Is there any evidence that multi disciplinary pulmonary rehabilitation impacts on survival/life expectancy?

A 2005 systematic review of 6 RCTS including 230 patients looked at whether respiratory rehabilitation after acute exacerbation improves prognosis and health status compared to usual care. In terms of the effect on mortality the individual study relative risks for mortality ranged from 0.40 (0.18-0.86) to 1.00 (0.07–15.04). The pooled risk ratio was 0.45 (0.22-0.91). Although no significant heterogeneity was present, it should be noted that the length of follow-up differed substantially between these studies. The current evidence suggests that respiratory rehabilitation reduces unplanned hospital admissions and mortality and improves HRQL and exercise capacity when initiated immediately after acute exacerbations.[1]

A 2003 systematic review looked at the impact of pulmonary rehabilitation on clinical outcomes in patients with COPD. The review found that pulmonary rehabilitation improved the health status of patients with moderate to severe disease but no material effect was observed on long term survival (RR, 0.90; 95% CI, 0.65 –1.24).[2]

The 1997 joint ACCP/AACVPR evidence based guidelines found that assessing survival in patients with COPD was difficult due to variation in the expected survival, based on age, disease severity, location (high altitude or not), and type of COPD (reactive or nonreactive). One randomised controlled trial found no significant difference in survival, while one non-randomised controlled trial reported greater survival (statistical analysis not reported). Observational studies also indicated a possible survival benefit of pulmonary rehabilitation when compared with historical controls. The RCT (119 patients) found that at 6 years survival in the rehabilitation group was slightly better 67% compared with 56% in the control group. This was not statistically significant (p=0.32). The non-randomised controlled trial reported a 10 year survival of 66% patients completing pulmonary rehabilitation. 1 133 patients participated in the trial (212 pulmonary rehabilitation, 921 no pulmonary rehabilitation).[3]

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[1] Puhan MA, Scharplatz Madlaina, Troosters Thierry & Steurer Johann. Respiratory rehabilitation after acute exacerbation of COPD may reduce risk for readmission and mortality – a systematic review. Respiratory Research, 2005, 6, 1, p54.

[2] Sin DD, McAlister F A, Man S F , Anthonisen N R. Contemporary management of chronic obstructive pulmonary disease: scientific review. JAMA, 2003, 290, 17, p. 2301-12

[3] Ries A L, Carlin B W, Carrieri-Kohlman V, Casaburi R, Celli B R, Emery C F, Hodgkin J E, Mahler D A, Make B, Skolnick J. Pulmonary rehabilitation: joint ACCP/AACVPR evidence-based guidelines. Chest. 1997;**112**(5):1363-1396
http://www.mrw.interscience.wiley.com/cochrane/cldare/articles/DARE-971397/frame.html

There is one randomised controlled trial that has been conducted and summarised in table 1.

STUDY	**Patients**	**Intervention/Follow Up**	**Outcome**
Griffiths-T-L et al. 2001	200 patients mainly with chronic obstructive pulmonary disease	6-week multidisciplinary rehabilitation programme (18 visits) or standard medical management	Six of the 99 patients in the rehabilitation group and 12 of the 101 patients in the control group died during the study. **Patients in the rehabilitation group had a lower mortality rate than those in the control group.**