

Changes in Quality of Life and Physiologic Measures in Heart Failure Patients Related to Gender and Race

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Abstract

Heart failure (HF) is a major health problem, with approximately 6 million people currently living with HF in the United States. It is estimated that HF will cost \$39.2 billion annually (2012) inclusive of health care services, medications, and lost productivity. Two nonmodifiable risk factors for developing HF are race and gender. HF is a complex cardiovascular illness associated with diminished quality of life, decreased exercise tolerance, and increasing disease severity. This study examined the relationship between quality of life and selected physiologic variables and race and gender on 54 patients over a six month time period.

Problem

Despite the enormous public health implications of HF, there has been little focus on race and gender during the past 20 years in improving HF outcomes.

North Carolina has one of the highest incidence rates of cardiovascular disease (CVD) in the nation. Eastern NC consistently leads the state in CVD mortality, causing nearly 1 in 3 deaths regionally. This unusually high local prevalence of CVD led to the establishment of the Health Steps Heart Failure Clinic. Thus the purpose of this study was to study if enrollment in a multidisciplinary Heart Failure Clinic improved psychological and physiologic outcomes in patients over a 6 month period.

Research Questions

Study aims were:

- 1) to assess the QOL of pts. at HF Clinic admission (baseline) and 6 months later, along with Bone Natrietic Peptide (BNP) values, 6-minute walk testing (6MW) and ejection fraction (EF),
- 2) to determine if differences exist based on gender, race or New York Heart Association (NYHA) class.

Relevant Literature

Race and gender are well known risk factors for HF. Racial/ethnic demographic disparities exist within the US population characterized by an emerging number of special populations at risk for cardiovascular disease. Among these are African Americans with HF whose death rates 2.5 times greater in those less than 65 years of age when compared to Whites in that age group. Hospitalization rates are substantially higher than those among Whites.

Approximately 2.7 million women have HF, which accounts for 35 percent of the total female cardiovascular mortality. However, HF affects women at an older age and often with less compromised heart function compared to men.

Procedures

The study was conducted at the Health Steps HF Clinic. This clinic has a multidisciplinary staff consisting of cardiologists, advanced practice and registered nurses, and pharmacy, nutrition and psychology services.

Informed consent was obtained on 60 pts. enrolled in the clinic; 54 pts. completed the 6 mo. follow-up.

The Minnesota Living with HF QOL questionnaire was used. A lower score reflects a higher QOL. Other values assessed included demographics, NYHA class, BNP values, EF, and 6 Minute walk times.

Data Analysis

Data were analyzed using measures of central tendency and t tests. A Bonferroni correction was used

Limitations

A small sample size and a descriptive study design limit the generalizability of results and the ability to determine exactly why positive changes occurred

Conclusions

The majority of pts. admitted to the HF Clinic had improvement in QOL over time, as well as BNP, EF and 6MW testing.

BNP improvement was significantly correlated with improvement in QOL.

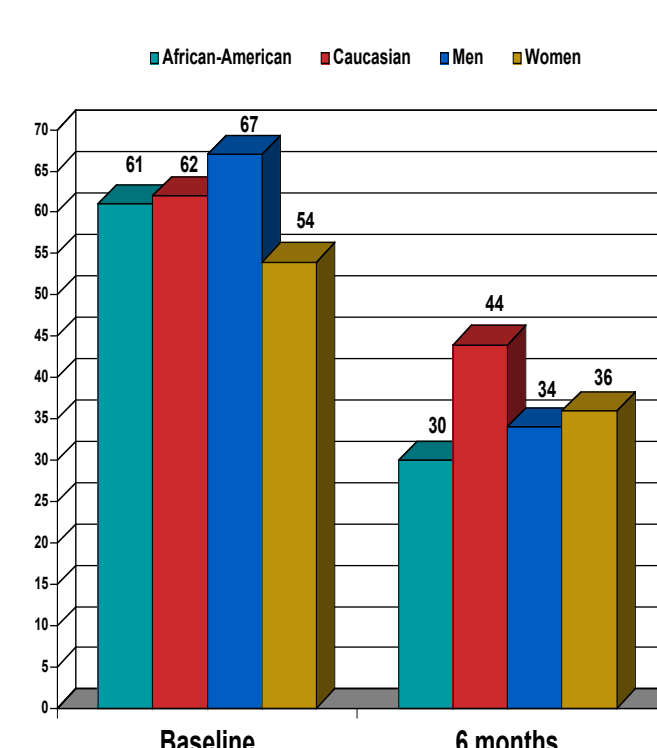
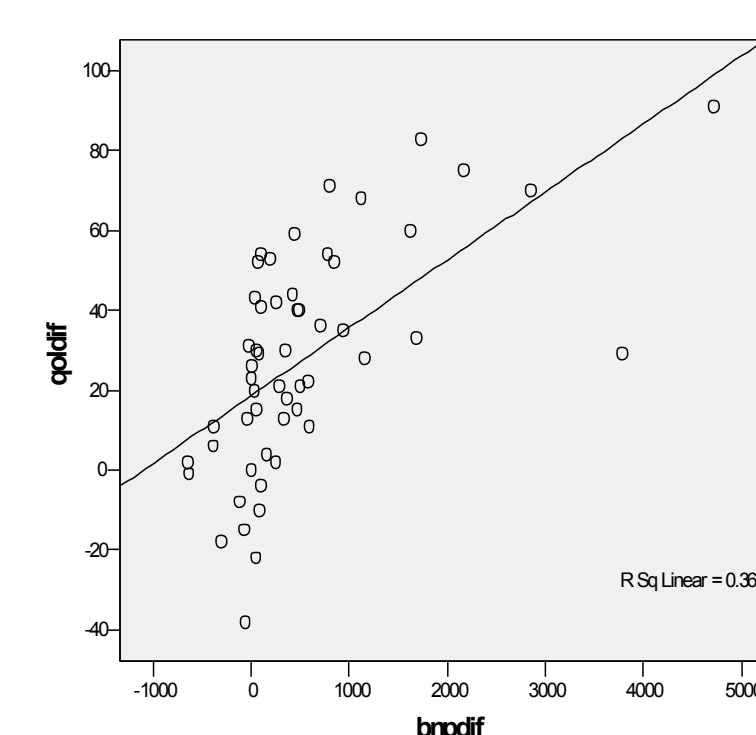
Pts. with lower NYHA classification displayed a greater degree of improved QOL.

Interesting differences in QOL, BNP and 6MW scores were seen based on gender and race.

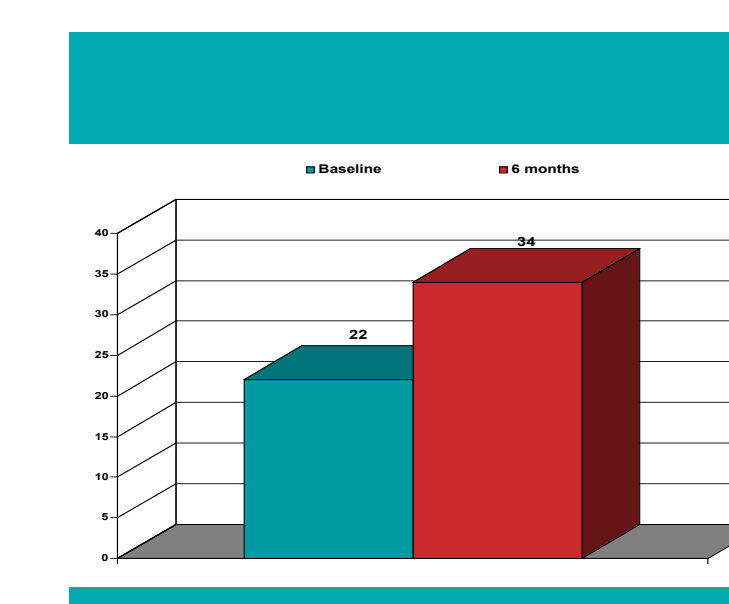
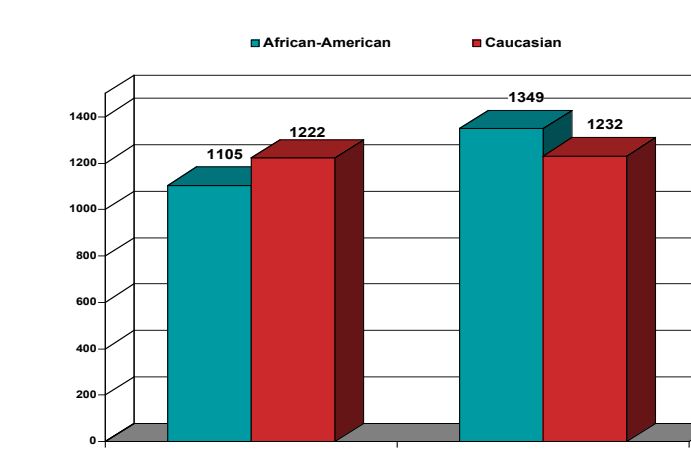
Variables have been identified which should be assessed in future studies.

Findings

- 54 of 60 subjects completed the 6 mo. follow-up. Mean age 57 years (24-86); 63% male; 71% African-American, and 28% Caucasian.
- Baseline to 6 mo. improvement in QOL occurred in 83% of pts., with a mean gain of 28 points ($p < .001$).
- Greater improvement in QOL was seen in African-Americans (31 points, $p < .001$) compared to Caucasians (18 points, $p = .02$). Baseline QOL was significantly better in females (54) than males (67), however males showed a greater 6 mo. improvement.
- BNP values decreased in 78% of pts.
- In African-Americans, mean baseline BNP was almost double that of Caucasians, yet this group also exhibited almost twice as much improvement in BNP at 6 mos. However BNP values at 6 mos. were still 64% higher in African-Americans.
- Six mo. BNP improvement was significantly correlated with 6 mo. QOL improvement ($r = .61$, $p < .001$).
- There was significantly greater degree of improvement in QOL in pts with lower NYHA classification (27 points) compared to the higher classified (sicker) pts. (29 points).
- Of the 40 pts. who had baseline and 6 mo. EF data, 77% showed improvement.
- Of the 36 pts who were able to complete the 6Mwt, 61% showed improvement with a greter improvement in African Americans ($p < 0.02$).



Avg. 6MW Test (mt.) (N=36)



Social Change Implications

Though heart Failure is prevalent conditions in African Americans recommendations are based on trial data derived from predominately younger white male study populations. Despite high rates of HF in African Americans, few studies have examined the impact of a disease management clinic on this at-risk group. In this study we investigated change over time in three important, patient-centered measures: health related quality of life, disease severity and exercise tolerance in two underrepresented groups in cardiovascular research. Also, this largely African American sample of HF patients lived in a rural, poor area of the United States. For social change to occur there is a need for funding of more studies such as this one. Under represented populations that were the focus of this research deserve the best treatment options there are on a global basis, not just in specialty clinics like the one in this study.