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Title **Cardiac Rehabilitation – A Health Technology Assessment: Evidence From the Literature and the DANREHAB Trial**

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Aim

To analyze the prerequisites and consequences of cardiac rehabilitation (CR) focusing on the perspectives of the patient, the technology, the economics, and the organization.

Conclusions and results

This health technology assessment (HTA) shows that CR increases patient satisfaction, and that patients are willing to participate in the service. The assessment identified 49 randomized trials on the effects of CR. A meta-analysis of the trials shows that CR reduces total mortality by 19% (OR 0.81 (95% CI 0.69–0.95)) and cardiac mortality by 26% (OR 0.74 (95% CI 0.61–0.90)). The trials primarily include men below 65 years of age with myocardial infarction, and it is uncertain whether the effect can be extrapolated to a wider target group. The quality of the trials can be questioned, leaving a risk of overestimating the effect of CR. Based on 3 high-quality trials, there is no statistical significant evidence for the effect of CR on total mortality (OR 0.92 (95% CI 0.40–2.14)) or cardiac mortality (OR 0.70 (95% CI 0.35–1.41)). There is no evidence on the effect of CR on reinfarction rates or revascularization rates. CR has a significant effect on cardiac risk factors, ie, blood pressure, lipids, and smoking, and this effect might be due to bias. Some trials show an effect of CR on rehospitalization and total bed days. Regarding quality of life, there is no evidence of CR being superior to usual care. More high-quality trials are needed on this topic. CR reduces acute rehospitalization rates and total bed days spent in the hospital, which raises the potential for reducing total healthcare costs. CR is not fully implemented at hospitals in Denmark. Several organizational challenges exist in the implementation process of CR, but a local study shows that it is possible to implement CR in accordance with the current guidelines in Denmark.

Methods

The HTA is based on a systematic review and meta-analysis of CR trials. Further, the HTA analysis includes results from the Danish CR randomized controlled trial (DANREHAB trial) and cost analysis. The report also presents an organizational analysis on diffusion of CR in Denmark, the translation of the CR concept into clinical practice at a local hospital, and an extensive discussion on the ethical implications of CR.

Further research/reviews required

Detailed knowledge is sparse on how to organize and operate CR. There is a need to gather experiences from existing programs and programs under development. CR must be studied in large, high-quality trials before final conclusions on effects can be drawn.

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