

Nesiritide Didn't Protect Kidneys in Stable HF

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BOCA RATON, FLA. — The brain natriuretic peptide, nesiritide, which is used to treat acute heart failure symptoms, did not facilitate diuresis or protect renal function in a small study of stable hospitalized patients.

Many clinicians believe that nesiritide (Natreacor, Scios Inc.) facilitates furosemide diuresis and prevents renal dysfunction, Margaret M. Redfield, M.D., said in an interview. However, a recent metaanalysis indicated that the agent might increase the risk of renal dysfunction (Circulation 2005;111:1487-91).

To sort it out, Dr. Redfield and her associates studied 65 patients who were hospitalized for decompensated heart failure and who were treated with a standard dose of nesiritide for relief of their heart failure symptoms. They were randomized to nesiritide as a 2-mcg/kg bolus at admission and a 0.01-mcg/kg per minute infusion at 48 hours (34 patients) or to standard therapy (31 patients).

The participants also received 40-mg b.i.d. intravenous furosemide if they had mild renal dysfunction at baseline, defined as a creatinine clearance of 40-60 mL/min. They received 80-mg b.i.d. intravenous furosemide if they had moderate renal dysfunction, or a creatinine clearance of 20-39 mL/min.

"We looked at nesiritide in the broader heart failure population where you don't need an acute effect," said Dr. Red-

field, professor of medicine, Mayo Clinic College of Medicine, Rochester, Minn.

About one-quarter of heart failure patients experience renal dysfunction during hospitalization, and the researchers sought to determine if nesiritide is protective, Dr. Redfield said during a poster session at the annual meeting of the Heart Failure Society of America.

A secondary objective was to determine if the agent could obviate the need for furosemide diuresis in some patients.

Mean baseline creatinine was 1.8 mg/dL in the nesiritide group and 1.7 mg/dL in the standard therapy group; by 48 hours, the mean changes were increases of 0.12 mg/dL and 0.07 mg/dL, respectively. Mean baseline brain natriuretic peptide level was 640 pg/mL with nesiritide and 538 pg/mL with standard therapy; by 48 hours, the mean changes were a 474 pg/mL increase with nesiritide and a 59 pg/mL decrease in the control group. Total furosemide use was 272 mg in the nesiritide group and 255 mg in the standard treatment group at 48 hours.

"Nesiritide causes no harm, but has no significant benefit," Dr. Redfield said. "Nesiritide didn't enhance the response to furosemide. We hypothesized [it] should have a beneficial effect on renal function—we didn't see that either." Systolic blood pressure was lower in the nesiritide group at 24 hours, but not significantly different between groups by 48 hours.

"The standard dose was designed for hemodynamic effects. The next step is to look at a lower dose, which might provide renal protection," he said. ■

Brain Natriuretic Peptide Levels Predict Heart Failure Readmission

BOCA RATON, FLA. — A quick test of brain natriuretic peptide can predict which outpatients with heart failure are most likely to be admitted to the hospital within 30 days of the test, according to a poster presentation at the annual meeting of the Heart Failure Society of America.

In a previous study, the collaborative care outpatient program at Community Hospital in Munster (Ind.) significantly reduced the need for inpatient care. However, some patients were still hospitalized within 30 days of enrollment for the program. So Miguel Gambetta, M.D., and his colleagues conducted another study to identify any baseline variables that might predict admission within the 30-day time frame.

A cardiologist, an advanced practice nurse, and a team of registered nurses staff the collaborative care program, which features an infusion clinic, heart failure education, and telemedicine follow-up. Primary goals include management of signs and symptoms of heart failure decomposition and prevention of hospital admission.

The study included 1,404 heart failure patients in the program, of whom 856 were men. The mean age was 77 years. Researchers assessed heart rate, blood pressure, respiratory rate, and brain natriuretic peptide levels taken at enrollment for patients who were admitted within 30 days.

"Admissions are an indication of how

the patient is doing, so we can predict which patients will do well with a short-term prognosis," Dr. Gambetta, a private practice cardiologist in Munster, said in an interview.

Brain natriuretic peptide (BNP) is a hormone excreted by the heart when under stress, explained coauthor Patrick Dunn,

MS, MBA, in an interview. By using point-of-care testing, a serum BNP level can be measured in about 30 minutes, so it could have value in an emergency department setting.

"Heart failure is a huge problem—our hospital has about 800 admissions per year. We want to more accurately predict who is at high risk," said Mr. Dunn, who is now director of cardiovascular development at Las Colinas Medical Center, Irving, Tex. He was director

of data management at Community Hospital at the time of the study.

A total of 75 participants (5%) in the study were admitted to the hospital within 30 days of enrollment. BNP was the only significant predictor. If a heart failure outpatient has a BNP level of 651 pg/mL or greater, they are 2.5 times more likely to be admitted [to the hospital] within 30 days, Mr. Dunn said.

"We were not surprised by our results—we assumed this was very useful," Dr. Gambetta said. Mr. Dunn added, "BNP is a very good predictor of admission, even with outpatients." ■

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Low or High Hemoglobin Linked To More Heart Failure Deaths

BOCA RATON, FLA. — Heart failure patients who had either low or very high hemoglobin levels had increased in-hospital mortality and decreased 1-year survival in a study of nearly 3,000 patients.

It is well accepted that anemia adversely affects outcome in heart failure patients, but how high hemoglobin levels might influence the disease course is not well established, Kismet Rasmusson said in an interview at the annual meeting of the Heart Failure Society of America.

"Anemia has become more recognized and more prevalent in heart failure," said Ms. Rasmusson, a family nurse-practitioner in the Heart Failure Prevention and Treatment Program, LDS Hospital, Salt Lake City, during a poster presentation. "It's important to know how to screen and treat patients not just for heart failure, but for their comorbidities."

Ms. Rasmusson and her associates used ICD-9 codes to identify 2,816 patients with a primary diagnosis of heart failure from a 20-hospital integrated health care system database. All the patients in the study had a left ventricular ejection frac-

tion of 40% or less; 48% were men.

"This was not a clinical trial setting. These are real patients out in the community," Ms. Rasmusson said.

The researchers compared mortality rates in patients grouped by their first hemoglobin measure: low (below 12.5 g/dL), normal (12.5-13.5 g/dL), high (13.6-15.3 g/dL), or extremely high (greater than 15.3 g/dL).

"The extremes—very low and very high—had an increased risk of mortality," Ms. Rasmusson said.

After adjustment for age, gender, and severity of heart failure, the extremely high hemoglobin group had the greatest risk of in-hospital mortality (odds ratio 3.15). The low-hemoglobin group had an increased risk as well (OR 1.96). Both these findings were statistically significant, compared with the normal hemoglobin group.

One-year survival was significantly less for patients in the low-hemoglobin group (OR 1.46), compared with those with normal hemoglobin. Patients with a hemoglobin level below 12.5 g/dL made up 44% of the cohort studied. ■

Resynchronization Beneficial In HF Patients With Atrial Fib

BOCA RATON, FLA. — Heart failure patients with atrial fibrillation who receive cardiac resynchronization devices experience benefits similar to those in patients without the condition, according to data presented at the annual meeting of the Heart Failure Society of America.

Major cardiac resynchronization therapy trials typically exclude patients with atrial fibrillation. However, the diagnosis

is common in patients with heart failure. "It's an important question to ask—a lot of our patients have atrial fibrillation. We don't know if they benefit from resynchronization," Jooyoung Julia Shin, M.D., said in an interview during a poster session.

Dr. Shin and her associates compared New York Heart Association (NYHA) classifications before and 6 months after device placement for patients with and without atrial fibrillation.

They assessed data for 1,017 people with heart failure who were enrolled in the InSync Registry and InSync ICD (Implantable Cardioverter Defibrillator) Registry (Medtronic Inc.).

Of these registrants, 389 (38%) with an NYHA classification at 6 months had a history of atrial fibrillation before implantation. Such patients were not included in the clinical trials, said Dr. Shin, a researcher in

the division of cardiology at Emory University, Atlanta. The study's principal investigator was Andrew L. Smith, M.D.

The overall mean NYHA classification was 3.0 before device implantation and 2.3 at 6 months. At 6 months, the mean improvement in NYHA classification was the same in both groups: 59%. This indicates that patients with a history of atrial fibrillation can benefit from cardiac resynchronization therapy, Dr. Shin said. ■

Cardiac resynchronization therapy trials typically exclude patients with atrial fibrillation, but it's common in heart failure patients.