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Hypertrophic cardiomyopathy and exercise restrictions: time to let the shackles off?

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Introduction
Physical activity is well known to have many health benefits. However, patients with hypertrophic cardiomyopathy (HCM) might carry an increased risk of sudden cardiac death (SCD) during physical activity. This threat has to be considered in the risk versus benefit analysis of physical activity versus a more sedentary lifestyle. Current guidelines focus primarily on what level of activity should be entirely excluded and what level is considered safe. However, it does not quantify nor qualify the amount of physical activity which should actively be undertaken. We aimed to analyse current evidence in attempt to answer this question.

Method
For this review, we focused on non-athletes who made up the majority of HCM patients. However, we found that majority of the current evidence were geared towards athletes. In total, we analysed 27 papers.

Results
Obesity is a well documented aetiology of many diseases and patients with HCM have been observed to have higher BMI. When considering physical activity of patients with HCM, both patients and current guidelines tend to focus on avoidance of risk and restriction of exercise. This is understandable given the consequence of SCD in HCM patients. A retrospective review of 78 patients found that at the time of cardiac catastrophe, 46 of them were engaged in sedentary activities. This is further backed up by a UK study which found only 35 of 185 patients died during exertion. A meta-analysis of 3449 non-athletes found only 7.8% had SCD caused by HCM. These results suggest that prescribed exercise can be safe in non-athletes.

A cross-sectional study of 187 HCM patients with left ventricular hypertrophy investigated if a history of vigorous exercise was associated with adverse events including ventricular arrhythmias. It found that vigorous exercise was not associated with ventricular arrhythmias. Saberi et al conducted the first randomised controlled trial (RCT) designed to investigate the effect of prescribed training in HCM patients. 136 patients were randomised into a normal activity group and a 16 week prescribed moderate- intensity training group. At 16 weeks, there was an absolute increase of 6% in the mean change in peak oxygen consumption (peak VO2) between the groups. This was an important finding as the HF-ACTION trial found that every 6% increase in peak VO2 was associated with an 8% lower risk for cardiovascular mortality.

Conclusion
Current guidelines on exercise for patients with HCM are very restrictive. The recommendations for level of exercise are focused on prohibition rather than encouraging a safe and sensible level of exercise. RESET-HCM is the first RCT of its kind which successfully shows that carefully guided exercise is not only safe but can also be beneficial for patients. With more studies targeting the role of exercise and activity in these patients, it is only a matter of time before our focus switches from restricting activity to sensible exercise prescription.
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