

VENTILATORY EFFICIENCY IMPROVES WITH D-RIBOSE IN CONGESTIVE HEART FAILURE PATIENTS

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Congestive heart failure (CHF) patients have suboptimal myocardial tissue energy levels. Energy compounds are necessary to maintain cellular integrity and function and in CHF, myocardial dysfunction is common. Besides impaired pump function, ventilatory efficiency (VE), a marker for CHF patient survival, is compromised even during sub-maximal exercise. Ribose (R), a natural occurring pentose sugar, has demonstrated an enhanced recovery of energy compounds along with a temporal improvement in diastolic compliance following myocardial ischemia. Whether R can improve VE was investigated. R was orally consumed (5 gm, tid) in 15 (2 females, 13 males) CHF patients (class III (9)-IV (6)) for 8 weeks as an adjunct to current therapy. All patients underwent repeat cardiopulmonary exercise (CPX) testing using a 4minute sub-maximal step protocol. Ventilatory efficiency, VO₂ efficiency and O₂ pulse were assessed up to the anaerobic threshold at baseline and following the 8 weeks of R. R produced an improvement in VE (VE to VCO₂), Oxygen uptake efficiency (the linear regression slope of O₂ to log VE), and stroke volume (SV), represented by O₂ pulse (Table below, mean +/- SD).

Ventilatory efficiency		VO ₂ efficiency		O ₂ pulse (SV)	
Pre-R	Post-R	Pre-R	Post-R	Pre-R	Post-R
50.6+/-9.8	41.6+/-6.4	1.00+/-0.28	1.30+/-0.32	7.45/-1.8	9.04+/-1.9
(P<0.01)		(P<0.028)		(P<0.05)	

These findings reflect added benefit of R in improving not only pump function, previously demonstrated, but enhances VE, the most powerful predictor of patient survival. R should be considered as an adjunct to standard treatment for class III-IV CHF patients.

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