

Pharmacist Intervention to Prevent
Hospitalization and Death
in Patients with Heart Failure:
A Prospective Cluster Randomized Controlled Trial

Discussion

Mariell Jessup MD, FAHA

Professor of Medicine

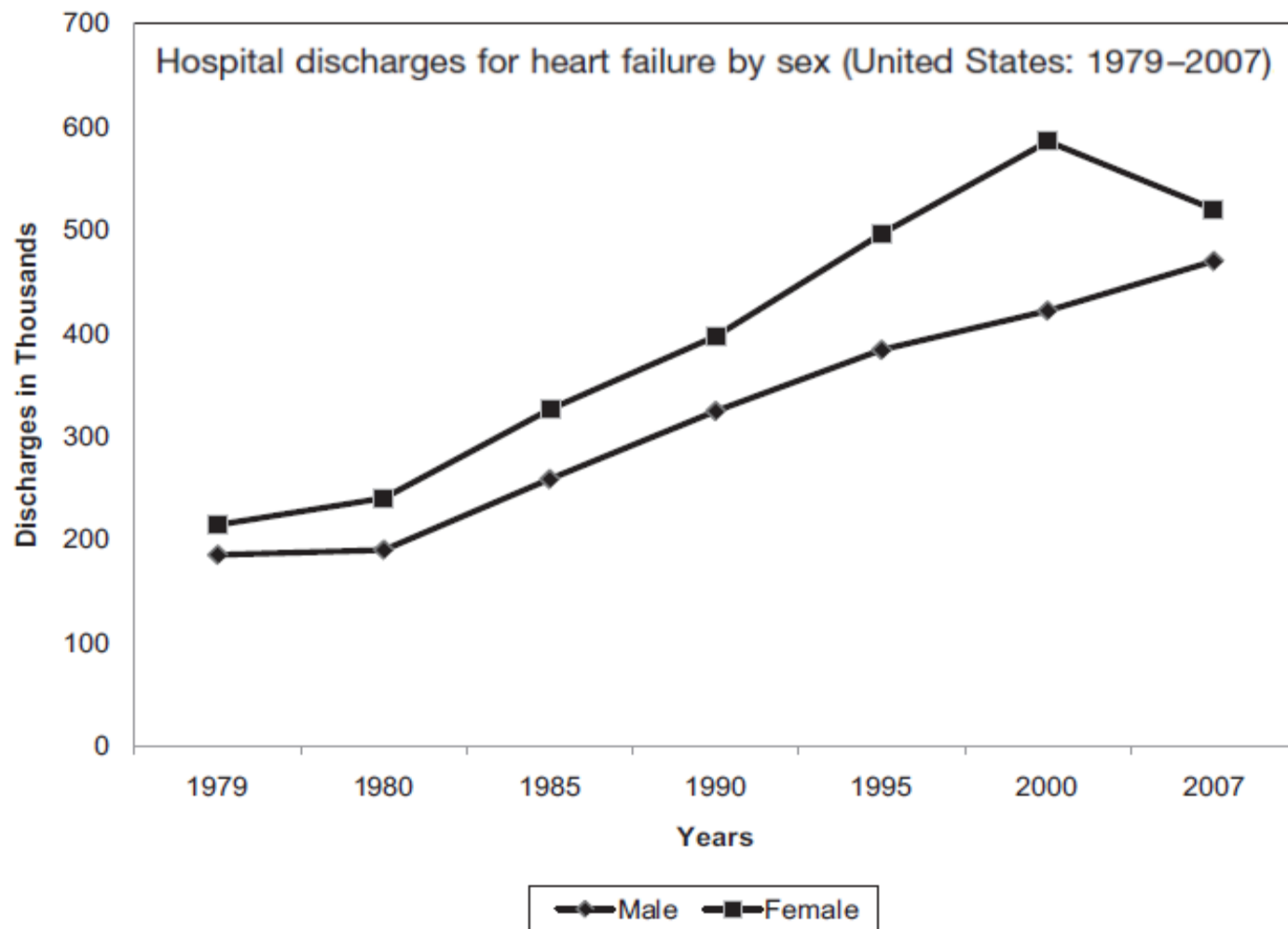
University of Pennsylvania

Philadelphia, Pennsylvania

I have no relevant relationships with industry for this presentation.

AHA Statistical Update

Heart Disease and Stroke Statistics—2011 Update A Report From the American Heart Association



Who will take care of the heart failure patients?

- 2007 HF hospital discharges: 990,000
- 2007 HF office visits: 3,434,000
 - 83% hospitalized once
 - 43% hospitalized at least 4 times

- 2010 internists, and generalists: 50,070
- 2010 physicians and surgeons: 293,740
- 2010 cardiologists: 20,000

	1998–2002 (N = 8276)		2003–07 (N = 9548)		OR (95% CI)
	n	%	n	%	
Mean age (SD)	74.6 (10.9)		75.7 (11.3)		P < 0.001 ^a
Gender, male	4077	49.3	4633	48.5	0.97 (0.92–1.03)
Prescribed medication					
RAAS inhibitors	4469	54.0	5369	56.2	1.09 (1.03–1.16)
Beta-blockers	3011	36.4	5263	55.1	2.15 (2.02–2.28)
Diuretics	6113	73.9	6986	73.2	0.97 (0.90–1.03)
Spironolactone	2651	32.0	3616	37.9	1.29 (1.22–1.38)
Digoxin	2553	30.8	2126	22.3	0.64 (0.60–0.69)

De Peuter OR et al. *European J Heart Fail* 2011; 13: 489

Quality Measure	Baseline (95% CI) (n=167), %	At 24 mo (95% CI) (n=155), %	Relative Improvement, Baseline to 24 mo (95% CI), %	P*
ACEI/ARB	86% 78.3 (76.5–80.2)	85.1 (83.4–86.8)	+19.4 (–1.1–39.8)	0.063
β-blocker	62% 86.0 (84.3–87.7)	92.2 (90.6–93.8)	+7.6 (5.1–10.2)	<0.001
Aldosterone antagonist	34.5 (31.5–37.4)	60.3 (56.1–64.4)	+86.5 (67.1–105.9)	<0.001

IMPROVE HF

Fonarow GC et al. *Circulation* 2010; 122: 585

Guideline-recommended therapy	Patient population with HF eligible for treatment, n*	Current HF population eligible and treated, n (%)	Current HF population eligible and untreated, n (%)
ACEI/ARB	2459644	1957877 (79.6)	501767 (20.4)
β-Blocker	2512560	2150751 (85.6)	361809 (14.4)
Aldosterone antagonist	603014	217688 (36.1)	385326 (63.9)
Hydralazine/nitrate	150754	11005 (7.3)	139749 (92.7)
CRT	326151	126547 (38.8)	199604 (61.2)
ICD	1725732	873220 (50.6)	852512 (49.4)

Guideline-recommended therapy	Potential lives saved per year	Potential lives saved per year (sensitivity range*)	% of total potential lives saved per year
ACEI/ARB	6516	(3336-11260)	9.6
β-Blocker	12922	(6616-22329)	19.0 ←
Aldosterone antagonist	21407	(10960-36991)	31.5 ←
Hydralazine/nitrate	6655	(3407-11500)	9.8
CRT	8317	(4258-14372)	12.2
ICD	12179	(6236-21045)	17.9
Total	67996	(34813-117497)	100.0

Pharmacist Intervention to Prevent Hospitalization and Death in Patients with Heart Failure: A Prospective Cluster Randomized Controlled Trial

Strengths

- ✓ outcome data collection is very complete from the NHS in Scotland; 4.7 year follow-up
- ✓ recognition of multi-disciplinary HF team
- ✓ evaluated an intervention found to be effective in pooled analyses
- ✓ addresses critical issues:
 - HF hospitalization rate
 - components of care in HF

Weaknesses

- ✓ high risk HF pts, just out of hospital, were excluded
- ✓ enrolled population was already well treated
- ✓ 38% of enrolled population had “mild” LV dysfunction
- ✓ The intervention was a single, 30-minute visit with a pharmacist.

Pharmacist Intervention to Prevent
Hospitalization and Death in Patients with Heart Failure:
A Prospective Cluster Randomized Controlled Trial

to date, with respect to HF management strategies:

30 minutes of a pharmacist (*the current study*)

3-36 hours of novel diuretics or vasodilators

(*neseritide, rolofylline*)

3 days of loop diuretic dosing schemes (*DOSE*)

resulted in no change in hospitalization rate

Perhaps it is unrealistic to expect these brief interventions
will result in long term success in a chronic disease such
as HF.

Perhaps hospitalization rate is not a reasonable outcome.