A new dawn of managing cardiovascular risk in obesity: the importance of combining lifestyle intervention and medication

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This editorial refers to ‘Aerobic, resistance, or combined exercise training and cardiovascular risk profile in overweight or obese adults: the CardioRACE trial’, by D. Lee et al., https://doi.org/10.1093/eurheartj/ehad827.

Graphical Abstract

Management of cardiovascular risk in obesity

Increase CPEx capacity
increase lean BM

Exercise

Weight reduction

Nutrition

Risk factor control

Medication

Failure to
6 months

Add

Reduce body weight (<5%)

Control risk factors

Individuals with established CV disease or at high disease risk

Increase CPEx capacity
increase lean BM

Exercise

Weight reduction

Nutrition

Risk factor control

Medication

Weight reduction

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Obesity has finally entered the clinical scope of the cardiology community, as being an independent pathophysiological mediator and accelerator of a broad spectrum of cardiovascular diseases. This is demonstrated by the next European Society of Cardiology congress in London in 2024, which will focus on the topic of obesity within all section topics of the congress, ranging from preventive cardiology to heart failure, arrhythmias, imaging, coronary heart disease, acute cardiovascular care, and nursing. One of the main drivers for this general change in mindset is the recent results of clinical trials of glucagon-like peptide-1 receptor agonists (GLP-1 RAs) for patients with obesity, diabetes, and heart failure with mildly reduced and preserved ejection fraction, which have shown improvements in cardio-metabolic risk profile, accompanied by a reduction in cardiovascular outcomes.

Lifestyle intervention by nutritional counselling and exercise training have so far been the primary approach to treat obesity and is an integral part of any pharmacological or surgical obesity therapy. In clinical practice, lifestyle intervention is often accompanied by the addition of medication to improve co-existing cardiovascular risk factors such as dyslipidaemia, arterial hypertension, and (pre-) diabetes, as in a significant proportion of patients, the impact of lifestyle is often small or not sustained over a longer period of time. Exercise training is seen as a key component of lifestyle intervention as endurance training will increase energy expenditure acutely and resistance training chronically by increasing muscle mass, the latter being important for long-term weight reduction. However, the effects of combining both types of exercise, rather than just a single type, on cardiovascular risk factors are less clear.

In the current issue of the European Heart Journal, the kinesiologist Duck-chul Lee and colleagues from Iowa University in the USA have addressed the role of different types of exercise interventions in predominantly non-diabetic overweight and obese individuals with relatively low cardiovascular risk. Both sexes were equally represented in the trial, which also included a broad age range. The novelty of this randomized controlled trial is the comparison of the same exercise time of 60 min thrice weekly by either (i) aerobic endurance exercise, (ii) resistance exercise, or (iii) no intervention over 12 months. Importantly, the investigators achieved a high adherence to the intervention, with an average attendance rate for supervised exercise sessions of 82%, thereby overcoming the problem of low adherence, which have shown improvements in cardio-metabolic risk profile, accompanied by a reduction in cardiovascular outcomes.

The introduction of the optimal exercise and lifestyle programme4,13 and lifestyle programmes in overweight and obese individuals by Duck-chul Lee and colleagues is of particular interest. GLP-1 RAs may reduce both fat and muscle mass, unless exercise is increased. Because muscle mass and activity are important determinants of basal metabolic rate, a reduction in muscle mass during weight reduction increases the likelihood of rebound weight gain after discontinuation of medication, and a yo–yo effect thereafter. Therefore, current management strategies for obesity should now be reconsidered. Although the role of a comprehensive obesity treatment scheme combining behavioural interventions, nutrition and physical activity, and psycho-social support is undisputed, introducing GLP-1 RAs into the scheme seems necessary and has already been accepted by physicians and the public alike (Graphical Abstract). However, despite the positive effects of GLP-1 RAs, the main challenges remain to introduce lifestyle interventions when introducing medication as well as to sustain these effects once medication is discontinued. Therefore, introducing viable and effective lifestyle interventions, e.g. exercise during the initiation of a GLP-1 RA, is essential.

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The management of obesity has been a domain of diabetology and nutrition medicine. Now it has reached cardiology and will remain there. The introduction of the optimal exercise4,13 and lifestyle programmes3 in addition to medication for overweight and obese subjects with or without diabetes will be a key challenge for the multidisciplinary obesity and metabolic team. Therefore, a clear educational strategy on obesity and obesity-associated diabetes management14 for the general cardiologist is essential, which is already on the preventive cardiology curriculum of the European Association of Preventive Cardiology.15 Effective management of obesity provides an important addition to the armamentarium of preventive cardiology that should benefit many hundreds of millions of patients worldwide.

Declarations

Disclosure of Interest

All authors declare no disclosure of interest for this contribution.
References