REDUCING HIGH BLOOD PRESSURE: EVIDENCE-BASED NATURAL THERAPIES

JAMES MESCHINO D.C., M.S., N.D

In day-to-day practice, many practitioners encounter patients with hypertension problems that are not being managed effectively or where the patient has refused to continue their medications due to undesirable side effects or for other reasons. As natural health practitioners, we are often asked if there are any dietary supplements or nutritional therapies that can lower blood pressure in a more natural way without producing unwanted side effects. Research studies conducted over the past fifteen years supports the use of specific dietary and supplementation practices, as well as participation in physical activity, as natural interventions to reduce high blood pressure. In some cases these natural solutions are all that are required to control blood pressure, and in other cases theses practices can significantly lower the requirement for medication, helping to reduce the likelihood of adverse side effects occurring from the use of these drugs.

TRENDS IN HYPERTENSION

High blood pressure affects approximately twenty-five percent of the adult population in developed countries like the United States and Canada. In up to 75% of these cases hypertension manifests in a mild form, which is highly sensitive to nutrition, supplementation and lifestyle practices. [1,22] Even the most current medical literature stresses that all persons with documented hypertension should receive intensive non-pharmacologic therapies to improve control of their condition and reduce their risk of developing further cardiovascular disease. [2] Hypertension, along with hypercholesterolemia and cigarette smoking are considered to be the three cardinal risk factors for cardiovascular disease. Studies indicate that lowering a patient's blood pressure from 160/90 to 140/80mmHg may decrease risk of heart disease by more than 30 percent. [3]

From a medical standpoint, the use of anti-hypertensive drugs dominates the management of these conditions and little attention is often given to nutrition and lifestyle approaches. However, many patients discontinue their drug regime due to side effects from these drugs, which can include fatigue, male impotence, elevated cholesterol levels, light-headedness, dizziness and skin eruptions. [4] In Canada, 22% of adults have hypertension, but only 16% of this population are treated and controlled. This leaves 84% of hypertensive patients uncontrolled and sometimes unaware that this silent killer is even present.[5,6] In general, hypertension across the population is not well controlled and an effort by alternative health care providers to help remedy this situation is urgently needed as cardiovascular disease continues to be the leading cause of premature death in our society.

EFFECTIVE NUTRITIONAL THERAPIES AND LIFESTYLE INTERVENTIONS

1. **<u>Weight Loss</u>**

   Hypertensive patients who are overweight experience a drop to normal in their readings in approximately two-thirds of cases by simply losing 10-15 pounds.[7,8] Overweight patients tend to display insulin resistance, especially in cases where there is a propensity for abdominal weight gain (android obesity). Insulin resistance results in higher secretion rates of insulin to help overcome the resistance to insulin displayed by peripheral body cells. One of the consequences of hyperinsulinemia is increased retention of sodium by the kidneys, which tends to drive up blood pressure in sodium-sensitive individuals. Thus, moderate weight loss helps to reverse insulin resistance, lowering basal and postprandial insulin blood levels. This, in turn, encourages less sodium retention and a natural lowering of blood pressure in these individuals. It is estimated that in up to 50% of adults in the United States whose hypertension is being

pharmacologically managed, the need for drug therapy could be alleviated with only modest reductions in body weight.[9]

In conjunction with dietary advice to help reduce excess weight, engaging in regular endurance-based exercise (optimum 40 to 60 minutes of at least brisk walking, four to five times per week) has been shown to help reduce high blood pressure. Exercise further increases insulin sensitivity, accelerates weight loss and induces other changes within the cardiovascular system which lend themselves to a lowering of blood pressure.[6,10] Clearly, health practitioners should become more involved in providing patients with safe and effective nutrition and lifestyle practices that reverse weight gain and enhance the patient's overall level of cardiovascular fitness.

2. Lower Alcohol Consumption

Studies indicate that excess alcohol consumption is a culprit in hypertension. Restricting alcohol consumption to two or fewer dinks per day; fewer than 14 drinks weekly for men, 9 for women, has been shown to help lower blood pressure in individuals who consume alcohol.[7]

3. Sodium Restriction

Approximately 40-50% of hypertensive patients are thought to be sensitive to sodium intake as at least a partial cause of their problem. Salt sensitivity appears to be more common among blacks, diabetics and the elderly. Reducing sodium intake to 2000 mg per day is a prudent step in the global management of hypertension. This requires restricted use of discretionary salt and avoiding heavily salted processed foods. (e.g., prepared soups, pickles, salted snack foods, foods containing MSG etc.) [7,11,12,13]

4. Calcium Supplementation

A number of well-designed human intervention trials reveal that calcium supplementation (1,000-1,500 mg calcium per day as calcium carbonate or citrate) can lower blood pressure, particularly in sodium-sensitive hypertensive patients. Calcium encourages sodium excretion by the kidneys and, in concert with magnesium, helps to relax the smooth muscle lining of arterioles, lowering diastolic pressure. [11,14,35] Calcium and magnesium supplements are best taken with meals for this purpose, and to enhance their absorption. [33]

5. Magnesium Supplementation

Supplementation with 600 mg per day of magnesium has been shown to lower blood pressure in some, but not all, studies. Presently, a greater body of evidence exists for calcium supplementation than for magnesium. However, there is no risk in including 600 mg of magnesium in the management of hypertension (unless severe kidney disease is present).[15]

6. Omega-3 Fat Supplementation

Over sixty double-blind studies have demonstrated that either fish oil or flaxseed oil supplementation can be effective in lowering blood pressure. One tablespoon per day of flaxseed oil can lower systolic and diastolic blood pressure by up to 9 mm Hg. [16] I generally recommend 1,000 mg of flaxseed oil (in capsule form), twice per day with meals.

7. Garlic Extract Supplementation

Supplementation with a garlic extract product that yields 4,000 mcg of allicin (1/2 to 1 clove of garlic) may help to lower blood pressure. Reductions of 20-30 mm Hg systolic

and 10-20 mm Hg diastolic pressure have been demonstrated. However, this effect varies greatly among hypertensive subjects. [2,17]

8. Coenzyme Q10 Supplementation

In recent years, a number of randomized, double-blind trials have demonstrated that Coenzyme Q10 (CoQ10) supplementation can effectively and consistently lower blood pressure in hypertensive subjects. CoQ10 is directly involved in the bioenergetic pathways of ATP production in heart muscle (myocardium). Research reveals that 39 percent of patients with high blood pressure have a deficiency of CoQ10. Supplementation with CoQ10 appears to correct this deficiency, correcting the underlying metabolic abnormality that leads to high blood pressure development. Most experts in this field believe that CoQ10 is able to lower blood pressure through its favourable influence on heart bioenergetic mechanisms and possibly relaxing vascular smooth muscle. Because CoQ10 corrects an underlying metabolic defect that leads to high blood pressure, lowering of blood pressure usually requires 4 to 12 weeks of CoQ10 supplementation. [18,19,20,21]

In a recent randomized, double blind trial among patients receiving antihypertensive medications, the addition of 60 mg of CoQ10, twice daily was shown to markedly reduce both systolic and diastolic blood pressure. CoQ10 supplementation also reduced other risk factors for cardiovascular disease including a lowering of fasting and 2-hr. plasma insulin, glucose, triglycerides, lipid peroxides and blood levels of malondialdehyde – a marker of free radical damage. The authors of the study conclude that CoQ10 decreases blood pressure possibly by decreasing oxidative stress (free radical generation) and insulin response in patients with known hypertension receiving conventional antihypertensive drugs. This study and others provide evidence that CoQ10 can be taken safely in conjunction with antihypertensive drugs to produce better blood pressure lowering outcomes, if necessary. [22,23,24]

The daily dosage of CoQ10 to aid in blood pressure lowering is usually 60 mg, twice per day,[22] although 100 mg once per day has been tested [16] and in mild cases of hypertension 30-75 mg, once per day may be sufficient to normalize blood pressure.[23,24]

9. Hawthorn Extract Supplementation

The hawthorn plant and its berries are a rich source of a unique strand of bioflavonoids, known as procyanidins. Like CoQ10, these procyanidins have been shown to reverse congestive heart failure by enhancing bioenergetic pathways within the heart muscle (myocardium). More recently, we have seen a number of intervention trials that demonstrate that hawthorn extract supplementation can also effectively reduce high blood pressure. The procyanidins in hawthorn act as cardiac glycoside agents that increase cyclic AMP and produce a vasodilation effect on arteries. The daily dosage required to lower blood pressure ranges from 100-250 mg, up to three times daily if taken as a sole antihypertensive agent. To ensure sufficient levels of its active constituents (procyanidins), the product must be standardized to 5 percent flavonoid content. (1-2% vitexin content) Usually two to four weeks is required in order to see a significant decline in blood pressure in hypertensive patients.[27] Hawthorn is contra-indicated in patients taking digitalis or digoxin. [34]

SUMMARY

The World Health Organization has promoted lifestyle modification as an effective method of reducing high blood pressure and overall cardiovascular risk.[24] A summary of effective natural antihypertensive interventions include:

1. Weight Loss – Usually, only 10-15 lbs. of weight loss (in overweight subjects) will produce a significant blood pressure reduction in hypertensive patients.
2. Salt Intake – Limit to 2-3 gms per day.
3. Limit alcohol consumption to less than two drinks per day and even less for women. (max. 9 drinks per week)
4. Exercise – endurance exercise 30-60 minutes per session, a minimum of three times per week.
5. Calcium Supplementation – 1,000-1,500 mg per day (calcium carbonate or citrate), taken in divided doses of 500 mg per dose (with food).
6. Magnesium Supplementation – 600 mg per day (all at once or in divided doses, with food).
7. Combination Flaxseed and Fish Oil – 2,400-3,600 mg per day (two 1,200-mg capsules with meals).
8. Coenzyme Q10 – 60 mg, twice per day is a popular treatment for hypertension.
9. Hawthorn – 75 mg, twice per day (std to 5% flavonoid content) can be used provided the patient is not also taking digitalis or digoxin.
10. Garlic Extract Supplementation (optional) – yielding 4,000 mcg of allicin content.
11. Increase fruit and vegetable intake to at least 5 servings per day.

The preceding recommendations can be used in conjunction with standard antihypertensive drugs if necessary. At present, there is sufficient evidence from well-designed medical intervention trials to show that lifestyle interventions are successful in reducing or eliminating the need for pharmacologic therapy in a high percentage of hypertensive patients.[29,30,31,32]

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