Hospital Is ‘Teachable Moment’ for Heart Failure

Heart failure patients started on β-blocker, ACE inhibitor in hospital are likely to stay on them.

BY BRUCE JANCIN
Denver Bureau

ORLANDO, FLA. — Starting heart fail-
ure patients on a β-blocker and ACE in-
hibitor before hospital discharge sharply
increases the likelihood that they will be
on these key medications at follow-up 60-
90 days later, Gregg C. Fonarow, M.D., re-
ported at the annual meeting of the Amer-
ican College of Cardiology.

“What this really tells us is that hospi-
talization can serve as a teachable moment
for patients and clinicians regarding heart
failure medications, that patients can be ef-
ectively initiated on these evidence-based
therapies, and if they’re started in the hospital they’re much more likely to be on
treatment during long-term follow-up,”
he said.

“We need to provide for all patients hospi-
talized with heart failure a systematic
approach to ensure that the evidence-
based therapies are started prior to dis-
charge,” said Dr. Fonarow, a professor of
cardiovascular medicine at the University
of California, Los Angeles, and director of
the Ahmanson-UCLA Cardiomyopathy Center.

He presented data on 4,434 patients
with systolic heart failure (HF) treated at
86 hospitals participating in the Organized
Program to Initiate Lifesaving Treatment in
Hospitalized Patients with Heart Failure
(OPTIMIZE–HF) registry, a national qual-
ity-improvement project.

None of the patients in this subset of
the larger OPTIMIZE–HF database had con-
traindications to β-blockers or ACE
inhibitors/angiotensin receptor blockers
(ARBs). Of the 86% discharged on a β-
blocker, 95% remained on β-blocker ther-
apy at follow-up 60-90 days post discharge.
In contrast, only 32% of patients who
were not yet on a β-blocker at discharge
were taking one at follow-up.

“That means two-thirds of these eligi-
ble patients [discharged without β block-
er] remained untreated with what is our
single most important life-saving therapy
in heart failure: β-blocker treatment,” said
Dr. Fonarow, director of OPTIMIZE–HF.

The same was true for ACE in-
hibitors/ARBs: 84% of eligible patients
who were taking these drugs at discharge,
and 74% of this group remained on the
medication at 60-90 days. Only 19% of pa-
tients not discharged on one of these
drugs were taking one at follow-up.

“Many clinicians have kind of had the
view, ‘Well, we don’t need to worry about
starting treatment in the hospital, we’ll get
around to it on an outpatient basis.’ There
hasn’t necessarily been a consensus that
each of these therapies needs to be start-
ed prior to hospital discharge,” Dr.
Fonarow observed.

But that’s chang-
ing fast, in large
part because of the
evidence gathered
in OPTIMIZE–HF.
At the ACC meet-
ing, the American Heart Association
launched a new na-
tionwide, hospital-
based, quality-improvement project called
Get With The Guidelines–Heart Failure
(GWTG–HF).

The program, aimed at accelerating ad-
herence to ACC/AHA treatment guide-
lines, utilizes techniques similar to those
generated in the OPTIMIZE–HF registry,
including decision-support tools, cus-
tomized patient education materials, re-
ternal performance benchmarking, and col-
laborative workshops to help hospitals
show local evidence to patients. Dr.
Fonarow is chair-
man of the GWTG Science Subcommittee.

“We hope that hospitals across the coun-
try will sign up and participate. Already
in place for more than 2 years has been a pro-
cram called Get With The Guidelines-
Coronary Artery Disease that has shown
remarkable improvements in care and is
currently in more than 300 U.S. hospitals,”
he said.

With 5 million Americans currently di-
agnosed with HF, and the ranks expected
to swell further as baby boomers age,
this type of sys-
tem approach is
badly needed, ac-

cording to John S.
Rumsfeld, M.D.,
who chaired a ses-

sion on quality-im-

provement

programs at the ACC

meeting.

“The U.S. over the next 20-30 years is go-
ing to be overwhelmed by the need for
heart failure care. If we don’t do this now,
just think of the potential number of peo-
ple who won’t get these treatments. We
need to get this message out so that we
can start addressing this issue with break-
ting clinical trials telling us about better care, but if we don’t apply them, we won’t actually be
improving our population outcomes,” noted
Dr. Rumsfeld of the University of Col-
orado, Denver.

GWTG–HF and OPTIMIZE–HF are both funded by GlaxoSmithKline Inc. Dr.
Fonarow is a consultant to and member of the speakers’ bureau for the pharmaceu-
tical company.

Hypoalbuminemia Predicts Mortality in Heart Failure

BY MITCHEL L. ZOLER
Philadelphia Bureau

NEW ORLEANS — Patients with heart
failure who also have hypoalbuminemia
have a two- to threefold increased risk of
death, compared with patients with nor-
mal serum albumin levels, according to re-

tsults from a study in about 1,000 patients.

It’s possible that this elevated mortality
risk may be controlled by using nutritional
supplements or treatments aimed at cut-
ting the inflammation associated with hy-
poalbuminemia, Tamara Horwich, M.D.,
said at the annual scientific sessions of
the American Heart Association.

It’s unclear what links hypoalbumine-

mia with worse survival during heart fail-
ure, but several candidate mechanisms ex-
ist. These include hemodilution, cardiac
cachexia, biventricular heart failure, re-
duced colloid osmotic pressure causing
pulmonary edema, and reduced tolera-
bility and use of optimal medical thera-
py, said Dr. Horwich, a cardiologist at the
University of North Carolina, Chapel Hill.

Results from prior studies had linked
hypoalbuminemia with a higher risk of
death in a variety of disease states, in-

ccluding cancer, end-stage renal disease,
infec-
tions, and cardiac surgery. But until
now, few studies had examined whether
a similar association exists in patients
with heart failure.

To assess this potential link, Dr. Hor-
wich and her associates reviewed case
records for 1,162 heart failure patients
who were treated at UCLA Medical Center from December 1983 through
June 2004. Some patients were excluded
because their left ventricular ejection frac-
tion was greater than 40% or they had in-
adequate follow-up. The study focused on
the 1,039 eligible patients who remained.

Their average age was 72 years, and their
mean ejection fraction was 30%.

Patients were diagnosed with hypoal-
buminemia if their serum albumin was
less than 3.4 g/dL. About 25% of the pa-
tients in this study had hypoalbuminemia,
a prevalence consistent with reports from
prior studies of heart failure patients.

Low albumin levels were most prevalent in
lean patients, with a prevalence of 29%, but hy-
poalbuminemia was also common in over-
weight and obese patients, with preva-
lences of 15% and 20%, respectively.

The 1-year survival rate among pa-
tients who were hypoalbuminemic at
baseline was 68%, compared with more
than 80% for those with normal baseline
serum albumin levels.

In a multivariate analysis that took into
account a number of potential con-
founders, including age, gender, and body
mass index, patients who had low serum
levels were 2.8-fold more likely to die,
compared with patients with a serum al-
bumin level within the normal range, Dr.
Horwich said.

Using Standard Digoxin Nomogram
Can Lead to Deadly Overdoses

MUNICH — Patients with heart failure
who are treated with digoxin adminis-
tered according to the standard nomo-
gram risk getting an overdose that might
come underdiagnosed.

“We recommend treating patients who
digoxin with half the dose from the
nomogram,” said Kirkwood F. Adams Jr.,
M.D., at the annual congress of the Eu-
ropean Society of Cardiology.

Half the standard dosage will give most
patients a serum level of 0.5-0.9 ng/mL.
A post hoc analysis of data collected in
the landmark Digitalis Investigation Group
(DIG) trial, run during the early 1990s, showed that patients who have a serum level in this range had a 15%-20% reduced risk of death during follow-up
compared with patients who did not re-

cieve digoxin, reported Dr. Adams, a car-
diologist at the University of North Car-
olina in Chapel Hill.

In contrast, patients who had serum
levels of 1.2-1.5 ng/mL had a death rate
that was 33% higher than that of matched
placebo patients. This risk is believed to
be due to the neurohormonal effects of a
relatively high serum level of the drug. At
dlower serum levels, digoxin probably has
a small inotropic effect that is safe and
beneficial, Dr. Adams told this newspaper.

The DIG trial, which began enrolling
patients in 1991, was completed in De-
member, 1995; the primary results were re-
ported in 1997. The 6,800 patients with
stable heart failure were randomized to
treatment with digoxin or placebo on top
of what was standard heart failure treat-
ment at that time. The primary finding of
the study was that digoxin treatment had
no effect on mortality compared with
placebo, but it did reduce the hospital-

The post hoc analysis by Dr. Adams
and his associates focused on the 1,843 pa-
tients in the digoxin arm of the study who
had their serum concentration of the
drug checked after they had been on treat-
ment for 4 weeks, an indicator of their
steady-state level of the drug.

The relationship between serum levels
digoxin after 4 weeks of treatment and
mortality was similar in men and women.

The standard nomogram for calculat-
ing a digoxin dosage dates to 1974 and
takes into account a patient’s body mass
index and renal function. But there can be
substantial variability in the actual serum
level that individual patients maintain
from a particular dosage. Using the
nomogram, most patients receive a dosage
of 0.25 mg/day. A better dosage based on
these findings would be 0.625 mg/day, Dr.
Adams said.

All patients with heart failure who re-
cieve digoxin should have their serum lev-
el checked after 4 weeks and then have
their dosage modified if the level is out-
side of the 0.5-0.9 ng/mL range, he added.

—Mitchel L. Zoler