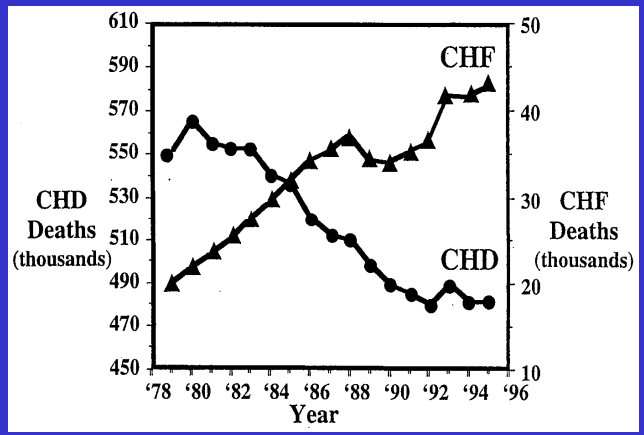
Insuffisance cardiaque en 2011: quelle prise en charge ?

Genève, 19 janvier 2011

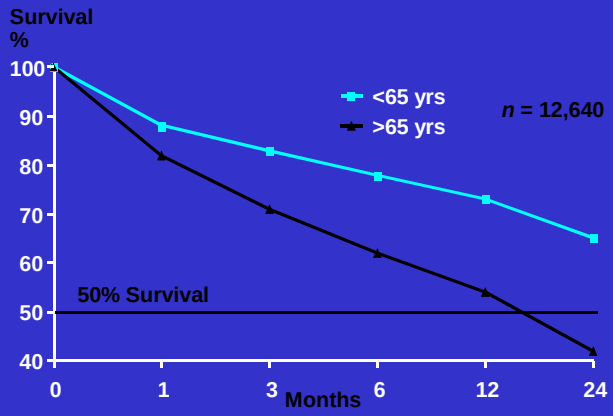
Pr. Jean-Michel Gaspoz

Service de Médecine de premier recours
Hôpitaux Universitaires de Genève
Suisse



Am J Med 2001;110 (7A): 14S-36S

Prognosis of heart failure from first hospital admission



SHIPS Database: Eur J of Heart Failure 1999

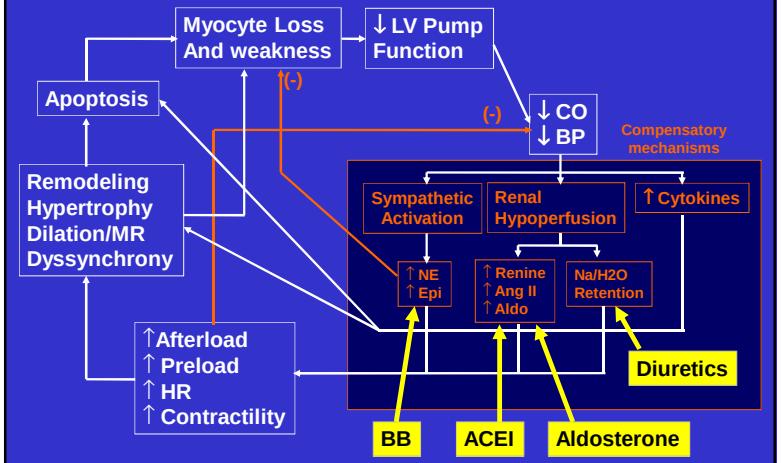
Which drugs are effective ?

New: changes in focus in heart failure

	1950-80s	2000s
Mechanisms	Exhaustion of overloaded ventricule	Neuro-hormonal model Abnormal gene expression
Goals of RX	Reduce symptoms in :	Improve quality and duration of life in :
	- ↑ contractility - ↓ fluid accumulation	- preventing remodeling - preventing progression
Management	Similar therapy for all Digitalis and diuretics	Individualized therapy Multidrug therapy

Adapted from Braunwald E. Eur Heart J 2001;22:825-36

Pharmacologic treatments of HF

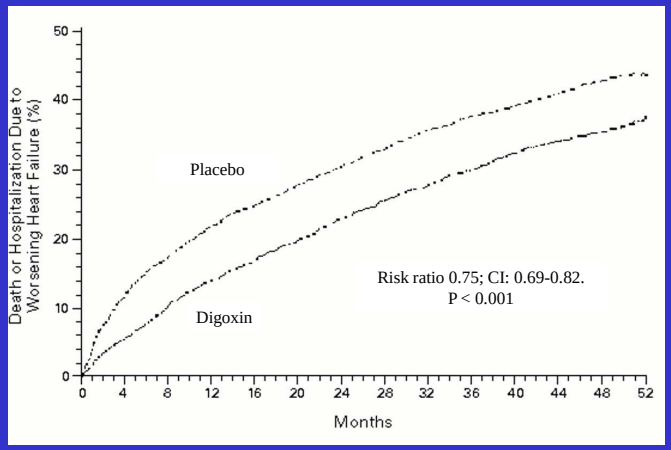


Proven treatments

TO IMPROVE SYMPTOMS
- Diuretics
- Digoxin

AND TO IMPROVE SURVIVAL
- ACE inhibitors
- ANG II receptor blockers
- β blockers
- Oral nitrates and hydralazine
- Spironolactone / Eplerenone

Incidence of death or hospitalization due to heart failure in the digoxin and placebo groups



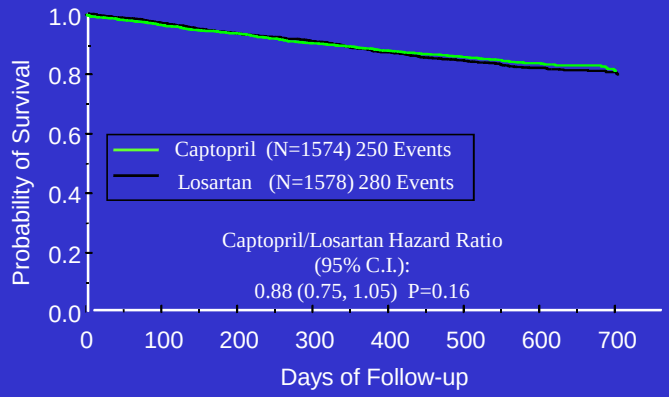
NEJM 1997;336:525-33

ACEI in congestive HF : meta-analysis

	ACEI	Placebo	Total mortality OR (95% CI)	Tot mortality or rehosp for HF OR (95%CI)
captopril	352	345	0.79 (0.54-1.14)	0.61 (0.43-0.87)
enalapril	1690	1691	0.78 (0.67-0.91)	0.68 (0.59-0.79)
lisinopril	351	195	0.62 (0.23-1.67)	0.50 (0.19-1.27)
quinapril	548	327	0.79(0.22-2.85)	0.79 (0.22-2.85)
ramipril	714	513	0.67 (0.36-1.24)	0.52 (0.57-0.74)
Overall	3870	3235	077 (0.67-0.88)	0.65 (057-0.74)

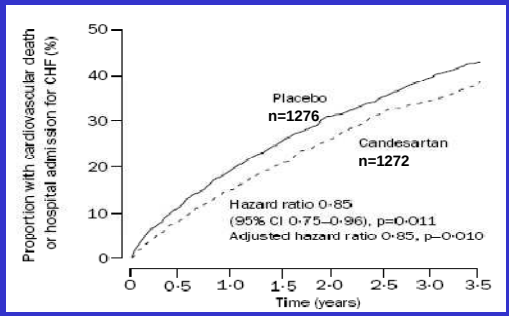
JAMA 1995;273:1450-1456

Losartan Heart Failure Survival Study - ELITE II
Primary Endpoint: All-Cause Mortality



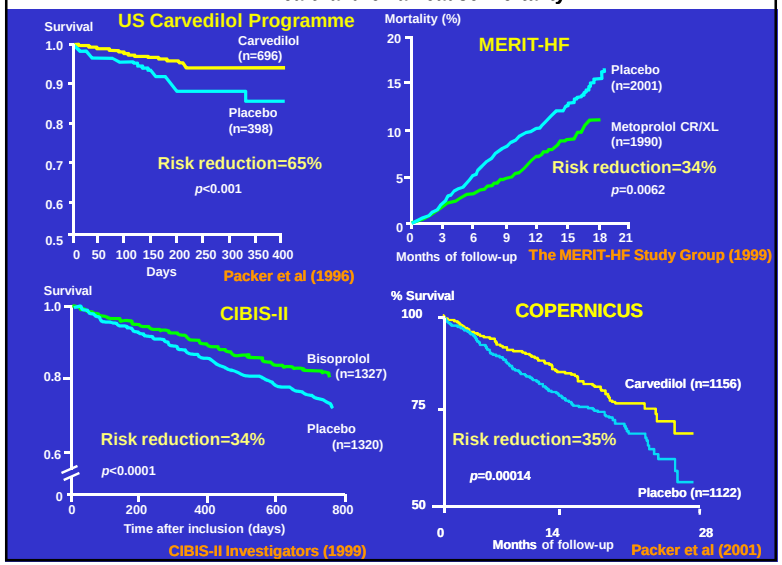
Lancet 2000;355:1582-7

ARB on top of Tx for HF : CHARM-added



Lancet 2003; 362: 767

BB in heart failure –all-cause mortality

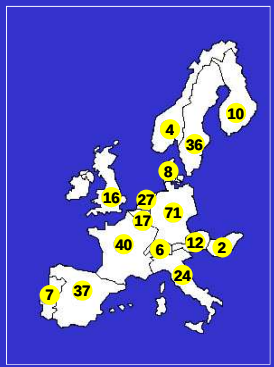


BB in Heart Failure

Trials	Patients Characteristics	Drugs Selectivity	Target dose (mg)	Mortality RR (%)	NNT	Placebo Mortality rate
US Carvedilol	NYHA II-IV FE ≤ 35%	Carvedilol $\alpha_1, \beta_1, \beta_2$ / Placebo	25 2x/j	59	22	11.1%
COPERNICUS	NYHA III-IV FE < 25%	Carvedilol $\alpha_1, \beta_1, \beta_2$ / Placebo	25 2x/j	35	14	18.5%
CIBIS II	NYHA III-IV FE ≤ 35%	Bisoprolol β_1 / Placebo	10	32	18	13.2%
MERIT-HF	NYHA II-IV FE ≤ 40%	Metoprololsuccinate β_1 / Placebo	200	35	26	11.0%
COMET	NYHA II-IV FE ≤ 35%	Carvedilol $\alpha_1, \beta_1, \beta_2$ / Metoprolol tartrate β_1	25 2x/j 50 2x/j	15	17	-

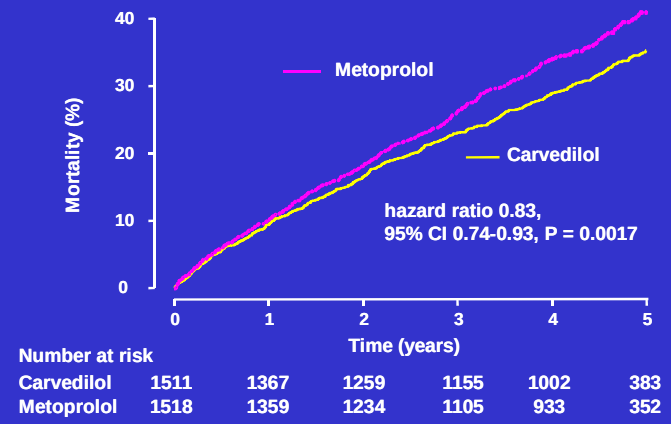
Carvedilol Or Metoprolol European Trial

- 3,029 patients with class II-IV heart failure were recruited at 317 centres in 15 European countries



Lancet 2003;362:7-13

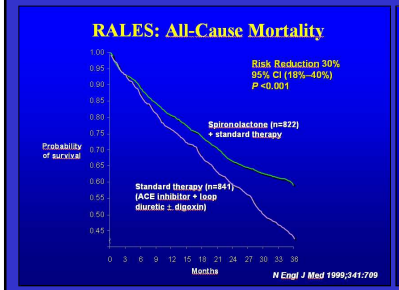
Primary endpoint of mortality

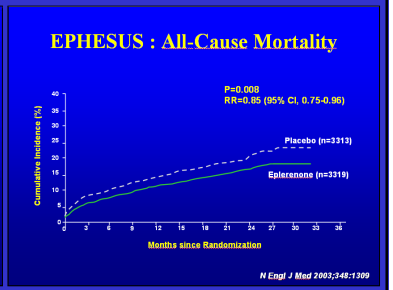


Number at risk						
Carvedilol	1511	1367	1259	1155	1002	383
Metoprolol	1518	1359	1234	1105	933	352

Aldosterone Blockage

On top of ACEI/ARB and BB in Pts with NYHA III-IV and severe LVD





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ESTABLISHED IN 1812 JANUARY 6, 2011 VOL. 364 NO. 1

Eplerenone in Patients with Systolic Heart Failure and Mild Symptoms

Faiez Zannad, M.D., Ph.D., John J.V. McMurray, M.D., Henry Krum, M.B., Ph.D., Dirk J. van Veldhuisen, M.D., Ph.D., Karl Swedberg, M.D., Ph.D., Harry Shi, M.S., John Vincent, M.B., Ph.D., Stuart J. Pocock, Ph.D., and Bertram Pitt, M.D., for the EMPHASIS-HF Study Group*

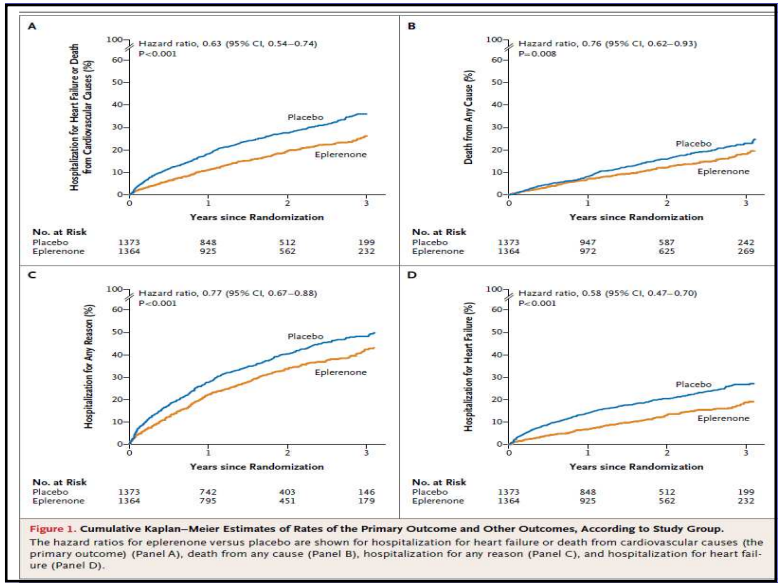


Figure 1. Cumulative Kaplan–Meier Estimates of Rates of the Primary Outcome and Other Outcomes, According to Study Group.
The hazard ratios for eplerenone versus placebo are shown for hospitalization for heart failure or death from cardiovascular causes (the primary outcome) (Panel A), death from any cause (Panel B), hospitalization for any reason (Panel C), and hospitalization for heart failure (Panel D).

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.

N Engl J Med 2004;351:543-51.

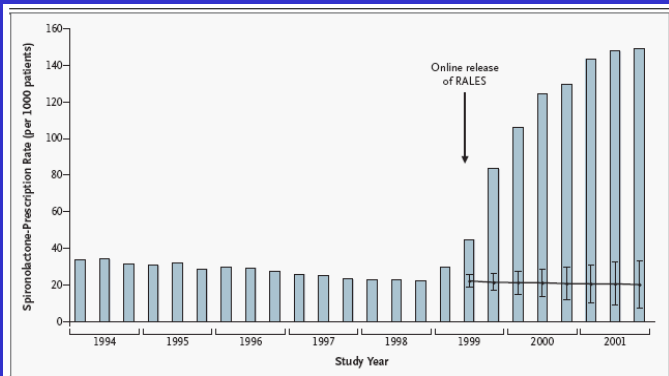


Figure 1. Rate of Prescriptions for Spironolactone among Patients Recently Hospitalized for Heart Failure Who Were Receiving ACE Inhibitors.
Each bar shows the observed spironolactone-prescription rate per 1000 patients during one four-month interval. The line beginning in the second interval of 1999 shows projected prescription rates derived from interventional autoregressive integrated moving-average (ARIMA) models, with I bars representing the 95 percent confidence intervals.

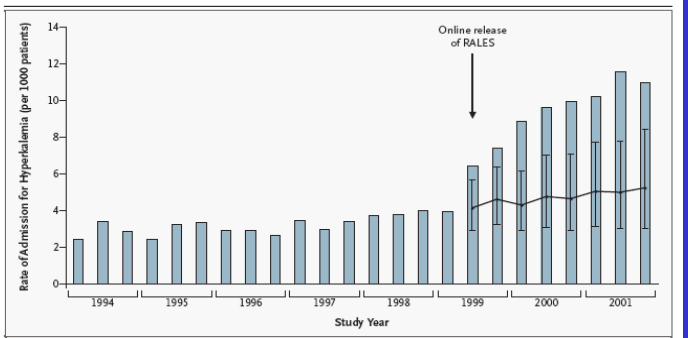


Figure 2. Rate of Hospital Admission for Hyperkalemia among Patients Recently Hospitalized for Heart Failure Who Were Receiving ACE Inhibitors.

Each bar shows the rate of hospital admission for hyperkalemia per 1000 patients during one four-month interval. The line beginning in the second interval of 1999 shows projected admission rates for hyperkalemia derived from interventional ARIMA models, with I bars representing the 95 percent confidence intervals.

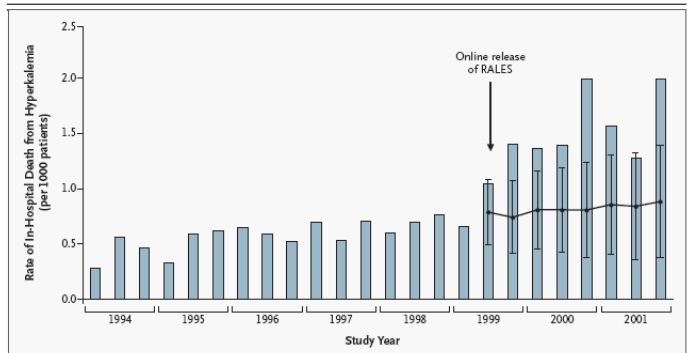


Figure 3. Rate of In-Hospital Death Associated with Hyperkalemia among Patients Recently Hospitalized for Heart Failure Who Were Receiving ACE Inhibitors.

Each bar shows the rate of in-hospital death associated with hyperkalemia per 1000 patients during one four-month interval. The line beginning in the second interval of 1999 shows projected death rates derived from interventional ARIMA models, with I bars representing the 95 percent confidence intervals.

TORIC Study
Hospital readmissions at 1 year

	Torasemide (n = 113)	Furosemide (n=121)	p value
Heart failure	19 (17%)	39 (32%)	<0.001
Cardio-vascular	50 (44%)	71 (59%)	0.03
All causes	80 (71%)	92 (76%)	0.35

Murray MD. Am J Med 2001;111:513-20

Which drug when?

Guidelines for the treatment of systolic heart failure (ACC/AHA 2005, ESC 2008) (1)

- ACE inhibition in all patients, unless not tolerated or contraindicated.
- β-blockers in all stable patients, unless contraindicated.
- Diuretics in patients who have evidence of fluid retention.
- Digitalis for patients with concomitant atrial fibrillation, or whose symptoms are not controlled.

Guidelines for the treatment of systolic heart failure (2)

- Spironolactone (eplerenone) in patients with recent or current class III-IV symptoms, preserved renal function, and a normal potassium concentration.
- Ang II receptor blockers in patients who cannot tolerate ACE inhibitors (or in addition to ACE inhibitors if beta-blockers intolerant)
- A combination of oral nitrates and hydralazine in patients who are treated with digitalis, diuretics and a β-blocker, and who cannot be given ACE inhibitors or Ang II receptor blockers.

How many medications do you need to treat heart failure?

- In patients with mild heart failure
  2 drugs: an ACE inhibitor (or an Ang II blocker)
  a β-blocker.
- In patients with severe heart failure:
  5-6 drugs: an ACE inhibitor (or an Ang II blocker)
  a β-blocker (or an Ang II blocker ? and)
  spirolonactone (eplerenone)
  a diuretic
  digoxin
- In patients with moderate heart failure:
  everything in between.

Drugs do not work alone.

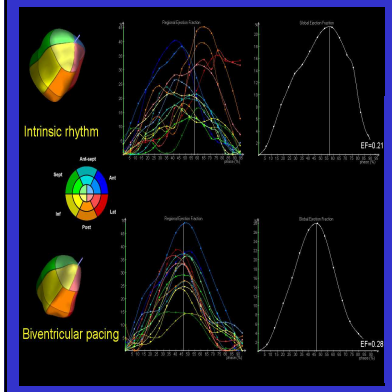
Non-pharmacological approach to systolic heart failure

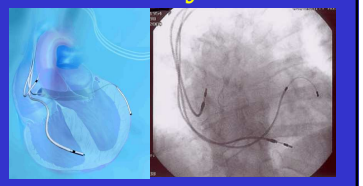
- Weight loss in obese patients
- Sodium restriction (~ 2 gr/day)
- Aerobic exercise (cardiac rehabilitation)

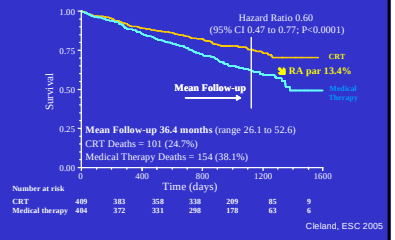
Other important aspects

- Determine the etiology (ischemia,valvular defects)
- Look for precipitating factors and correct them:
  Non-compliance with diet or medications
  Negative inotropes (anti-arrhythmics, Ca blockers)
  Alcohol, cocaine abuse
  Medications that worsen renal dysfunction (NSAIDS)
- Aspirin if coronary heart disease
- Treatment of hypercholesterolemia
- Anticoagulation if LVEF < 25%
- Treat hypertension vigorously

CARE-HF Extension study CRT and all cause mortality







Burri, Heart Rhythm 2005;2:447-8

Critères pour thérapie de re-synchronisation

- NYHA III-IV malgré traitement ttt méd optimal
- QRS ≥ 120ms
- LVEF ≤ 35%
- Combinaison avec cardioverteur-défribrillateur ?

Critères pour défibrillateur

- NYHA II-III malgré traitement ttt méd optimal
- LVEF ≤ 35%

Mais si

- NYHA III-IV malgré traitement ttt méd optimal
- QRS ≥ 120ms

→ Combinaison avec cardioverteur-défribrillateur

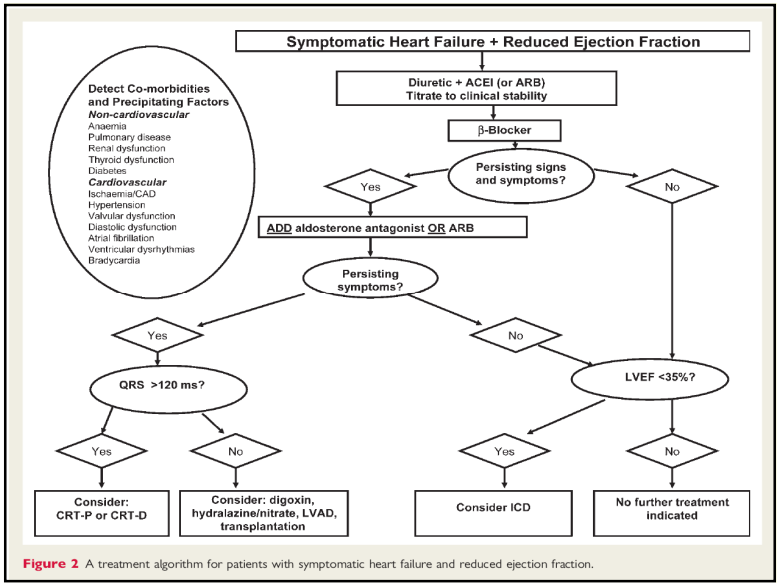


Figure 2 A treatment algorithm for patients with symptomatic heart failure and reduced ejection fraction.

Table 20 Dosages of commonly used drugs in heart failure

	Starting dose (mg)		Target dose (mg)	
ACEI				
Captopril	6.25	t.i.d.	50–100	t.i.d.
Enalapril	2.5	b.i.d.	10–20	b.i.d.
Lisinopril	2.5–5.0	o.d.	20–35	o.d.
Ramipril	2.5	o.d.	5	b.i.d.
Trandolapril	0.5	o.d.	4	o.d.
ARB				
Candesartan	4 or 8	o.d.	32	o.d.
Valsartan	40	b.i.d.	160	b.i.d.
Aldosterone antagonist				
Eplerenone	25	o.d.	50	o.d.
Spironolactone	25	o.d.	25–50	o.d.
β-Blocker				
Bisoprolol	1.25	o.d.	10	o.d.
Carvedilol	3.125	b.i.d.	25–50	b.i.d.
Metoprolol succinate	12.5/25	o.d.	200	o.d.
Nebivolol	1.25	o.d.	10	o.d.

New or experimental therapies

SHIFT

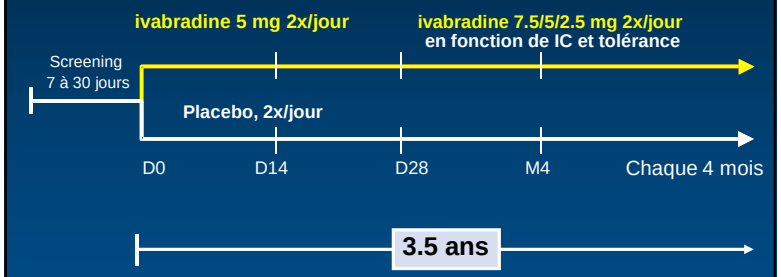
Systolic **H**eart failure treatment with the *If* inhibitor ivabradine **T**rial

Critères d'inclusion

- ≥18 ans
- Insuffisance cardiaque en stade II à IV (NYHA)
- Étiologie ischémique/non-ischémique
- Dysfonction systolique du ventricule gauche (EF ≤35%)
- Fréquence cardiaque ≥70 bpm
- Rythme sinusal
- Hospitalisation pour aggravation de l'insuffisance cardiaque ≤12 mois

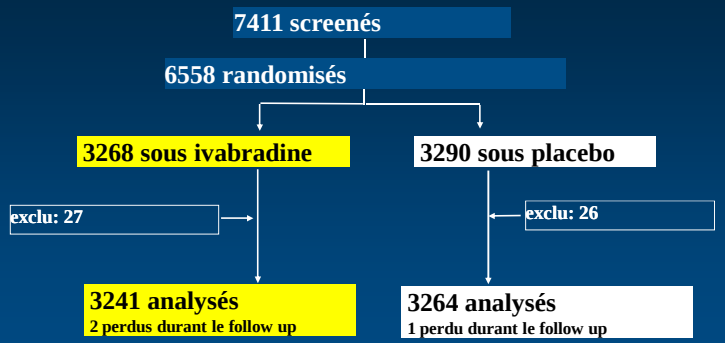
Swedberg K, et al. *Eur J Heart Fail.* 2010;12:75-81.

Design de l'étude



Swedberg K, et al. *Eur J Heart Fail.* 2010;12:75-81.

Patients et follow up



Durée médiane de l'étude: 22.9 mois; maximum: 41.7 mois

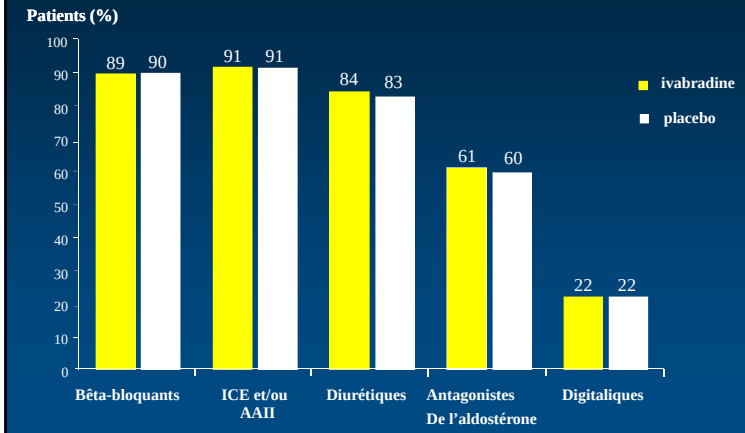
Caractéristiques à l'inclusion

	ivabradine	placebo
	3241	3264
âge moyen, (ans)	60.7	60.1
homme, %	76	76
étiologie ischémique, %	68	67
NYHA II, %	49	49
NYHA III/IV, %	51	51
Post IM, %	56	56
Diabète, %	30	31
Hypertension, %	67	66

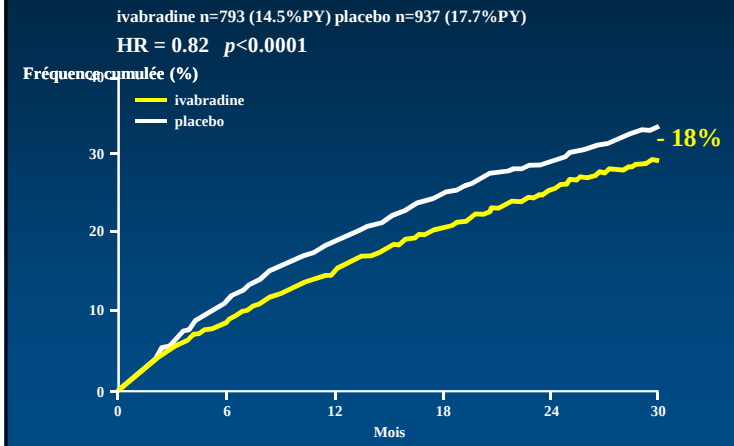
Caractéristiques à l'inclusion

	ivabradine	placebo
	3241	3264
FC moyenne, bpm	80	80
FEVG, %	29	29
PA systolique moyenne, mmHg	122	121
PA diastolique moyenne, mmHg	76	76

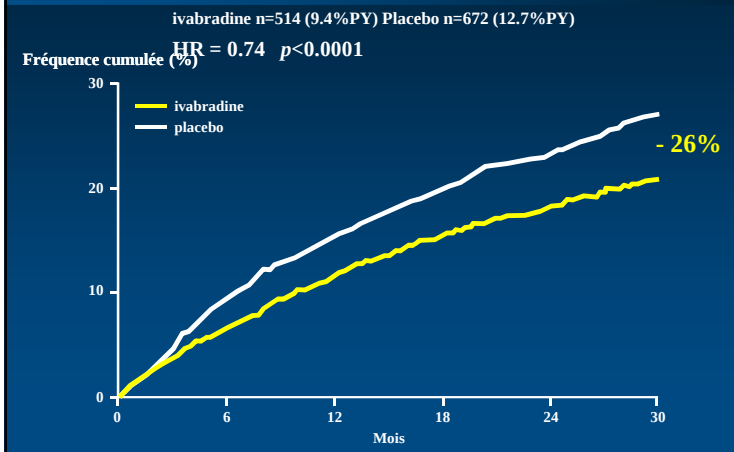
Traitements médicamenteux de l'IC à l'inclusion



Critère primaire composé : mortalité cardiovasculaire / hosp pour aggravation IC



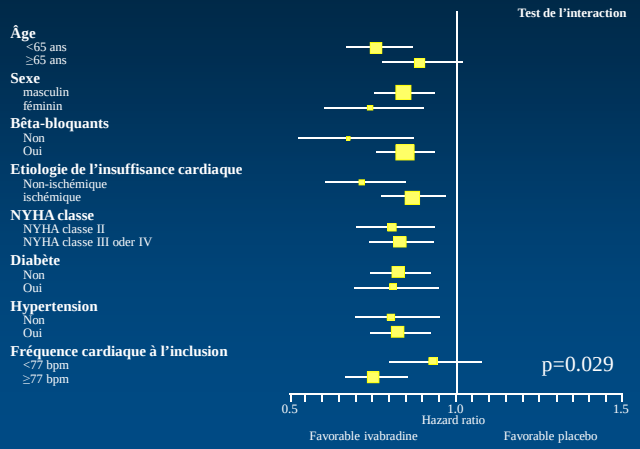
Hospitalisations pour insuffisance cardiaque



Effet de l'ivabradine sur l'ensemble des critères

Critères	Hazard ratio	95% CI	*p* valeur
Critère primaire composé	0.82	[0.75;0.90]	*p*<0.0001
Mortalité CV	0.91	[0.80;1.03]	*p*=0.128
Mortalité toute cause	0.90	[0.80;1.02]	*p*=0.092
Mortalité pour IC	0.74	[0.58;0.94]	*p*=0.014
Hospitalisations toute cause	0.89	[0.82;0.96]	*p*=0.003
Hospitalisations cardiovasculaire	0.85	[0.78;0.92]	*p*=0.0002
Mortalité CV/hospitalisations pour IC ou IM non fatal	0.82	[0.74;0.89]	*p*<0.0001

Effet de l'ivabradine dans les sous-groupes prédefinis



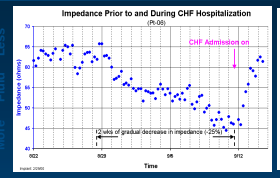
Conclusion

- L'IC avec dysfonction sytolique et fréquence cardiaque élevée est associée à un mauvais pronostic CV (Critère primaire composé dans le groupe placebo est de 18%/an).
- L'ivabradine réduit la mortalité CV ou l'hospitalisation pour IC de 18% (p<0.0001). La réduction du risque absolu est de 4.2%.NNT sur 1 année pour prévenir …
  - ✓1 événement du critère primaire = 26
  - ✓1 hospitalisation pour insuffisance cardiaque = 27
- De plus, le traitement avec ivabradine est sûr et bien toléré.

Experimental therapies

- **Transpulmonary Impedance** (Optivol)

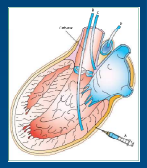
Circulation. 2005; 112:841-8

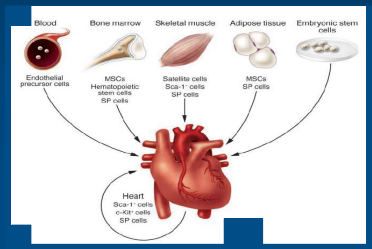


Ann Intern Med. 2004;140:729

Lancet 2005; 366:1005

- **Stem Cell therapy**

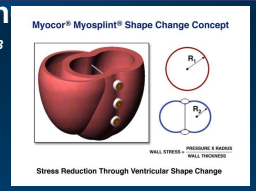


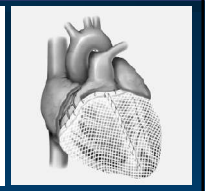


Experimental therapies

- **Surgical remodelin**

J Thorac Cardiovasc Surg 2003;126:983





- **Percutaneous mitral valve repair**

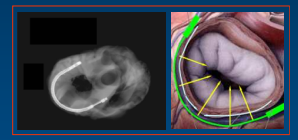


Table 32 Recommended components of heart failure management programmes

- Multidisciplinary approach frequently led by HF nurses in collaboration with physicians and other related services
- First contact during hospitalization, early follow-up after discharge through clinic and home-based visits, telephone support, and remote monitoring
- Target high-risk, symptomatic patients
- Increased access to healthcare (telephone, remote monitoring, and follow-up)
- Facilitate access during episodes of decompensation
- Optimized medical management
- Access to advanced treatment options
- Adequate patient education with special emphasis on adherence and self-care management
- Patient involvement in symptom monitoring and flexible diuretic use
- Psychosocial support to patients and family and/or caregiver

Delta réseau de soins CANTON de GENEVE

Insuffisance Cardiaque

ASSEMBLÉE DELTA-RETIS

10 JUIN 2010

Les questions essentielles du patient IC

- Rôle du patient dans sa prise en charge
- Meilleure compréhension de la relation de cause à effet entre symptômes/signes de l'IC et le comportement
- Enseignement à l'auto-monitoring[1]
  -> identification des "Red Flags"
  -> identification des comportements à risque

1. Am Journal of Cardiology 1999 ;83 :1A-38A

Liste des questions essentielles

Suite aux cercles de qualité DELTA:

1. Est-ce que je prends du poids ? (*1-3 kg en 2 jours)*
2. Que faire si je prends du poids ?
3. Aggravation de la dyspnée ?
4. Est-ce que je prends mes médicaments prescrits par mon médecin ?
5. Est-ce que je suis les conseils diététiques (sel) recommandés par mon médecin ?
6. Est-ce que je fais de l'exercice physique comme convenu ?

Vignette (1)

Patient de 58 ans, connu pour :

- une HTA de longue date;
- une cardiomyopathie dilatée non-ischémique diagnostiquée lors d'une oedème pulmonaire il y a 6 mois.

Il consulte pour une aggravation de sa dyspnée chronique de stade II, devenue depuis une semaine de stade III-IV.

Vignette (2)

Examen clinique:

TA : 120 / 70 mmHg, pouls 100 / min, régulier
Râles de stase pulmonaire sur 1 main;
Ø turgescence jugulaire, Ø reflux HJ ou OMI.

ECG:

BBG; QRS 128 ms

Vignette (3)

TTT:

digoxine 0,125 mg / jour
ramipril 5 mg/jour
torasémide 5 mg/jour
spironolactone 25 mg/jour

(métoprolol tartrate 2 x 50 mg / j stoppé il y a 4 mois pour cause de dyspnée aggravée)

Vignette (4)

Evolution clinique:

Rapidement favorable sous diurétiques i-v.
Dyspnée au moindre effort persiste.

Echocardio:

VG dilaté; FE 30%; IM modérée
(idem qu'il y a 6 mois)

Vignette (5)

Que penser du traitement ?

Que modifier ?

Que rajouter ?