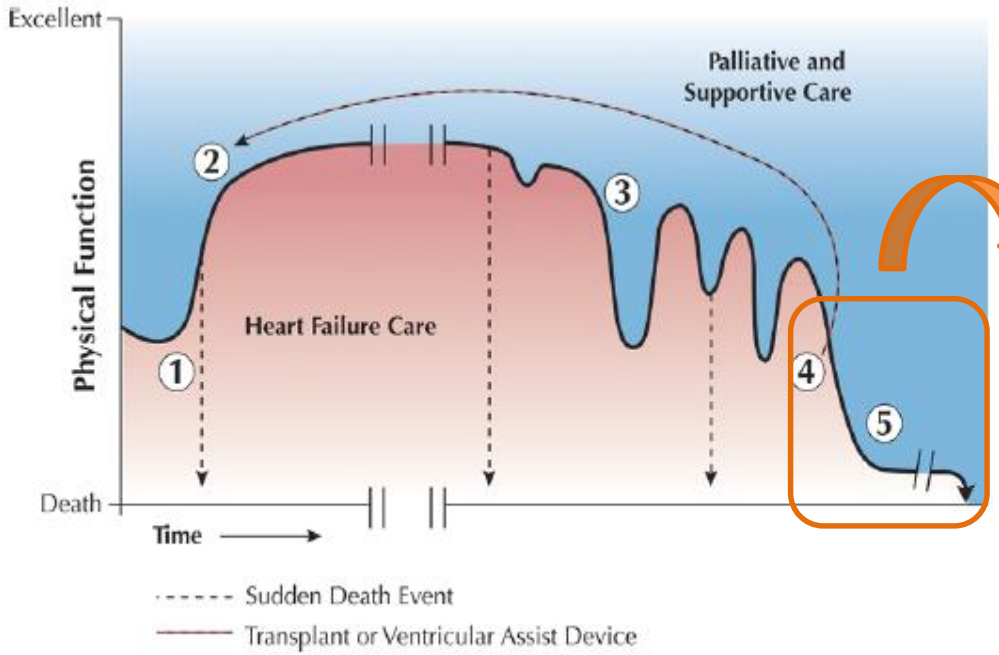


Figure 1 Schematic Depiction of Comprehensive Heart Failure Care

Symptom's relief therapy
- ✓Dyspnea relief therapy
- ✓Pain relief therapy
- ✓Psyco-emotive relief therapy
- ✓Spiritual support

Clinicians caring for HF patients must acquire the skills to make decisions about care based on the patient's preferences and the likely benefit and burden of therapies for that individual

Deactivation of Implantable Cardioverter Defibrillators in Terminal Illness and End of Life Care

James N. Kirkpatrick, MD*, Maia Gottlieb, Priya Sehgal, Rutuke Patel, PA-C, and Ralph J. Verdino, MD

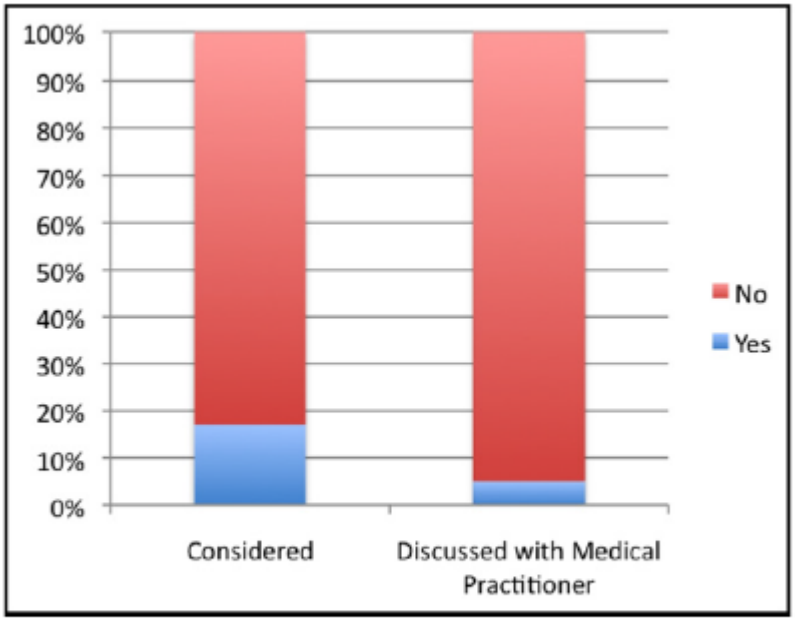


Figure 1. Responses to questions about whether subjects had considered what should be done with an ICD at end of the patient's life and whether they had discussed the topic with a medical provider.

Patients' Perspective on Deactivation of the Implantable Cardioverter-Defibrillator Near the End of Life

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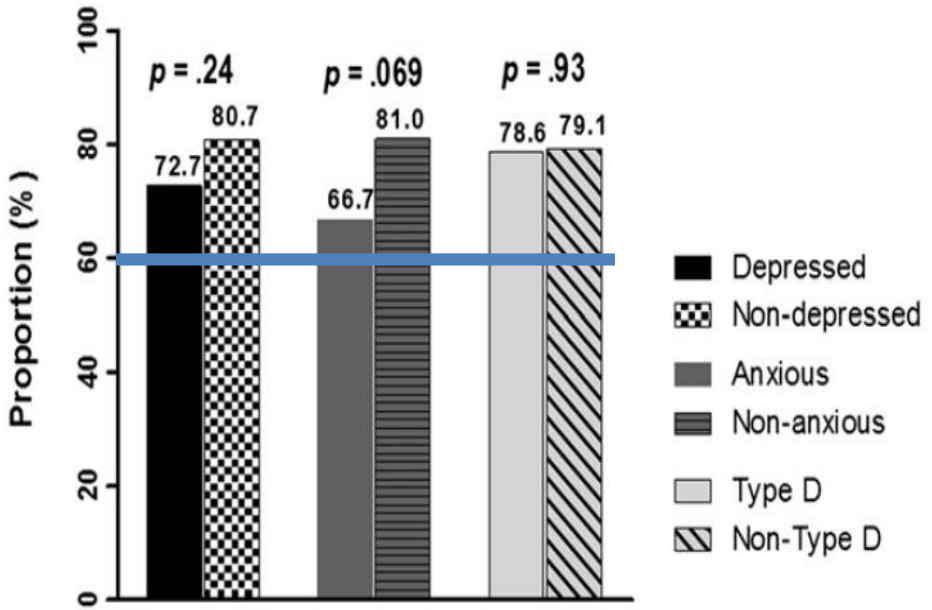

Figure 1. Proportion of patients in favor of device deactivation toward the end of life stratified by psychological morbidity (i.e., depression, anxiety, and Type D personality). Percentages are listed on the top of bars.

these data suggest that patients welcome end of life discussions concerning their ICDs and that cardiologists should discuss end of life care and device deactivation with ICD patients.

Ethics in the Treatment of Advanced Heart Failure: Palliative Care and End-of-Life Issues

- ✓ **Proactive, thoughtful advance planning and effective communication about patient goals and wishes supports patient autonomy while avoiding harm.**
- ✓ **Such communication challenges offer a unique opportunity for professionals of various disciplines to collaborate to improve the lives of their patients.**
- ✓ **Another opportunity for collaboration between disciplines is the complex informed consent and ongoing care processes for HF patients who are treated with implantable devices.**
- ✓ **Symptom management throughout the course of HF care is an ethical obligation of all professionals caring for patients.**
- ✓ **High quality palliative and end-of-life care in HF must be the result of collaboration between multiple disciplines and professionals across all care settings.**

Congest Heart Fail. *2011;17:235–240.*

- Dean Smith –
The Coaches' Coach

"Play Hard, Play Smart, Play Together."