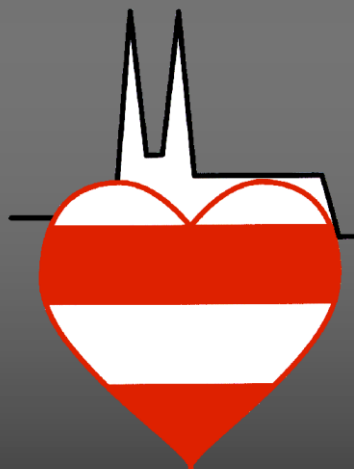


Léčba chronického srdečního selhání

Jiří Vítovec

LF MU a FN u sv.Anny v Brně



16. České kardiologické dny
Praha 24. 11.2016

EBM

a léčba srdečního selhání



Srdeční selhání – včera

EBM

Empiric Based Medicine

Odlehčovací postupy



Figure 7-1 Relief of dropsy (P Barbette, 1672).

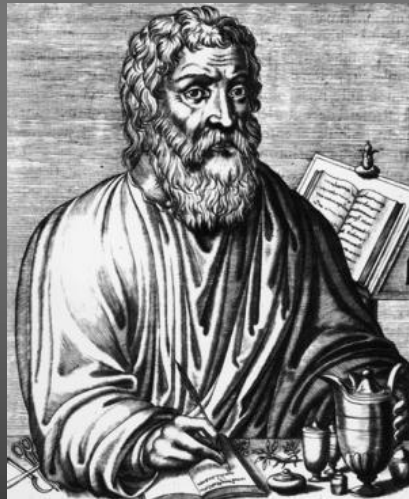
Počátky farmakoterapie

Čína 2735 před n.l.
sušená kůže



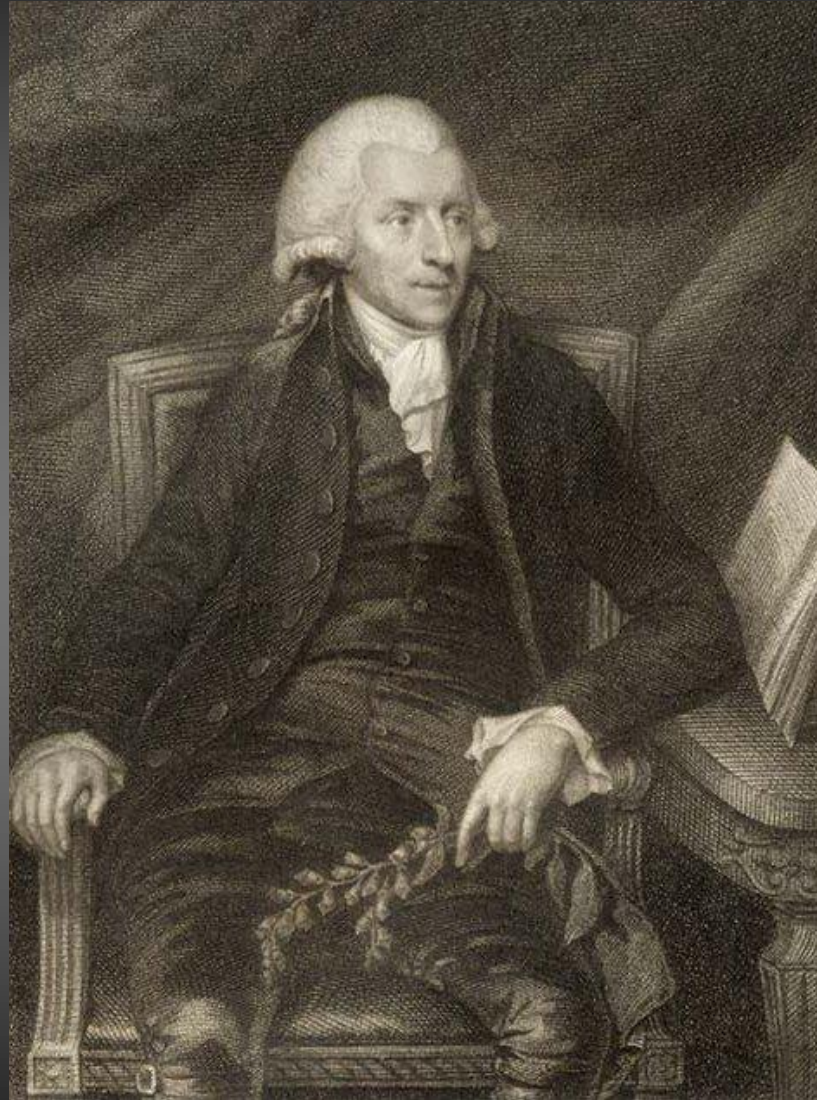
Bufo Bufo

Hippocrates
380 BC
oxymel
(med a ocet)



Paracelsus
(1493-1541)
objevil diuretické
účinky kalomelu –
HgCl

William Withering 1741-1799



William Withering



AN
ACCOUNT OF THE FOXGLOVE,
AND
Some of its Medical Uses:
with
PRACTICAL REMARKS ON DROPSY,
AND OTHER DISEASES.

By
WILLIAM WITHERING, M. D.
Physician to the General Hospital at Birmingham.

nonumque prematur in annum.
Horace.

BIRMINGHAM: PRINTED BY M. SWINNEY;
FOR C.G.J. AND J. ROBINSON, PATERNOSTER ROW, LONDON.
MDCCLXXXV

152 pts.	Success (%)	Failure	Total
Definitive cardiac	39 (89)	5	44
Others	59 (55)	49	108

HEART FAILURE IN OUTPATIENTS

A Randomized Trial of Digoxin versus Placebo

DANIEL CHIA-SEN LEE, M.D., ROBERT ARNOLD JOHNSON, M.D., JOHN B. BINGHAM, M.D.,
MARIANNE LEAHY, R.N., ROBERT E. DINSMORE, M.D., ALLAN H. GOROLL, M.D.,
JOHN B. NEWELL, B.A., H. WILLIAM STRAUSS, M.D., AND EDGAR HABER, M.D.

Abstract The view that digitalis clinically benefits patients with heart failure and sinus rhythm lacks support from a well-controlled study. Using a randomized, double-blind, crossover protocol, we compared the effects of oral digoxin and placebo on the clinical courses of 25 outpatients without atrial fibrillation. According to a clinicoradiographic scoring system, the severity of heart failure was reduced by digoxin in 14 patients; in nine of these 14, improvement was confirmed by repeated trials (five patients) or right-heart catheterization (four patients). The other 11 patients had no detectable improvement from digox-

in. Patients who responded to digoxin had more chronic and more severe heart failure, greater left ventricular dilation and ejection-fraction depression, and a third heart sound. Multivariate analysis showed that the third heart sound was the strongest correlate of the response to digoxin ($P < 0.0001$).

These data suggest that long-term digoxin therapy is clinically beneficial in patients with heart failure unaccompanied by atrial fibrillation whose failure persists despite diuretic treatment and who have a third heart sound. (N Engl J Med. 1982; 306:699-705.)



Historie diuretik

1900-1910 - merbaphen

1924-1950 - mersalyl

1940... - objeven diuretický efekt sulfanilamidu vedoucí k objevení inhibitorů karboanhydrasy (CAIs)

1950... - modifikací struktury CAIs vedlo k objevení thiazidových diuretik.

1960... - objevení kličkových diuretik, K⁺-šetřících diuretik a spironolaktonu

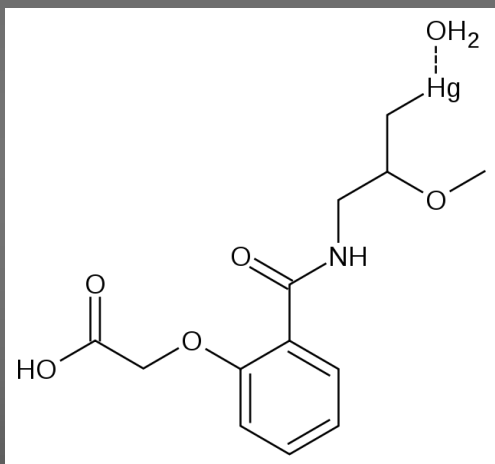
Diuretika

THE MODE OF ACTION OF A MERCURIAL DIURETIC IN MAN

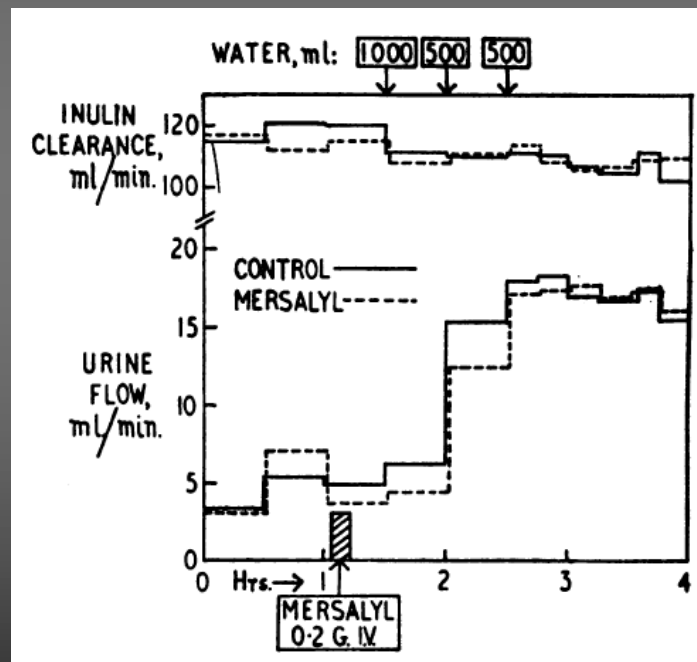
BY R. A. DALE¹ AND P. H. SANDERSON

(From the Department of Medicine, St. Mary's Hospital Medical School, London)

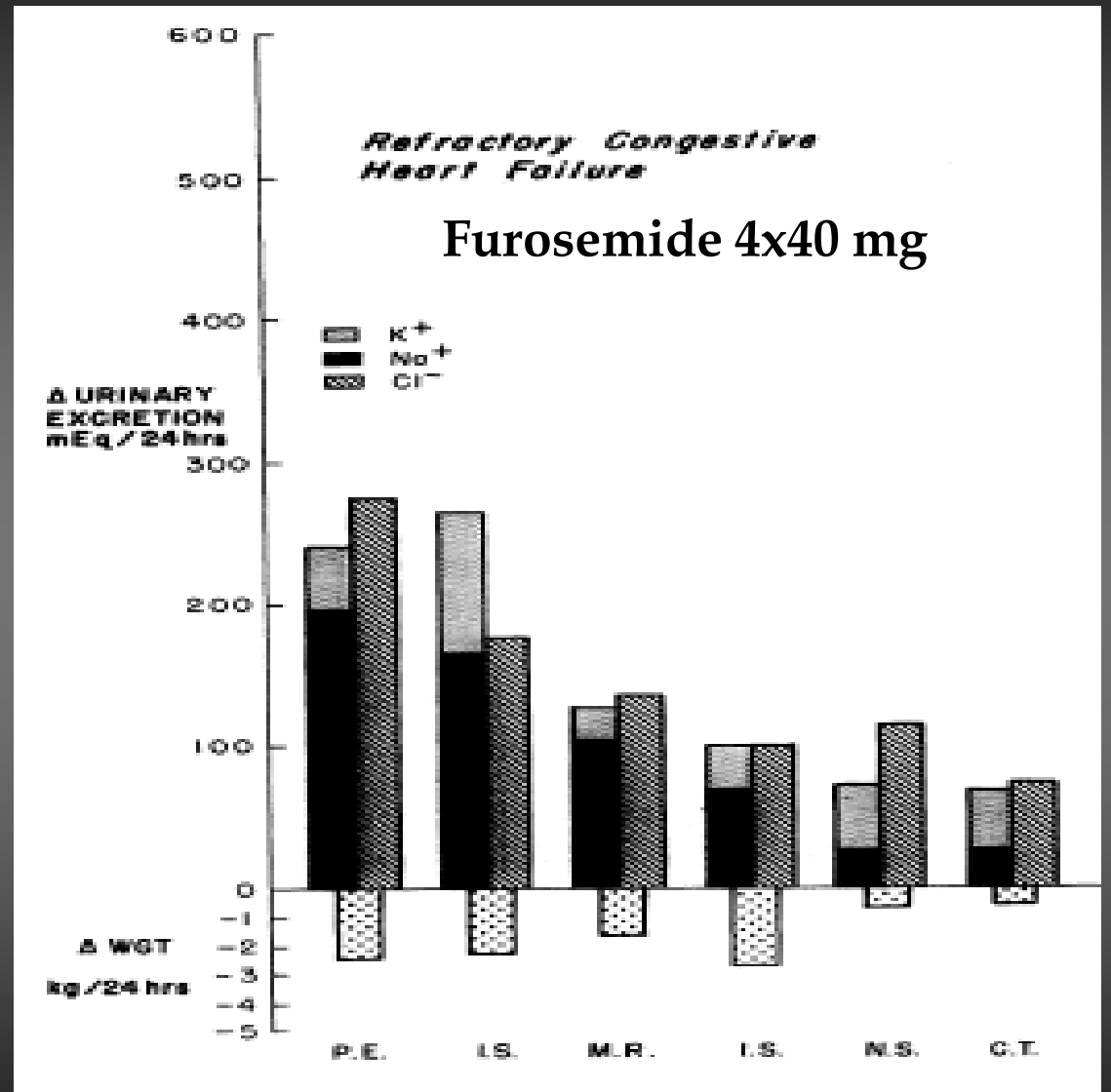
(Submitted for publication September 9, 1952; accepted March 23, 1954)



Mersalyl acid



Diuretika

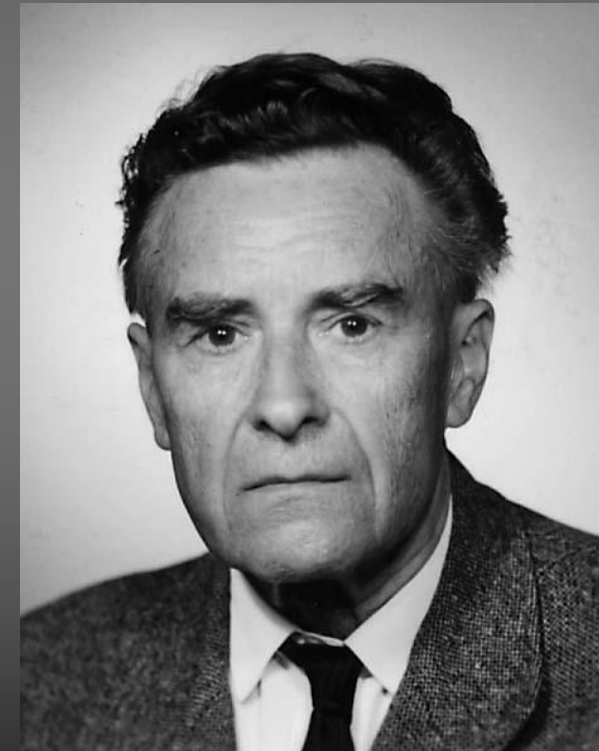
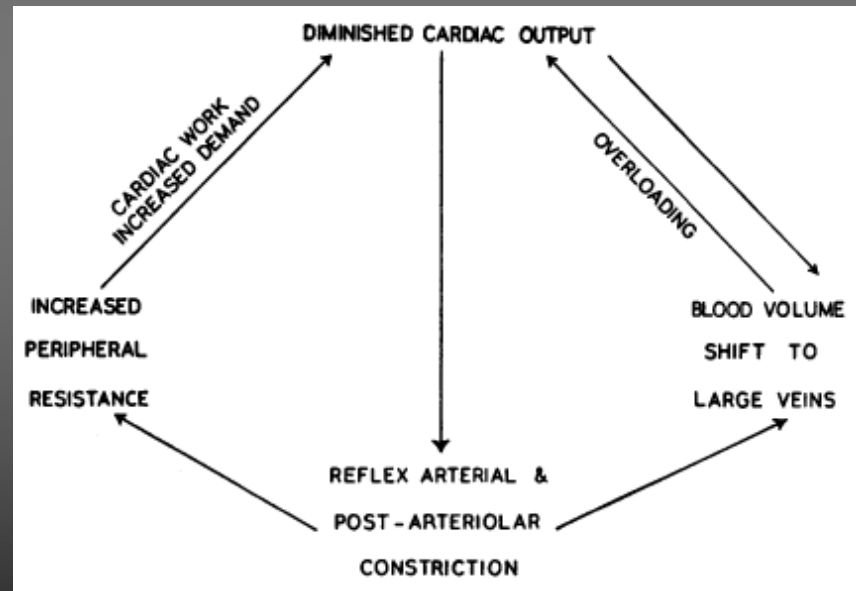


Vazodilatační léčba

Brod, J., Fejfar, Z., Fejfarova, M. H. :

Mechanism of transient increase of the cardiac output in adrenergic blockade with dibenamine.

Sborník Léč 1951;53:154-169





Betablokátory



British Heart Journal, 1975, 37, 1022 - 1036

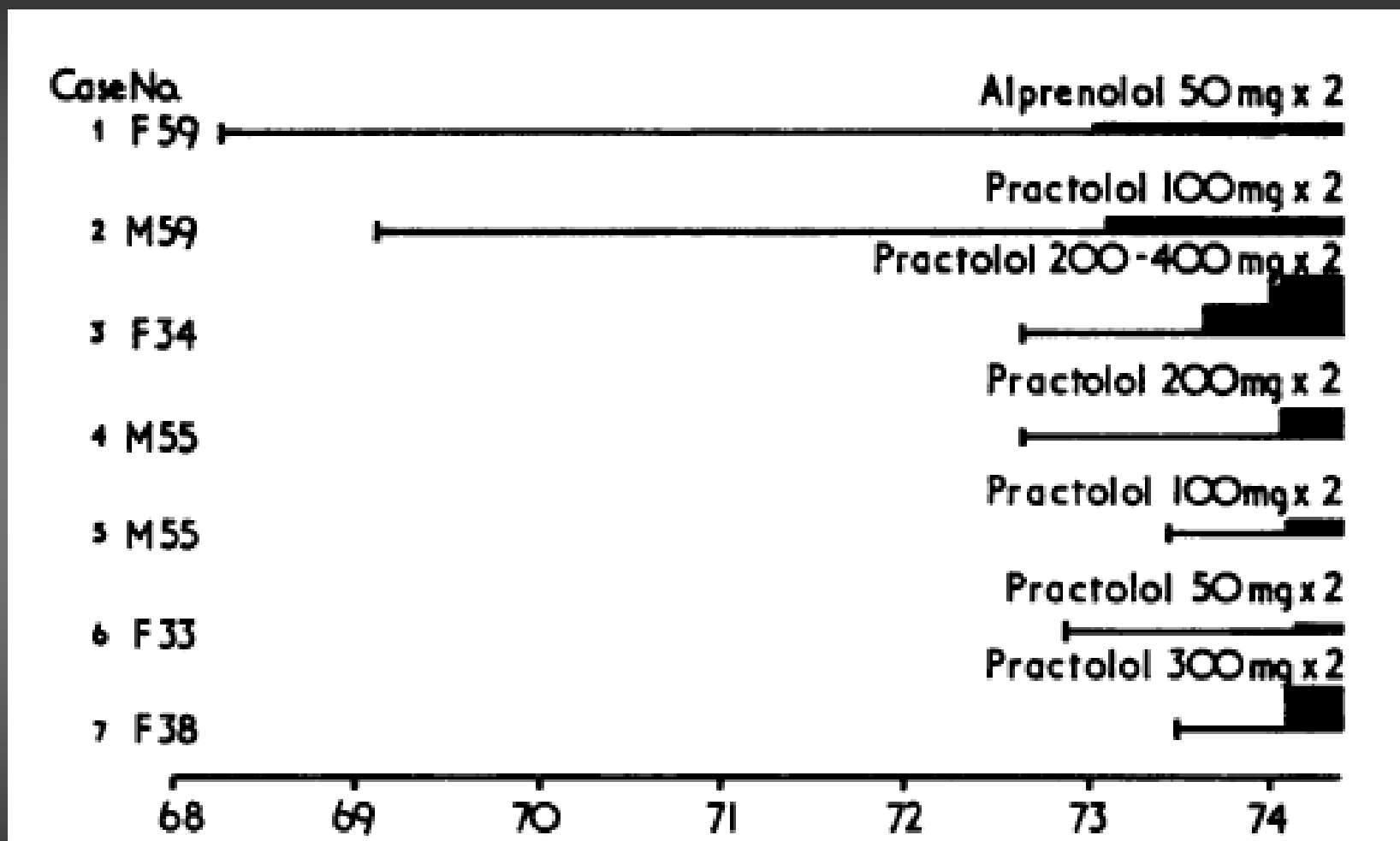
Effect of chronic beta-adrenergic receptor blockade in congestive cardiomyopathy

F. Waagstein, Ä. Hjalmarsen, E. Varnauskas, and I. Wallentin

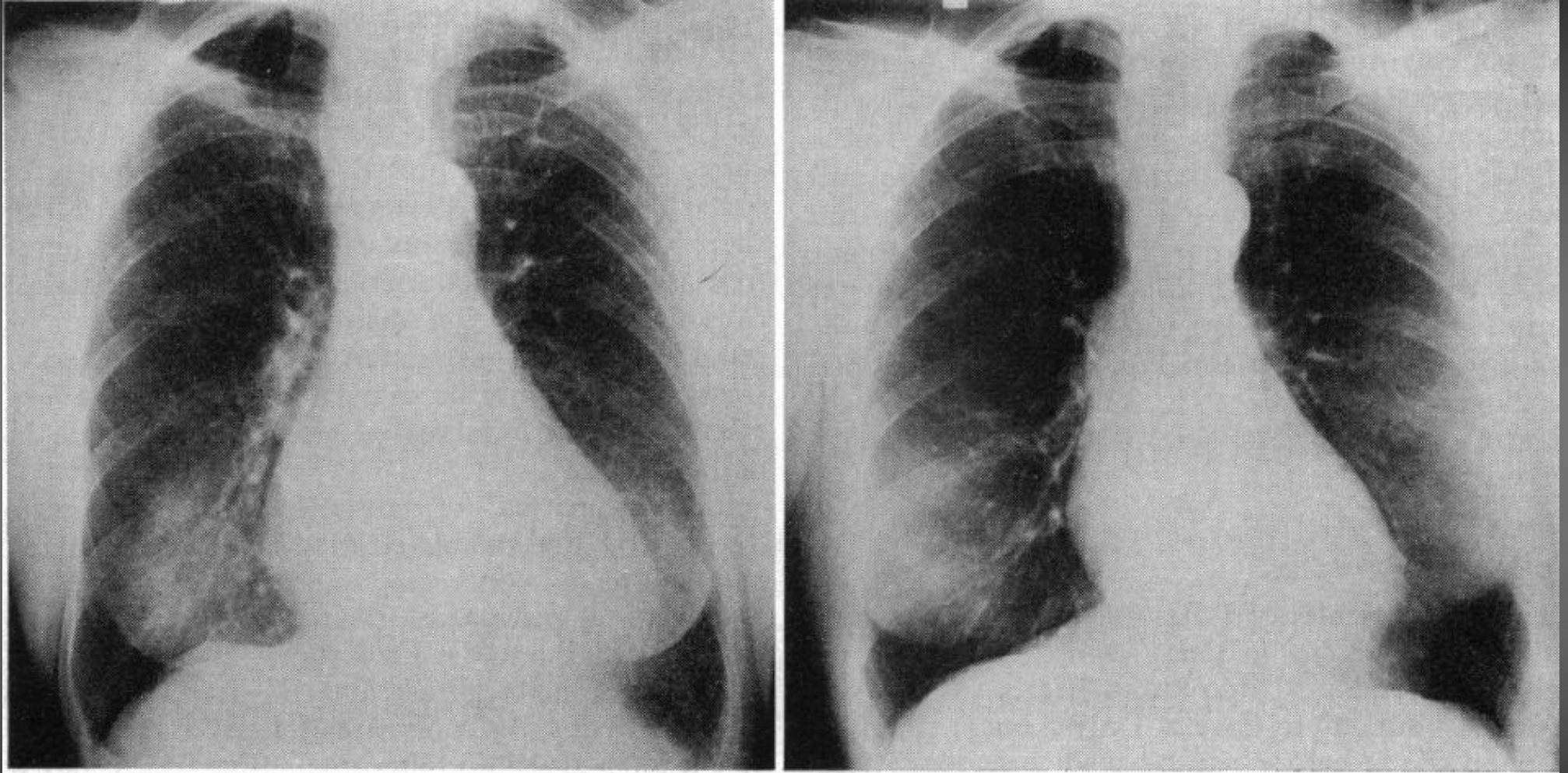
From the Department of Medicine I, Division of Cardiology and Department of Clinical Physiology, Sahlgren's Hospital, University of Göteborg, Sweden

Noninvasive investigations including phonocardiogram, carotid pulse curve, apexcardiogram, and echocardiogram showed improved ventricular function in all cases (7 pts). The present study indicates that adrenergic beta-blocking agents can improve heart function in at least some patients with congestive cardiomyopathy. Furthermore, it is suggested that increased catecholamine activity may be an important factor for the development of this disease, as has been shown in animal experiments.

Betablokátory



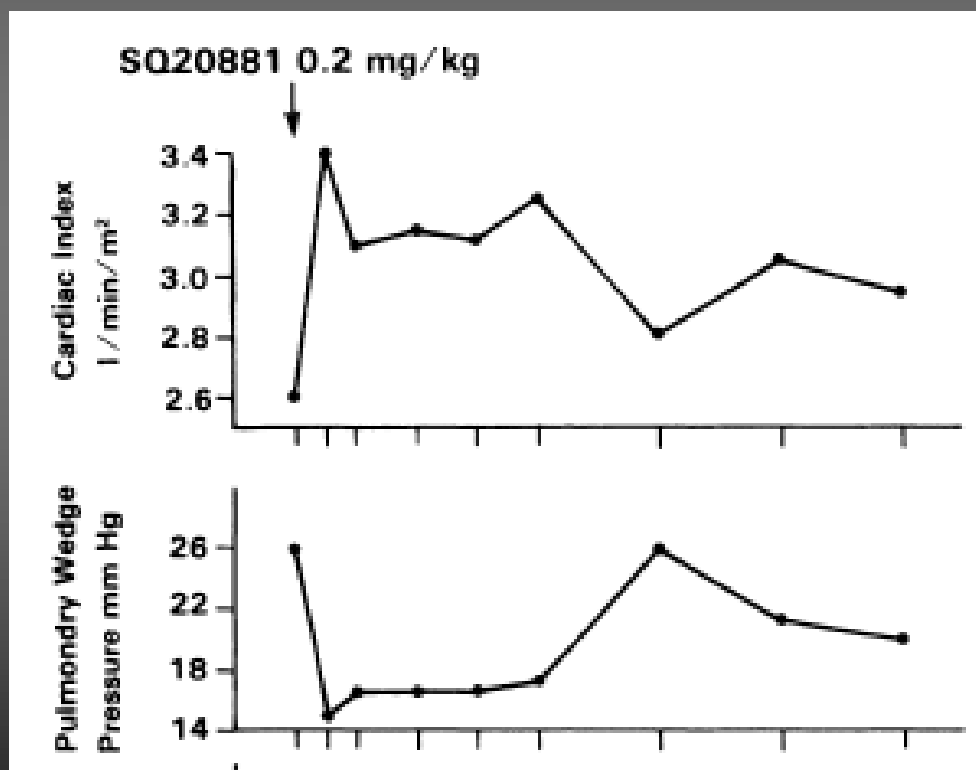
Betablokátory



Inhibitory ACE

Angiotensin converting enzyme inhibition in patients with congestive heart failure

H Gavras, DP Faxon, J Berkoben, HR Brunner and TJ Ryan
Circulation 1978;58:770-776

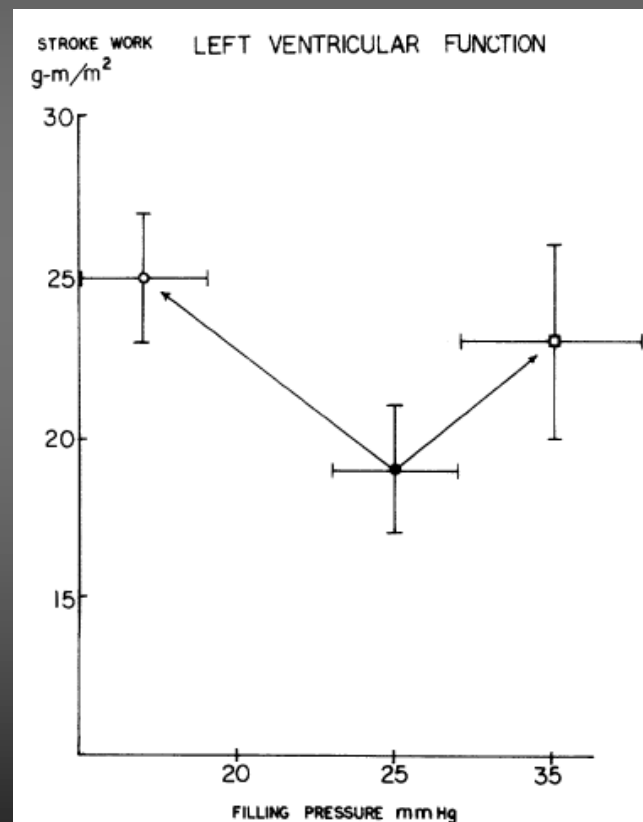


Inotropika

**Superiority of dobutamine over dopamine for augmentation of cardiac output
in patients with chronic low output cardiac failure**

HS Loeb, J Bredakis and RM Gunner

Circulation 1977;55:375-378

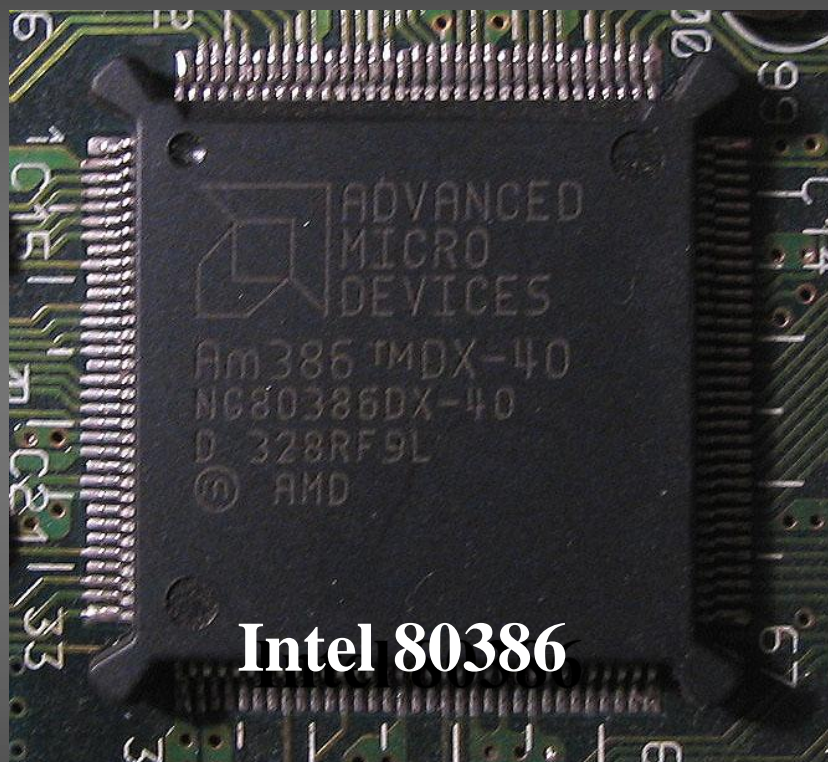


Srdeční selhání – dnes

EBM

Evidence Based Medicine

Srdeční selhání - dnes

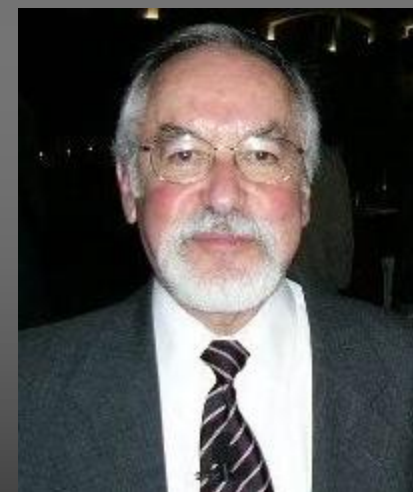


EFFECT OF VASODILATOR THERAPY ON MORTALITY IN CHRONIC CONGESTIVE HEART FAILURE

Results of a Veterans Administration Cooperative Study*

JAY N. COHN, M.D., DONALD G. ARCHIBALD, M.PHIL., SUSAN ZIESCHE, R.N., JOSEPH A. FRANCIOSA, M.D.,
W. EUGENE HARSTON, M.D., FELIX E. TRISTANI, M.D., W. BRUCE DUNKMAN, M.D., WILLIAM JACOBS, M.D.,
GARY S. FRANCIS, M.D., KATHLEEN H. FLOHR, M.D., STEVEN GOLDMAN, M.D., FREDERICK R. COBB, M.D.,
PRAVIN M. SHAH, M.D., ROBERT SAUNDERS, M.D., ROSS D. FLETCHER, M.D., HENRY S. LOEB, M.D.,
VINCENT C. HUGHES, M.D., AND BONNIE BAKER, M.D.

V-HEFT I
1986



V-HEFT I

642 mužů s ChSS

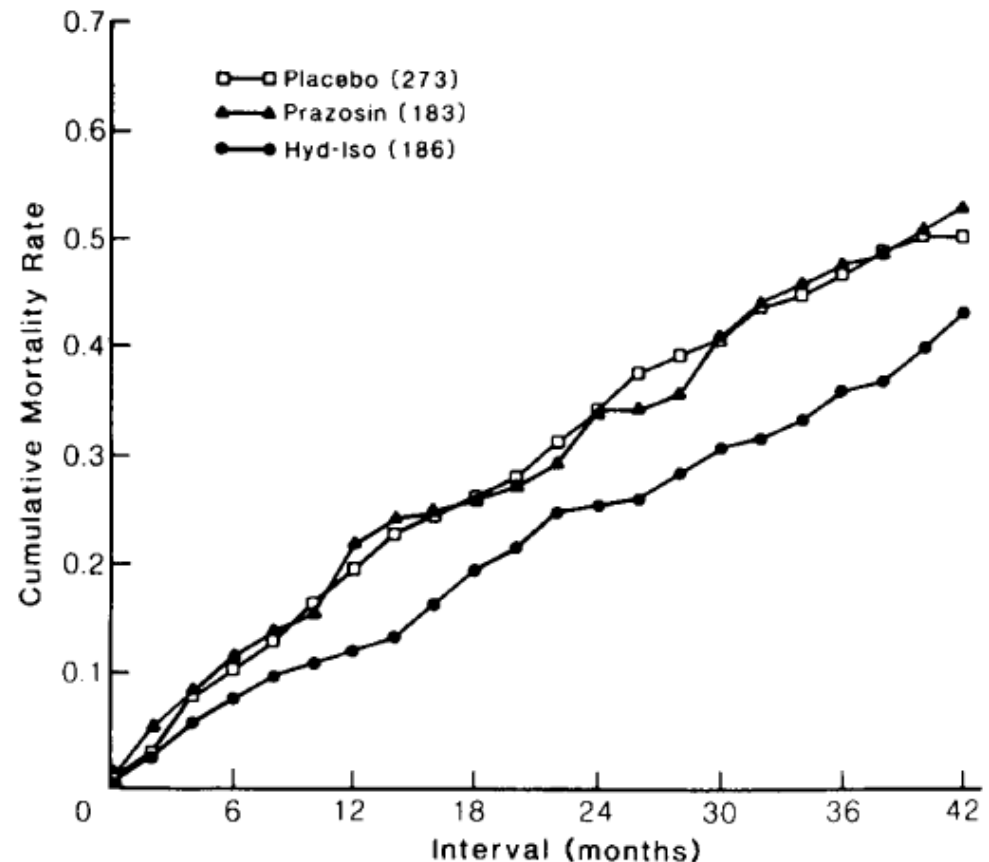
(EF pod 45%, KTI nad 0,55)

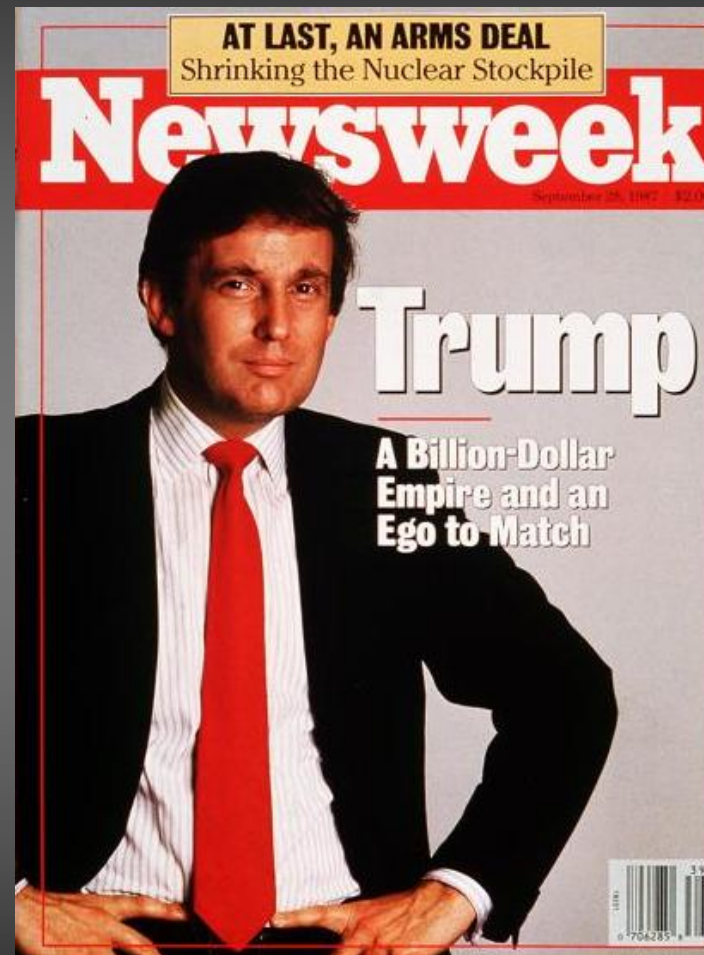
Plac 273

PZ 20 mg 183

HZ+ISD 186
(300+160mg)

Th: Dig + diu





CONSENSUS

Volume 316

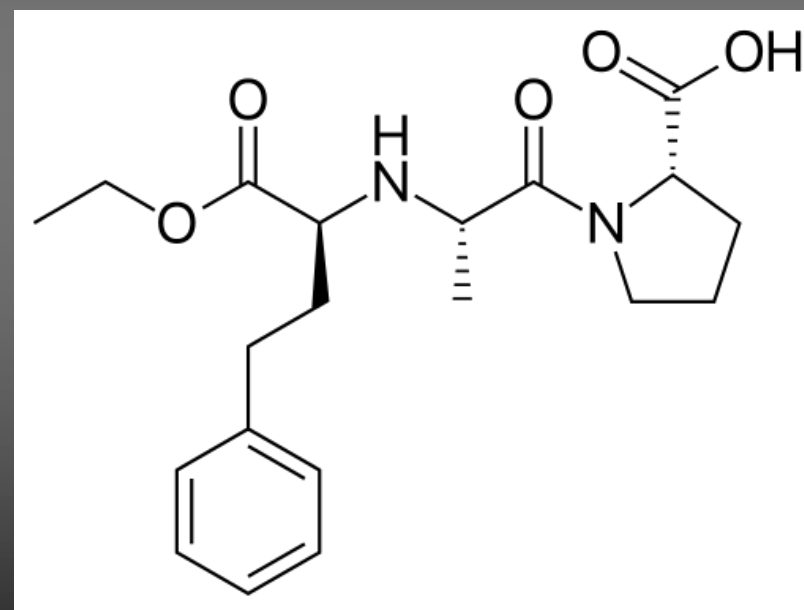
JUNE 4, 1987

Number 23

EFFECTS OF ENALAPRIL ON MORTALITY IN SEVERE CONGESTIVE HEART FAILURE

Results of the Cooperative North Scandinavian Enalapril Survival Study (CONSENSUS)

THE CONSENSUS TRIAL STUDY GROUP*



CONSENSUS

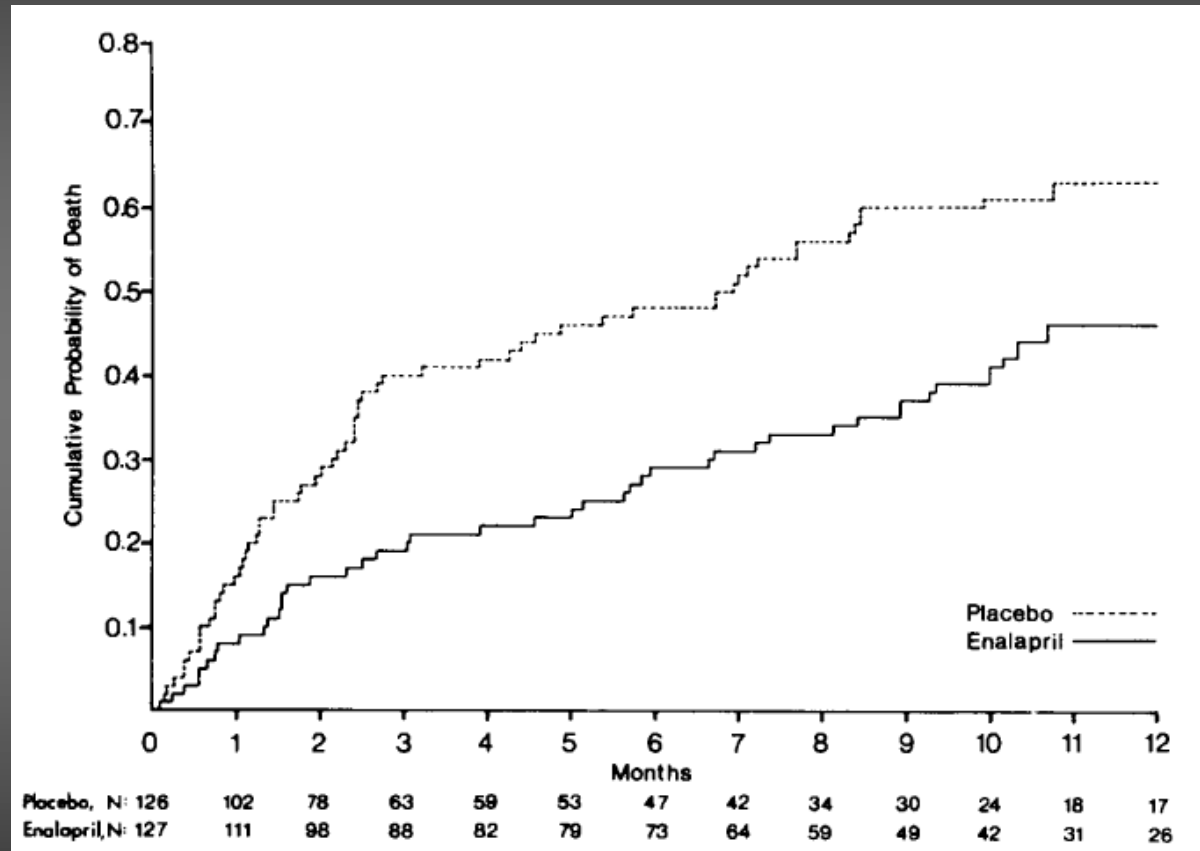
253 pts s ChSS
(NYHA IV)

Pla 126

ENP 2x10 mg
127

Th:

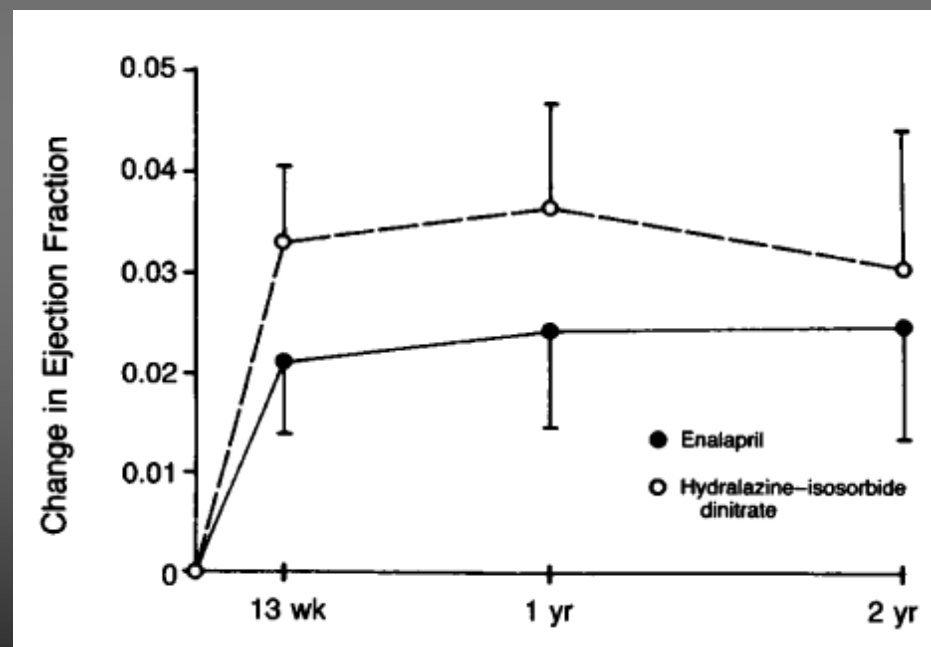
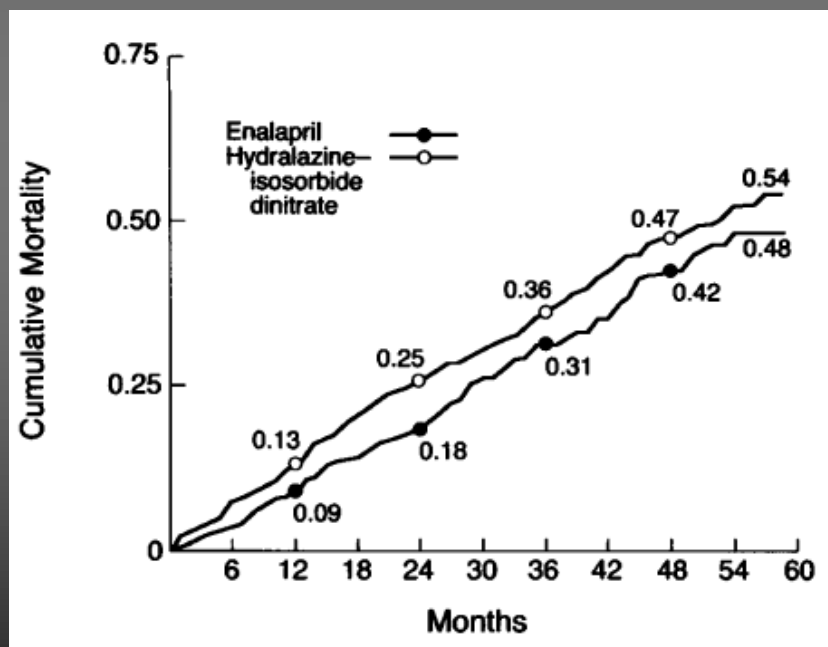
Dig+diu+vazo



A COMPARISON OF ENALAPRIL WITH HYDRALAZINE-ISOSORBIDE DINITRATE IN THE TREATMENT OF CHRONIC CONGESTIVE HEART FAILURE

JAY N. COHN, M.D., GARY JOHNSON, M.S., SUSAN ZIESCHE, R.N., FREDERICK COBB, M.D.,
GARY FRANCIS, M.D., FELIX TRISTANI, M.D., RAPHAEL SMITH, M.D., W. BRUCE DUNKMAN, M.D.,

V-HEFT II



THE EFFECT OF DIGOXIN ON MORTALITY AND MORBIDITY IN PATIENTS WITH HEART FAILURE

THE DIGITALIS INVESTIGATION GROUP*

6800 pts s ChSS a s.r.

NYHA I (13%); II(54%); III (30%); IV (2%)

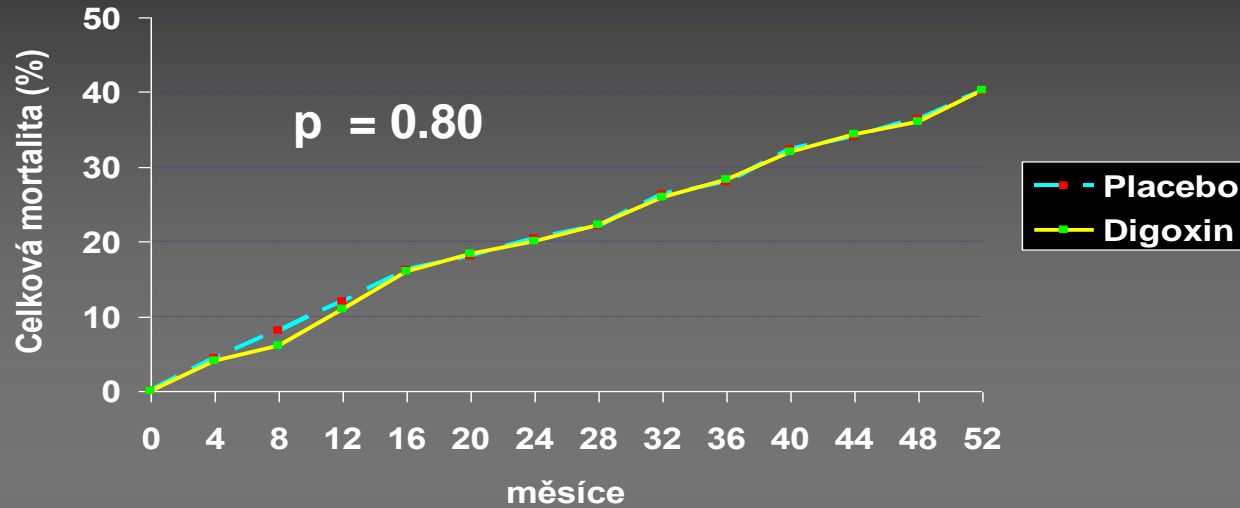
Placebo 3403

Digoxin (0,125- 0,5mg) 3397

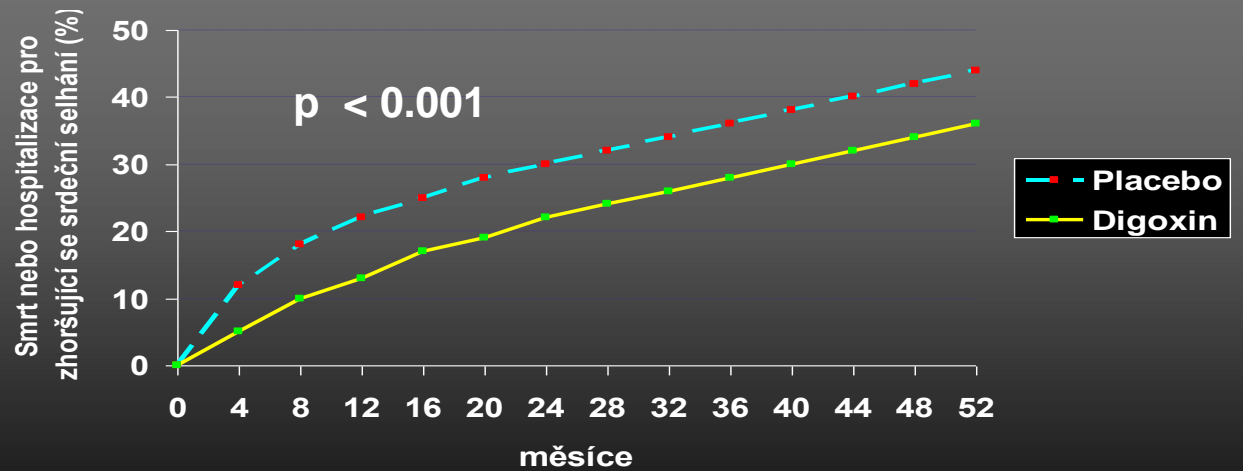
Th: diu (80%); ACEi (95%); NTG (40%)

DIG

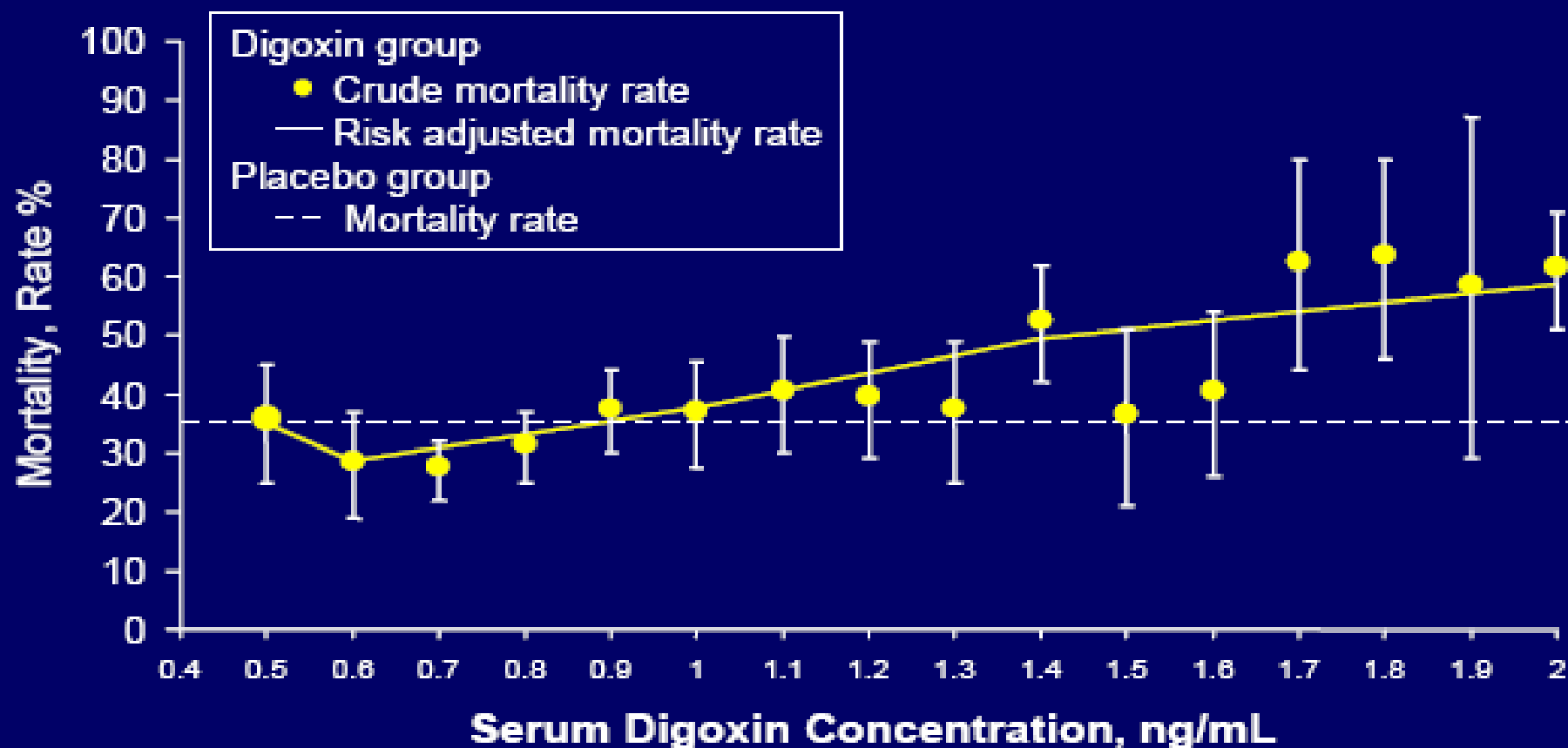
Celková mortalita



Mortalita a hospitalisace pro zhoršení srdečního selhání



All-Cause Mortality Rates by Serum Digoxin Concentration Groups



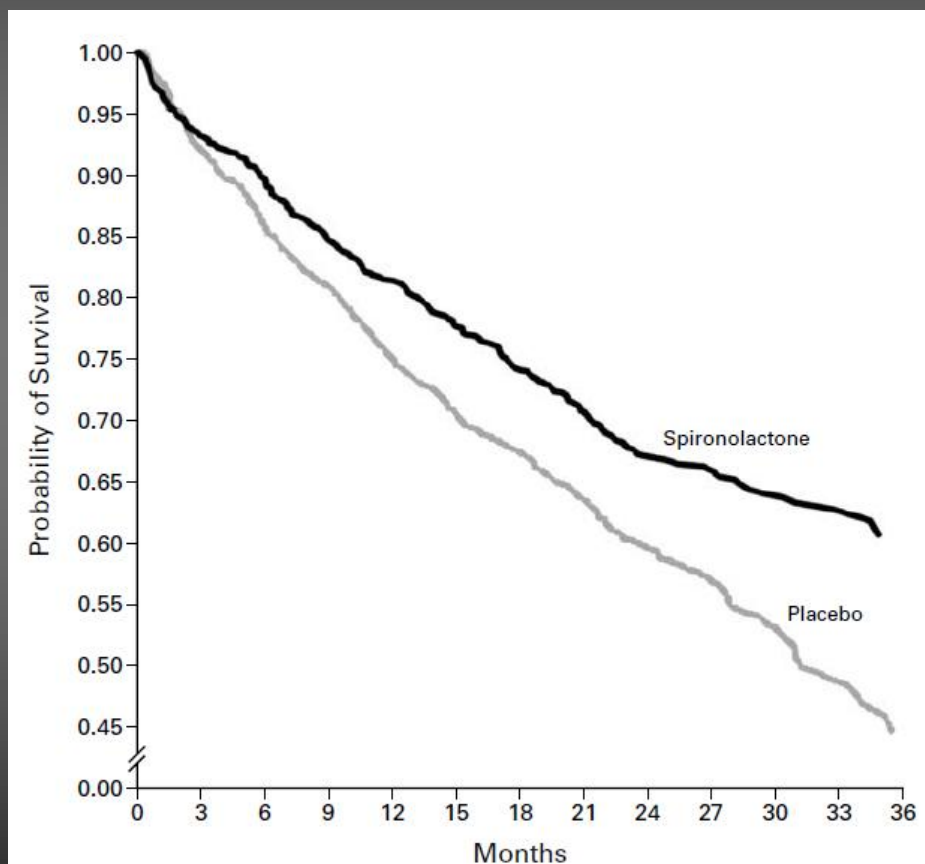
Digoxin – dnes IIb B

- Digoxin může být zvažován u nemocných se sin. rytmem ke snížení rizika hospitalizací u symptomatického selhání
- Pro léčbu HFrEF a FiS s rychlou odpovědí komor je pouze doporučen, když ostatní léčebné volby nemohou být použity
- Klidová frekvence komor je doporučena 70-90/min, ačkoliv i klidová frekvence do 110/min je ještě akceptována
- Digitalis by měl vždy být předepisován za kontroly specialisty.

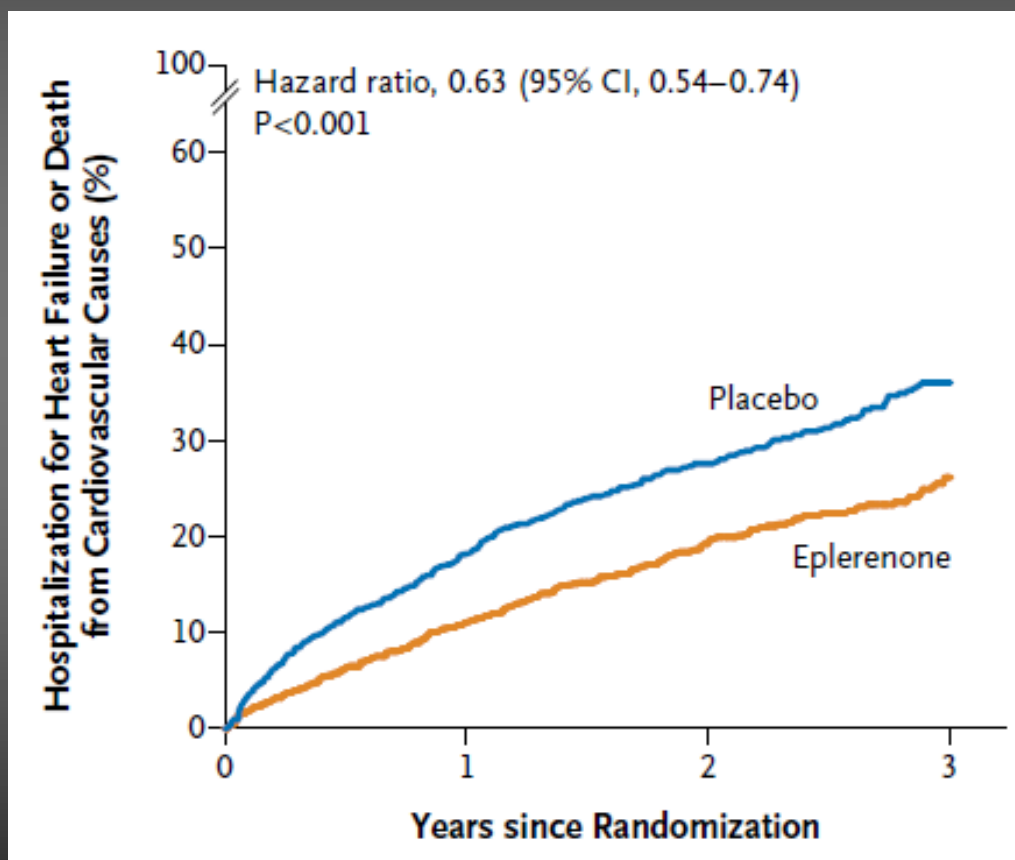
Pozornost vyžadují ženy, starší a nemocní se sníženými ledvinnými funkcemi

Blokátory mineralokortikoidních receptorů

RALES

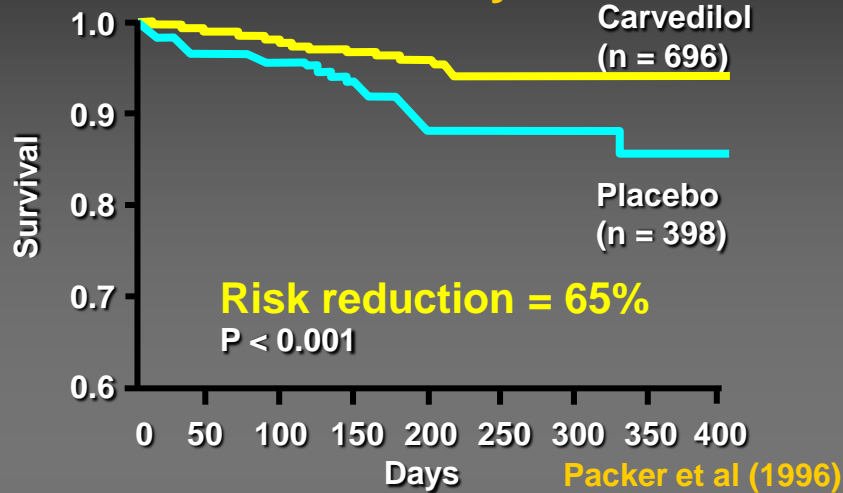


EMPHASIS-HF

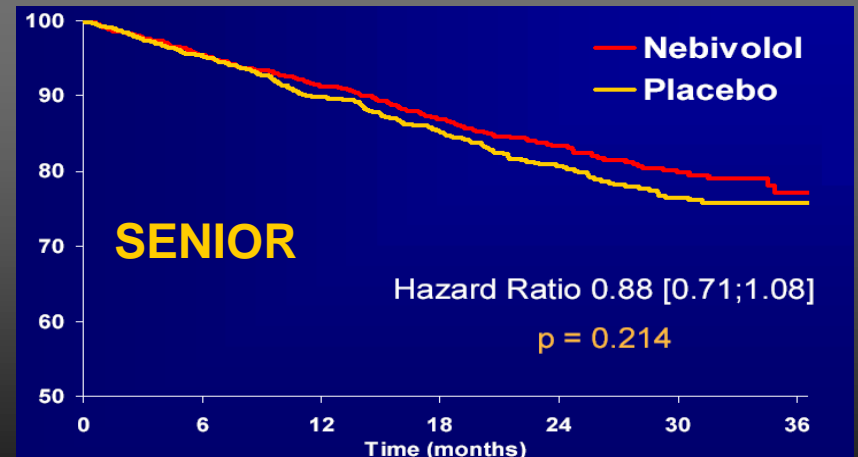
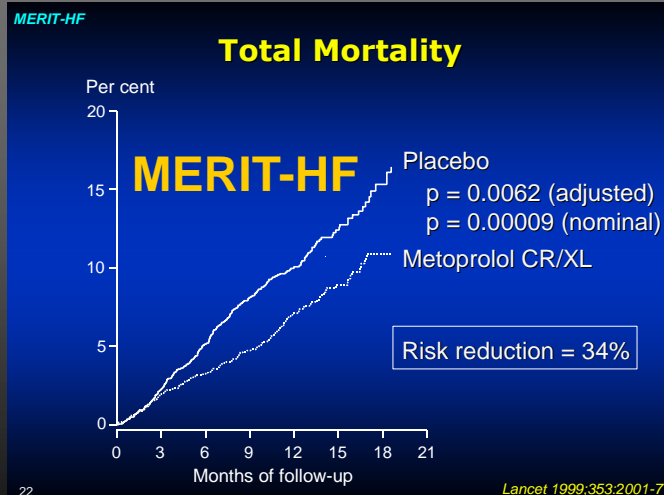
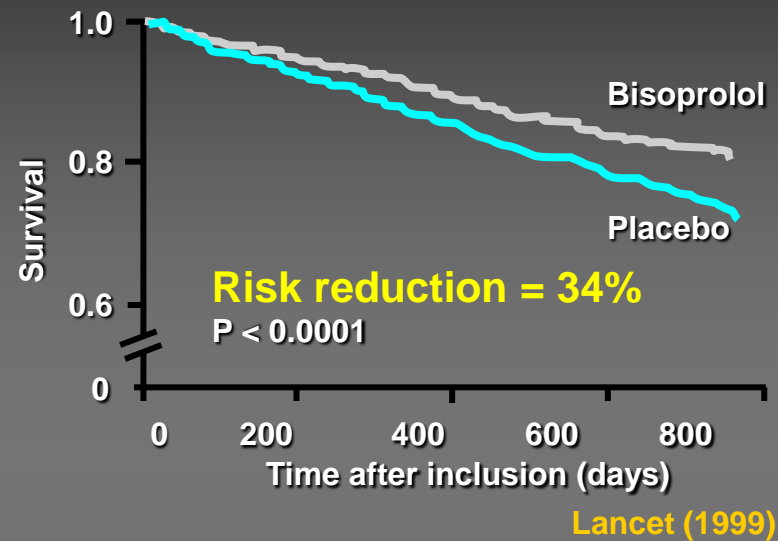


Betablokátory - celková úmrtnost

US Carvedilol Study

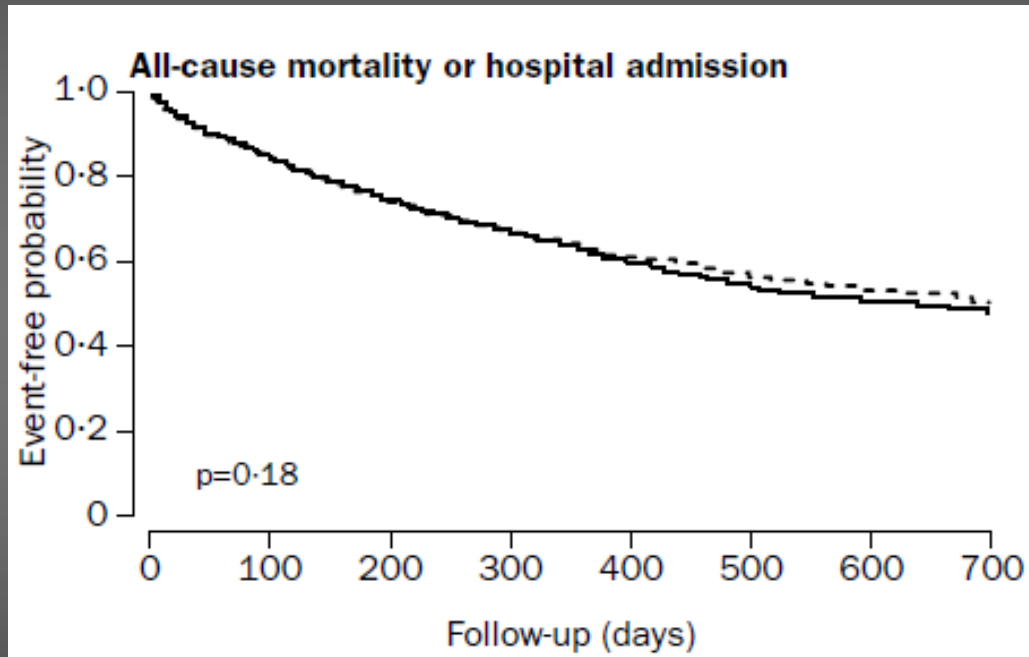


CIBIS-II

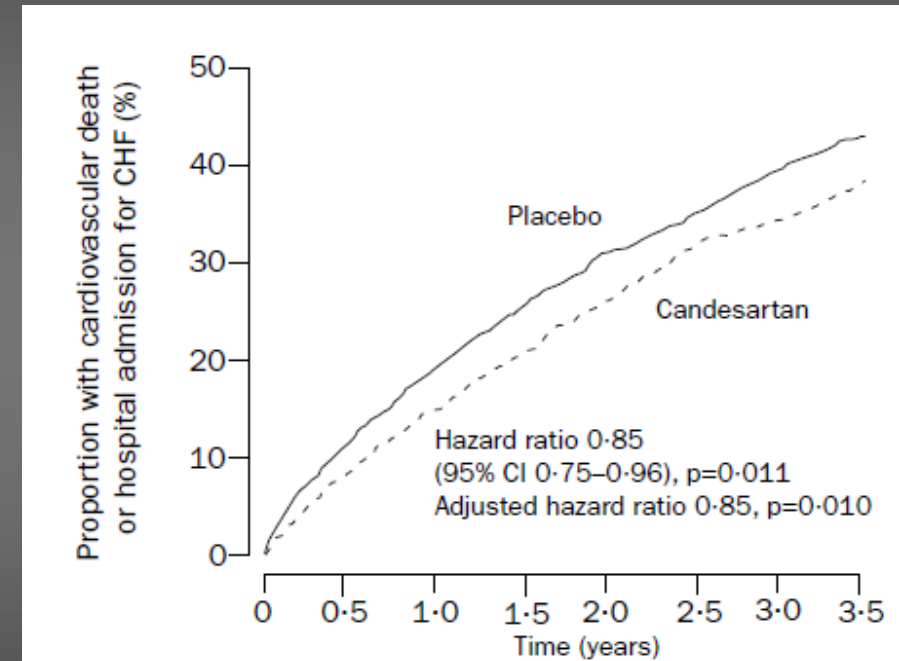


Blokátory AT1 receptorů pro AII - ARB

ELITE II



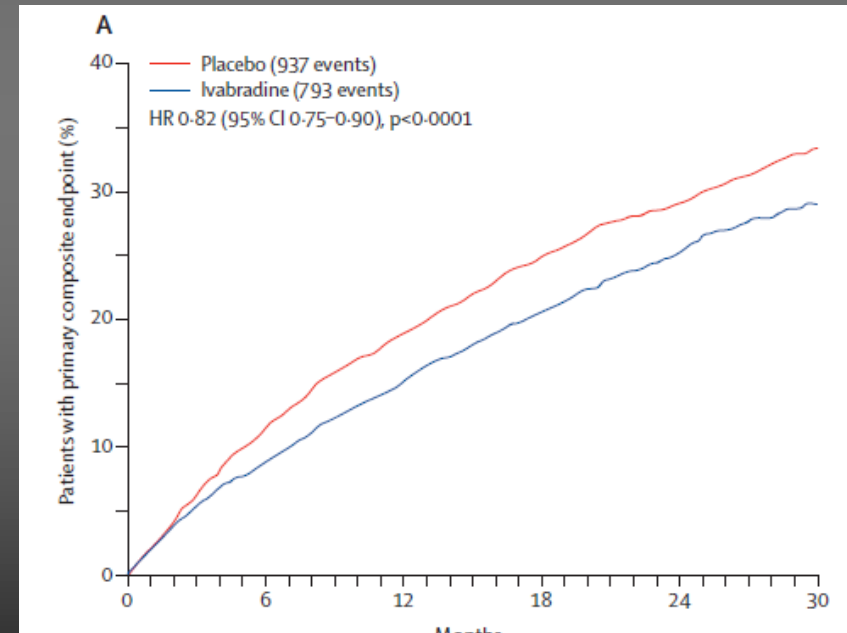
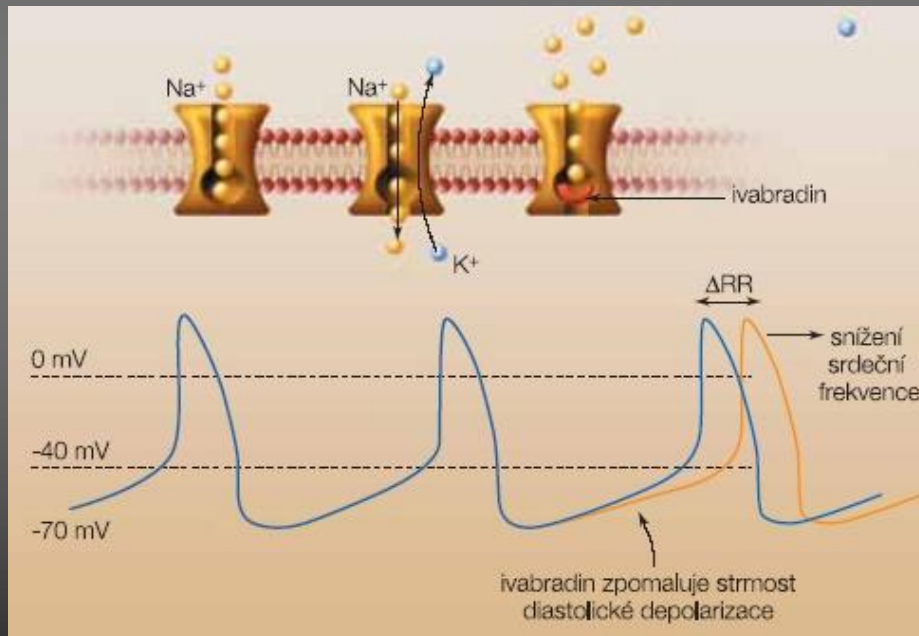
CHARM Added



If-channel inhibitor

Ivabradine and outcomes in chronic heart failure (SHIFT): a randomised placebo-controlled study

Karl Swedberg, Michel Komajda, Michael Böhm, Jeffrey S Borer, Ian Ford, Ariane Dubost-Brama, Guy Lerebours, Luigi Tavazzi, on behalf of the SHIFT Investigators*



ARNI (Sacubitril/Valsartan)

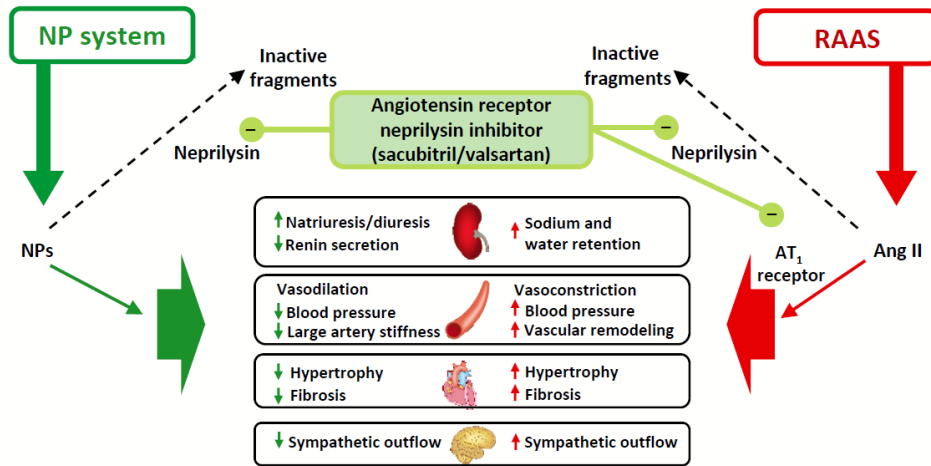
ESTABLISHED IN 1812

SEPTEMBER 11, 2014

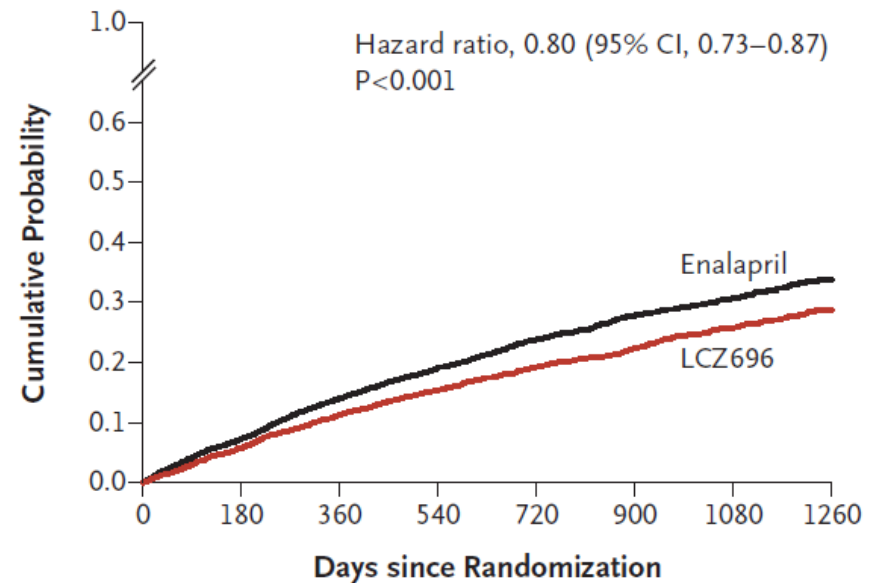
VOL. 371 NO. 11

Angiotensin–Neprilysin Inhibition versus Enalapril in Heart Failure

Novel mechanism of action of LCZ696, a first-in-class angiotensin receptor neprilysin inhibitor (ARNI)

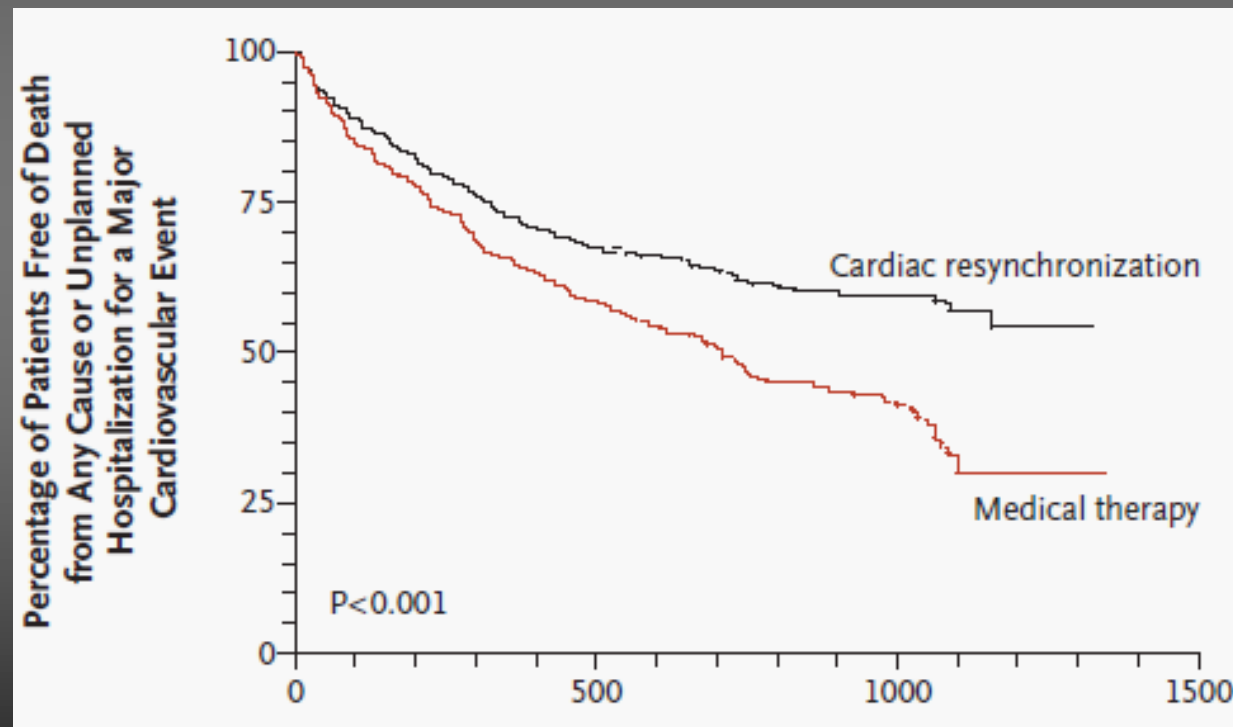


Primary End Point



CARE-HF

The Effect of Cardiac Resynchronization on Morbidity and Mortality in Heart Failure



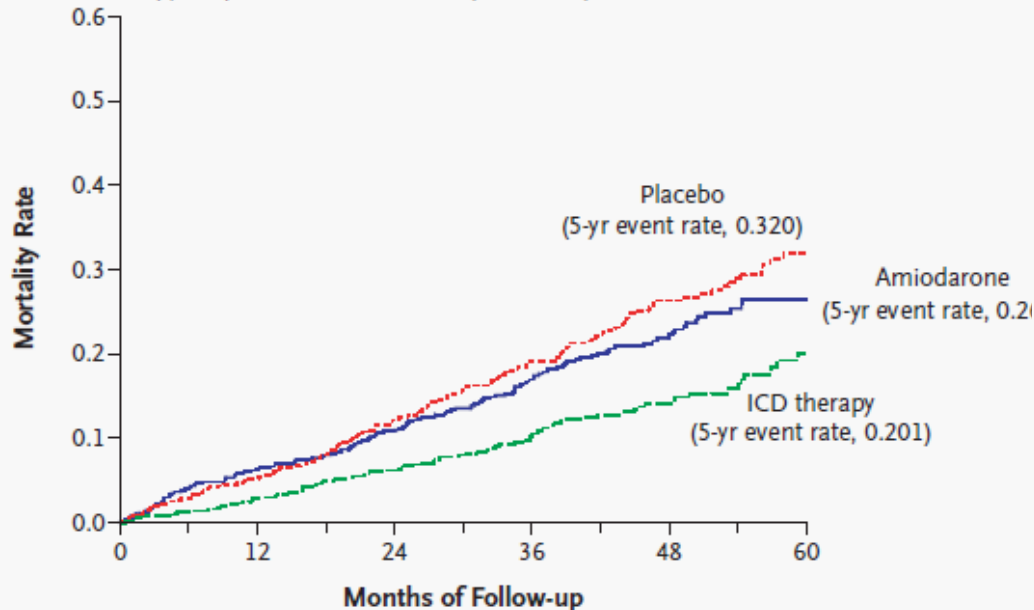
SCD-HeFT

Amiodarone or an Implantable Cardioverter–Defibrillator for Congestive Heart Failure

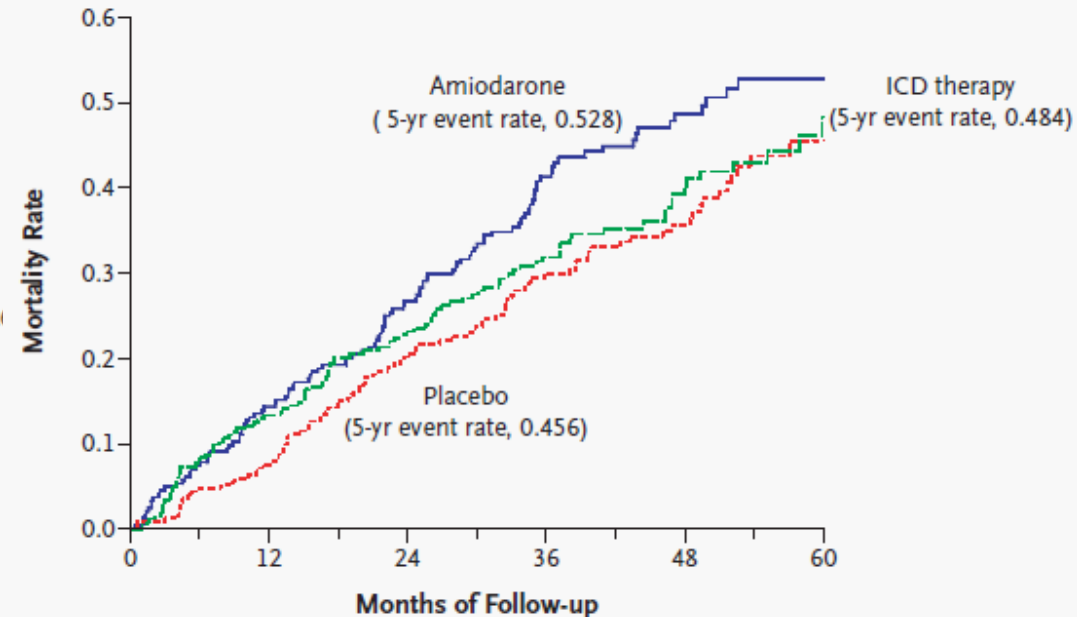
NYHA II

NYHA III

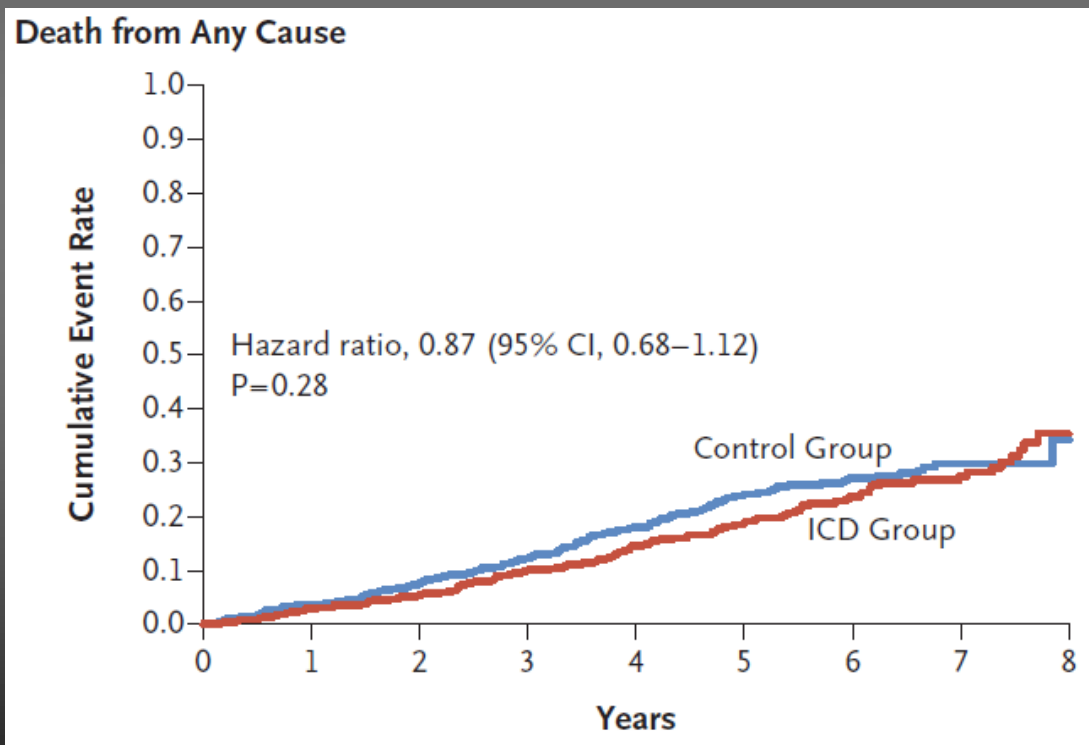
	Hazard Ratio (97.5% CI)	P Value
Amiodarone vs. placebo	0.85 (0.65–1.11)	0.17
ICD therapy vs. placebo	0.54 (0.40–0.74)	<0.001



	Hazard Ratio (97.5% CI)	P Value
Amiodarone vs. placebo	1.44 (1.05–1.97)	0.010
ICD therapy vs. placebo	1.16 (0.84–1.61)	0.30



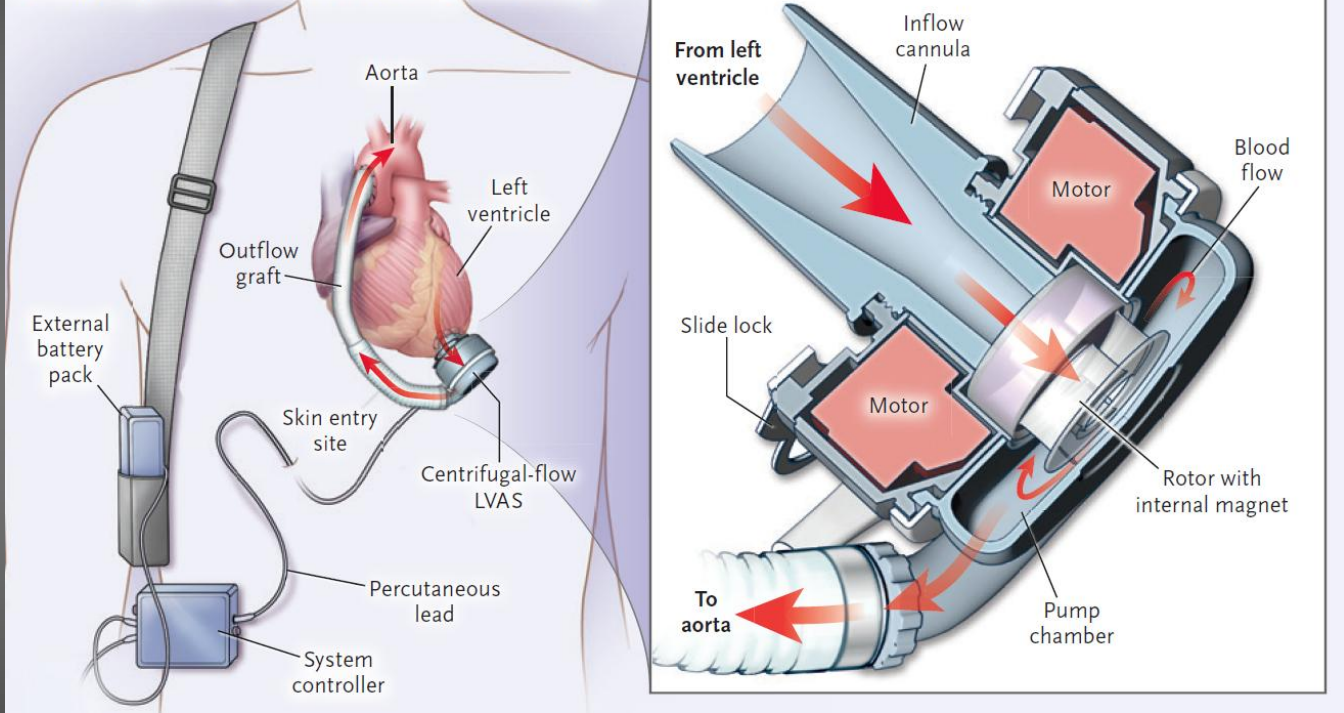
Defibrillator Implantation in Patients with Nonischemic Systolic Heart Failure



Srdeční transplantace a LVAD



B Fully Magnetically Levitated Centrifugal-Flow Pump



Diuretika k úlevě od příznaků a známek městnání

Je-li EF $\leq 35\%$ i přes optimální farmakoterapii nebo je v anamnéze symptomatická VT/VF, implantovat ICD

Pacient se symptomatickým HFrEF

Léčba ACEi a betablokátry
(titrovat do max. tolerovaných dávek)

Stále symptomatický
a EF $\leq 35\%$

Ne

Ano

Přidat MRA
(titrovat do max. tolerovaných dávek)

Ano

Stále symptomatický
a EF $\leq 35\%$

Ne

Ano

Toleruje ACEi
nebo ARB

Sin. rytmus,
QRS ≥ 130 ms

Sin. rytmus,
SF ≥ 70 /min.

Nahradit
ACEi za ARNI

Zhodnot' indikace
pro CRT



ivabradin

Tyto léčebné postupy se mohou kombinovat, je-li to indikováno

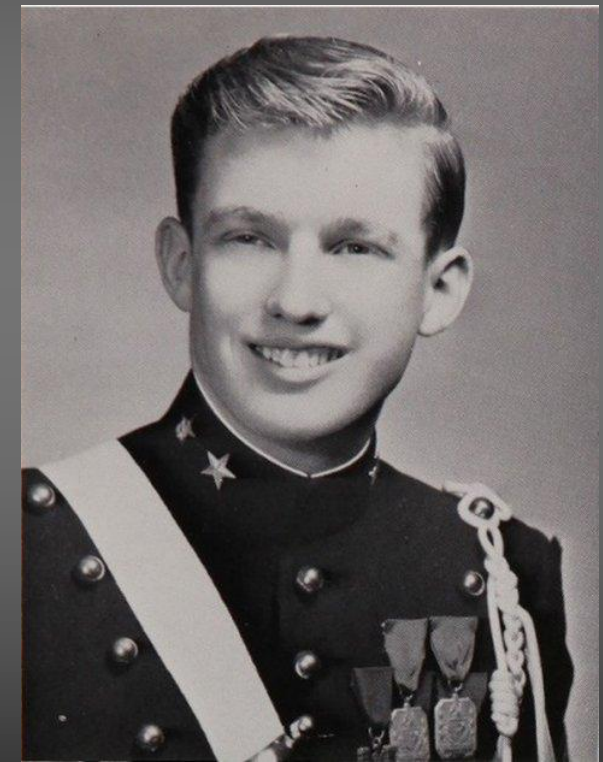
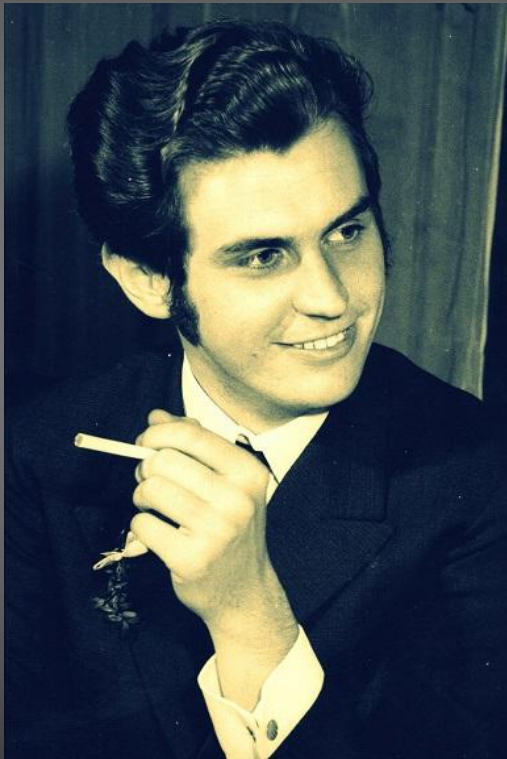
Rezistentní symptomy

Zvážit digoxin nebo H-ISD
Nebo LVAD nebo transplantaci

Žádná další akce, zvážit
snížení dávky diuretika

 Doporučení třídy I
 Doporučení třídy II

Srdeční selhání – zítra EBM?????



Never make predictions, especially about the future: Casey Stengel

Srdeční selhání – zítra

EBM????

enthusiastic, economic, effective,
eligible, enormous, entire, exact,
excellent, exclusive, expedient,
expensive or extensive based
medicine ?

**Srdeční selhání – včera, dnes
i zítra musí být hlavně
přístup**

**Empathy Based
Medicine!!**

Editorial Comment

The Cul-de-Sac at the End of the Road

LYNNE WARNER STEVENSON, MD

Boston, Massachusetts



It awakens us to the realization that the patients are there, and we are there with them