

### **Functional Assessment Tests and Mortality in Heart Failure: Which One is The Best Predictor?**

*Zafir, B<sup>1</sup>; Paz, H<sup>2</sup>; Wolff, R<sup>3</sup>; Salman, N<sup>3</sup>; Merhavi, D<sup>3</sup>; Antebi, A<sup>2</sup>; Schliamser, J<sup>1</sup>; Yaniv, N<sup>3</sup>; Ammar, R<sup>2</sup>; Lewis, B<sup>1</sup>; Amir, O<sup>3</sup>*

*<sup>1</sup>Lady Davis Carmel Medical Center, Haifa, Israel; <sup>2</sup>Lin Medical Center, Haifa, Israel; <sup>3</sup>Lady Davis Carmel Medical Center and Lin Medical Center, Haifa, Israel*

**Background:** Functional assessment is a key in the evaluation of heart failure (HF) patients, caring important prognostic implications.

**Objectives:** In the current study we compared between several methods of patients' functional classification (FC), in order to define which of these has the best risk-stratification ability for mortality.

**Methods:** We evaluated 500 consecutive patients examined in their first visit at the HF clinic, grading them via several FC: (1) NYHA Class (I-IV); (2) Six-Minute Walk Test (meters); (3) number of hospital admissions/E.R visits in the preceding year. We analyzed the relative importance of each of the three parameters as a predictor for mortality in a mean follow-up period of 2 years.

**Results:** Mean NYHA grade was  $2.8 \pm 0.9$ , 34% of patients had NYHA III, and 24% NYHA IV. NYHA grade was significantly worse in patients who died during the follow-up period ( $p < 0.001$ ). Six-minute walk distance was significantly reduced in patients who died during follow-up ( $142 \pm 114$  vs.  $223 \pm 149$  meters;  $p < 0.001$ ). Number of prior hospital admissions/E.R visits was also significantly higher in patients who died during follow up ( $2.8 \pm 2.7$  vs.  $1.7 \pm 2$ ;  $p < 0.001$ ). However, in a multivariate analysis, the six-minute walk distance of less than 300 meters was the most significant FC test in predicting mortality ( $p < 0.0001$ , H.R 3.65, 95% C.I 1.89-7.08), Figure-1:

**Conclusions:** Several methods of FC are useful in predicting mortality in HF patients at their first visit in the HF clinic. However, the Six-minute walk test has the strongest association with mortality, even when comparing with the traditional NYHA class or a history of recent recurrent hospital admissions. Accordingly, we suggest, that clinics specialized in HF should poses the ability to perform the Six-minute walk test at their facility and execute it as part of the routine initial evaluation in their patients.