

Hypertension and lifestyle modification: how useful are the guidelines?

Hypertension is a significant risk factor for coronary artery disease and stroke, a leading cause of death and disability worldwide, and a major risk for dementia, chronic kidney disease, coronary heart disease, and heart failure. The prevalence of hypertension-related events is increasing, with the majority occurring among pre-hypertensives (120–139 mmHg systolic; 80–89 mmHg diastolic) and stage-1 hypertensives (140–159 mmHg systolic; 90–99 mmHg diastolic). In the UK it was estimated that there are 62 000 needless deaths per year due to uncontrolled blood pressure,¹ with the condition presenting a particular problem among Asian immigrant communities.

There has been some discussion in this Journal of the helpfulness of guidelines for a number of conditions. One editorial has highlighted the possible mismatch between guidelines and internationally-agreed quality criteria, the lack of a concise set of concrete recommendations, and a risk of bias in that, notwithstanding the availability of scientific evidence, the guidelines may in fact largely reflect local culture or personal viewpoints.² It is with this in mind that we intend to examine the guidelines for control of hypertension with respect to diet/behavioural modification.

LIFESTYLE MODIFICATION ADVICE IN THE GUIDELINES

The hypertension clinical guideline from the National Institute for Health and Clinical Excellence (NICE) usefully recommends regular aerobic exercise and reduction of salt, alcohol, and smoking, and advocates 'healthy, low-calorie diets' for 'overweight individuals with raised blood pressure', but gives a rather negative comment about its 'modest effect' and the unexplained variability of effect in trials.³ There is no explanation of what a healthy, low-calorie diet comprises, and the overall impression is that the writers do not consider dietary intervention to be relevant to those of normal weight or those without

hypertension, and that even in overweight hypertensives it will not have much effect.

This is in stark contrast to the far more comprehensive British Hypertension Society (BHS) guidelines,⁴ which largely concur with guidance from the World Health Organization,⁵ European Society of Cardiology,⁶ American Society of Hypertension,⁷ the American Heart Association,⁸ and the American Medical Association.⁹ These guidelines recognise the wealth of quality clinical trials showing unequivocally that diet and behavioural interventions can have a significantly beneficial effect on hypertension, which is not confined to the overweight.

BHS guidelines state that advice should be provided for prevention as well as treatment of hypertension and should be given to pre-hypertensives and those with a strong family history. They point out that effective lifestyle modification can lower blood pressure by at least as much as a single antihypertensive drug. Even a 2 mmHg decrease in diastolic blood pressure has been found to reduce hypertension prevalence by 17%, risk of coronary heart disease by 6%, and stroke by 15%.¹⁰

In addition to the NICE recommendations, the BHS also advocates maintenance of normal body weight, consumption of a diet rich in fruit and vegetables, and reduced total and saturated fat. They make the point that these interventions can reduce the need for drug therapy, enhance the effect of antihypertensive drugs, reduce the need for multiple drug regimens, and favourably influence overall cardiovascular risk.⁴ The international guidelines^{5–9} advocate diet/behavioural modification at every stage, both before drug therapy in pre-hypertension or uncomplicated stage-1 hypertension, as well as for high-risk patients and those on medication. They also specifically recommend adoption of the Dietary Approaches to Stop Hypertension (DASH) eating plan.

PROVEN LIFESTYLE MODIFICATIONS

The DASH diet is low in total and saturated fat, red meat, sugar, sugary drinks, and refined carbohydrates, but high in fruits, vegetables, whole grains, fish, poultry, and low-fat dairy products. The DASH diet has been found to lower weight, heart rate, risk of type 2 diabetes, C-reactive protein, apolipoprotein B, and homocysteine and is associated with a lower incidence of heart failure, all-cause mortality, and stroke.^{11–12}

The Optimal Macronutrient Intake Trial to Prevent Heart Disease (or OMNIHeart trial) found that replacement of some of the DASH diet's carbohydrate intake with either protein (50% from plant sources) or unsaturated fat (mainly monounsaturated, found in olives and olive oil) could reduce blood pressure, low-density lipoprotein, homocysteine, and coronary heart disease risk even further.^{13–14}

The PREMIER trial found that the DASH diet combined with alcohol and salt reduction, weight loss, and aerobic exercise achieved a reduction of 14.2/7.4 mmHg among hypertensives, while hypertension prevalence fell over a period of 6 months from 38% to 12%.¹⁵ Salt reduction, possibly the single most important hypotensive measure, involves staying away from processed foods, regularly checking food labels for salt content, and using herbs or spices for flavour.¹⁶

Other successful approaches include the Mediterranean diet, essentially the DASH diet with low sodium and with added garlic and increased omega-3-containing fish: both powerful hypotensives. The Mediterranean diet is also inversely associated with diabetes, obesity, and hypercholesterolaemia among high-risk patients, and was recently advocated by the Mayo Clinic for women's heart health. Drinking green tea and modest quantities of red wine are also effective.^{17–18}

OPTIMISING THE CHANCE OF SUCCESS

It is generally agreed that the greatest chance of success with diet and behavioural modification is achieved with clear written and verbal explanations, a chance for the patient or their carer to ask questions and talk through potential problems, regular monitoring and follow-up, and a support group to encourage compliance. Referral to a dietician, nutritionist, or experienced nurse would clearly be beneficial.

A recent UK study showed that hypertension management delivered by practice nurses could provide improved clinical outcomes.¹⁹ Where these resources are not available, a physician needs to be able to give patients the basic information (Box 1). Although some patients are reluctant to accept that their lifestyle choices have contributed to their condition and may refuse advice to change, the authority and credibility of the physician should not be underestimated. The American Heart Association guidelines specifically recognise that physicians can have a powerful influence on their patients' willingness to make changes.⁸

BENEFITS OF LIFESTYLE MODIFICATION

The BHS and international guidelines advocate diet and behavioural modification with all patients, regardless of weight,

Box 1. Diet and behavioural modifications to control hypertension

- Stop smoking
- Reduce:
 - Total and saturated fat
 - Red meat
 - Sugar, sugary drinks
 - Refined carbohydrates
 - Salt
 - Alcohol (except modest amounts of red wine)
 - Weight
- Increase:
 - Fruits, vegetables, whole grains
 - Fish and poultry
 - Low-fat dairy products
 - Olives and olive oil
 - Garlic
 - Aerobic exercise

severity of hypertension, or intake of medication. The advantages include a significant drug cost reduction, a beneficial effect on other conditions, such as diabetes and hypercholesterolaemia, and avoidance or delay of drug treatment with its potential for adverse effects.

In an age when patients are increasingly educating themselves as to the side effects of drugs and possible alternative approaches, a growing number may be willing to take more responsibility for their health and institute the necessary changes, but merely require approval and direction from their doctor. GPs should take every opportunity to put pressure on the government and food manufacturers to champion a healthy lifestyle and reduce unhealthy elements in processed foods.

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