

COMMENTARY

Weight loss and blood pressure normalization: the relevance of early interventions in hypertension

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Overweight and obesity are very well-known risk factors for incident hypertension¹ and for all-cause mortality; a recent estimate by US researchers suggests that obesity is *per se* responsible for one out of every 10 preventable deaths in the United States.²

Even though the most relevant guidelines in the field of cardiovascular disease prevention strongly emphasize the need for overweight and obese individuals to change their lifestyle to reduce body weight and thereby improve blood pressure and lower cardiovascular disease risk,³ there is a lack of direct evidence that this approach is useful in general practice. In fact, although potentially useful in the rigid setting of a clinical trial, at least one unfocused intervention did not significantly improve the blood pressure in a population setting.⁴ Moreover, a recent systematic review concluded that the available evidence supports the hypothesis that loss of 1 kg body weight corresponds to a decrease of 1 mm Hg in systolic blood pressure, but only for follow-up periods of 2–3 years, possibly reflecting the fact that blood pressure often reverts to higher levels, regardless of whether weight loss is maintained. Moreover, this relationship is not clear with respect to diastolic blood pressure.⁵

In this context, the paper by Fogari *et al.*⁶ addresses a relevant issue. The authors evaluated the effect of weight loss on blood pressure (and blood pressure-related parameters) in a large sample of overweight mildly hypertensive patients. The patients who normalized their body mass index also experienced a larger improvement in blood

pressure and in a number of metabolic and hormonal parameters, including insulin sensitivity, plasma leptin and activation of the renin–angiotensin–aldosterone system. Even if the decrease in leptin level proportional to weight loss is a physiological response, it must be highlighted that leptin level is a strong independent predictor of both hypertension and cardiovascular disease in overweight individuals.⁷ On the other hand, an overweight patient with mild hypertension exhibits the typical symptoms of the true metabolic syndrome, in which there is no confounder, such as a single maximal metabolic or hemodynamic alteration, and which is widely prevalent in the general population. This effect could be of particular interest in the United States and other Western countries, where the number of young overweight individuals has increased rapidly over the past few decades.⁸

Therefore, Fogari *et al.* point out the possibility that the hypertension classified in nearly 90% of cases as ‘essential’ is actually caused by a moderate (but just as damaging) increase in body weight in approximately one-third of these individuals. Almost as dramatic is the observation that, in the setting of a clinical trial carried out in a highly specialized setting, more than one-third of the patients were unable to lose a significant amount of weight, and less than one-half of the remaining patients did not achieve a normal body weight. A similar result was observed in a smaller study recently carried out in a Mexican population sample.⁹ A relevant issue that remains unexplored in the study by Fogari *et al.* is whether the obtained results will be maintained in the long term, that is, whether the patients who maintain their normal weight will develop hypertension in the future. Even

if these patients develop hypertension, they will have less exposure to hypertension as a risk factor and will require drug medication later in life compared with overweight individuals.

This study also addresses the potential usefulness of orlistat in protocols aimed at reducing blood pressure in overweight patients. It is already known that orlistat is useful in achieving blood pressure reduction in obese patients, proportional to the dose used, the weight loss obtained and the baseline body weight.¹⁰ In this study, the authors used low-to-moderate drug dosages, proportional to the patient’s body weight, with a very high tolerability profile. In this context, orlistat seems to be more useful in improving patient compliance with a reduced-calorie diet, and in reducing blood pressure than in accelerating weight loss.

On the basis of actual evidence, supported by the results of the study by Fogari *et al.*, it seems very useful to intensify public health policies aimed at optimizing the body weight of the general population in order to reduce the incidence of hypertension and metabolic syndrome. The same effort must also be more intensively pursued in hypertension clinics and similar specialized settings, because a positive and relevant result is clearly achievable.

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