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**EFFECTS OF FISH OIL SUPPLEMENTATION ON CARDIAC FUNCTION IN CHRONIC HEART FAILURE: A META-ANALYSIS OF RANDOMISED CONTROLLED TRIALS**

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**Objectives** Effects of fish oil on cardiac function, ventricular remodelling and functional capacity in patients with chronic heart failure (CHF) remain controversial. We performed a meta-analysis to evaluate effects of additional fish oil supplementation on these parameters in these patients.

**Methods** Randomised controlled trials of fish oil supplementation on cardiac function in patients with CHF were identified by systematic search of Pubmed, Embase, the Cochrane Library, as well as the reference lists related to the studies and reviews of interest through November 2011. Either a fixed-effect model or, in the presence of heterogeneity, a random-effect model was used to estimate the combined effects.

**Results** A total of seven trials with 825 participants were included. Meta-analysis results showed left ventricular ejection fraction was significantly increased (WMD=2.25%, 95% CI 0.66 to 3.83,  $p=0.005$ ), and left ventricular end-systolic volume was significantly decreased (WMD=-7.85 ml, 95% CI -15.57 to -0.12,  $p=0.05$ ) in fish oil group compared with placebo, although the left ventricular end-diastolic volume (WMD=-4.44 ml, 95% CI -14.52 to 5.65,  $p=0.39$ ) was not significantly affected. Meta-regression and subgroup analysis indicated improvement of left ventricular systolic function was more remarkable in patients with non-ischaemic heart failure (WMD=4.07%, 95% CI 2.38 to 5.76,  $p<0.00001$ ). Besides, fish oil supplementation also improved the New York Heart Association functional classification (WMD=-0.58, 95% CI -0.75 to -0.41,  $p<0.00001$ ) and peak oxygen consumption (WMD=1.68 ml/kg min, 95% CI 0.52 to 2.84,  $p=0.005$ ) in patients with non-ischaemic heart failure. No significant publication bias was detected by Egger test ( $p=0.302$ ).

**Conclusions** Improvement of cardiac function, remodelling and functional capacity may be important mechanisms underlying the potential therapeutic role of fish oil for patients with chronic heart failure. These effects might be more remarkable in patients with non-ischaemic heart failure.