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HEART FAILURE

Tai chi terrific for quality of life in HF, maybe a toehold on higher-intensity exercise

SEPTEMBER 15, 2010 | Steve Stiles

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HFSA San Diego, CA - Patients with mostly mild to moderate heart failure in a randomized trial showed significant quality-of-life gains following three months of twice-weekly classes in tai chi, a martial art that millions of Chinese routinely practice for regular low-intensity exercise, spiritual well-being, and sense of community [1]. They also gained confidence and initiative regarding other, higher-intensity exercises.

Patients in the tai chi classes failed to show significant functional improvements or reduced natriuretic peptides compared with those taking the same number and frequency of conventional heart-failure education classes, although there were promising trends, observed **Dr Gloria Yeh** (Beth Israel Deaconess Medical Center, Boston, MA) when presenting the study here at the **Heart Failure Society of America (HFSA) 2010 Scientific Meeting**.



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"There's a bit of a disconnect between our finding improvements in quality of life, mood, perception of being able to do more, and feeling better, vs [no significant improvement in] exercise performance measured by six-minute walk or [peak VO₂] on a bicycle exercise test," Yeh observed for [heartwire](#).

"But having said that, we did see *some* change in six-minute-walk distance. It didn't reach significance between the two groups, but there was actually a 35-m improvement in the tai chi group over the 12 weeks of the study. So something *did* happen. And our other measures said they at least *perceived* that they were doing more."

Speculating, Yeh asked, "Is it more important how people feel and what they perceive they can do on a day-to-day basis or what we can actually measure with some tests in the hospital?" She proposed that some quality-of-life measures "may be at least as important" as some more objective end points in heart failure.

Or as she put it in the formal conclusion of her study, "A narrow focus on measured exercise performance may underestimate the impact of integrated interventions such as tai chi."

After Yeh's presentation of the trial, called **New Exercise Tai Chi and Heart Health Education (NEXT-HEART)**, discussant **Dr Ileana L Piña** (Case Western Reserve University, Cleveland, OH) agreed that the nonsignificant gains in six-minute-walk distance and peak VO₂ observed in the tai chi group might have crossed into significance had there been more than 100 patients in all. She (and Yeh) pointed out the difficulties in quantifying effects of low-level exercise. But Piña said that based on **other studies of exercise in heart failure** and the metabolic equivalents (METs) likely achieved by the tai chi group, it would be expected that six-minute-walk distances would go up. Their gains in quality of life, however, were "dramatic."

“**Is it more important how people feel and what they perceive they can do on a day-to-day basis, or what we can actually measure with some tests in the hospital?**”

The trial evenly randomized 100 patients with chronic NYHA class 1-3 heart failure and an LVEF ≤40% to take the 12-week series of tai chi classes or attend, on exactly the same schedule, classes based on the HFSA patient-education modules covering diet, exercise, medications, and other aspects of self-management; they (and the tai chi group) were also given the educational materials for use at home.

The tai chi group learned a modified Yang style of the discipline, including five basic movements, which were characteristically "slow and purposeful," with an emphasis on weight shifting, balance, "focused mental attention and self-awareness," stretching, warm-up activities, meditation, breathing

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and relaxation techniques, and guidance on mind-body awareness.

Members of the tai chi group attended three-quarters of the classes, on average, and education controls attended two-thirds of their classes. Tai chi practitioners also reported an average of 10 hours of home practice using a provided instructional video.

After 12 weeks, the tai chi group showed significant improvements in quality-of-life and mood-disturbance indexes and in measures of exercise self-efficacy.

NEXT-HEART: Change in functional and behavioral test results from baseline to week 12, tai chi vs education classes

Evaluation	Tai chi, n=50	Education, n=50	p
MLHFQ (points)	-19	+1	0.02
6-minute walk test (m)	+35	+2	0.89
Peak VO ₂ (mL/kg/min)	+2.1	-0.52	0.89
BNP (pg/mL)	-10	+13	0.90
POMS (points)	-6	-1	0.01
Exercise self-efficacy (points)	+0.3	-0.1	0.01

MLHFQ= Minnesota Living with Heart Failure Questionnaire (lower scores correspond to better quality of life); BNP=brain-type natriuretic peptide; POMS=Profile of Mood States questionnaire (lower scores correspond to less mood disturbance)

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The findings are somewhat at odds with a similar but smaller study published by Yeh and her colleagues in 2004 [2] and covered by **heartwire** at the **2003 HFSA sessions**, which randomized 30 heart-failure patients to 12 weeks of tai chi classes on top of standard care or to standard care alone; there was no education component for the controls.

The results were "quite remarkable," observed Pina in her presentation; the tai chi group showed significant improvements, compared with controls, in quality of life ($p < 0.0001$), six-minute-walk test ($p < 0.0001$), and even natriuretic peptide levels ($p = 0.038$). Peak VO₂ showed a trend for improvement ($p = 0.088$).

“For one reason or another, many of them aren't able or aren't willing to do more conventional forms of exercise. Maybe tai chi is less threatening and gets their confidence up.

Outcomes in the larger current study are so different, Pina said, probably because the smaller study entered sicker patients. Their mean LVEF was lower, their quality-of-life scores were worse, and only 67% of them were in NYHA class 1-2. That contrasts with the 81% proportion of NYHA class 1-2 patients in the current study.

"Our intention was to try to replicate that [smaller] study," Yeh said to **heartwire**. "We attempted to enroll patients in class 1, 2, and 3, but we ended up with a less-sick population. But in that

regard, I think it's actually quite remarkable that we were able to see such striking [quality-of life] changes in patients who were already sort of optimized."

She pointed to the tai chi group's gains in "exercise self-efficacy" as particularly important to patients with heart failure. "For one reason or another, many of them aren't able or aren't willing to do more conventional forms of exercise. Maybe [tai chi] is less threatening and gets their confidence up so they can do other types of exercise that are a bit more rigorous."

There was support for that trial result that didn't make it into her formal presentation, she said. Responses from both groups to the Community Healthy Activities Model Program for Seniors (CHAMPS) Physical Activity Questionnaire suggested that tai chi participants increased their participation in other physical activities outside of class.

Yeh said she has no relationships to disclose. Pina reports receiving speaker fees or honoraria from Merck and Novartis and being a consultant to or on the advisory board of Sanofi-Aventis and Solvay.

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
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Sources

1. Yeh G. Tai chi exercise improves quality of life in patients with chronic heart failure in a randomized controlled trial. Heart Failure Society of America 2010 Scientific Meeting; September 13, 2010; San Diego, CA. Late breaking clinical trials 1.
2. Yeh GY, Wood MJ, Lorell BH, et al. Effects of tai chi mind-body movement therapy on functional status and exercise capacity in patients with chronic heart failure: a randomized controlled trial. *Am J Med* 2004;117: 541-8. 

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