Anti-Hypertension Protocol Using Shark Cartilage and Cordyceps sinesis

by Nelson Kraucak, MD, ABFP

It's one of the greatest unsolved mysteries physicians learn in medical school. If high levels of the enzyme renin are a primary cause of hypertension then why are 40% of low-renin patients also hypertensive?

In finding effective therapies for my hypertensive patients, I have discovered the work of a researcher whose studies may explain the mystery of why low-renin people can still suffer from high-blood-pressure. Furthermore, this researcher, Dr. Peter Pang, has found two natural, anti-hypertensive substances – nutrients I've used in my practice to significantly lower the blood pressure of my patients.

As many of you are aware, renin is an enzyme produced by the kidney cells. Its production leads to a series of events that eventually result in high blood pressure. This is because, in the blood, renin splits a large peptide into a smaller peptide that is then cleaved by another enzyme called the angiotensin-converting enzyme. This converting enzyme breaks down further into an even smaller peptide called angiotensin 2 and it is angiotensin 2 that causes blood pressure to rise in high-renin patients. In fact, many hypertensive drugs work by blocking this enzyme, preventing the conversion of angiotensin 1 into 2 that results in hypertension.

Over the years, I'd tried various natural substances indicated for lowering blood pressure and achieved positive results. I was, however, searching for more consistent and dramatic improvement. That's when I was presented with the research of Dr. Peter Pang and his work with Cordyceps sinesis and shark cartilage. Dr. Pang's research indicated these two substances could indeed be useful in alleviating hypertension.

Before addressing Dr. Pang's research and the principles behind why Cordyceps sinesis and shark cartilage have been successful in alleviating hypertension, I will discuss my clinical perspectives on the use of these two substances in my practice.

I began to incorporate into my treatment regimens a formula called Pressure-FX®, which includes Cordyceps sinesis and shark cartilage. Prior to adding Cordyceps sinesis and shark cartilage, I first treat with 500 mg. of magnesium, 3 times daily up to bowel tolerance. Sometimes, simply adding magnesium is enough to stabilize the blood pressure. More often, I'll need to add L-carnitine (250-500 mg. once or twice a day) and CoQ10 (30 milligrams once or twice a day of Qgels).

Next, my protocol includes the addition of Pressure-FX. I usually start with 1 capsule three times a day. On one or two occasions I have used one cap twice a day primarily because the patient was unable to remember to consume the third dose.

I've found that many of my patients treated with the Cordyceps sinesis/shark cartilage combination experienced a significant improvement in their blood pressure. During treatment with Pressure-FX, approximately 65% of my patients – and that's a conservative estimate – experienced blood pressure that remains under good control. Most times, Pressure-FX in combination with magnesium and CoQ10 is adequate to produce a significant improvement in blood pressure.

Occasionally, in cases of hard to control hypertension, a patient must also be maintained on blood pressure medication in addition to the shark cartilage/ Cordyceps but in these instances the dosage of blood pressure medication can be reduced considerably after treatment with Pressure-FX.

I will present several case studies to paint a clearer picture of the improvement seen with shark cartilage and Cordyceps sinesis.

Case Study Number One
A 64-year-old male pilot established in my office as a new patient. During the physical exam, I discovered his blood pressure was excessively high: 180/110. As a pilot, he was concerned about keeping his blood pressure controlled, but he was reluctant to take prescription medications to treat the condition. I started him immediately on magnesium, carnitine and Pressure-FX because his blood pressure was so high I worried about his risk of stroke. I asked him to keep a log of his blood pressure.

On subsequent visits his log readings taken in the office showed his blood pressure dropped to 150s or 160s over 80s or 90s. The best readings were achieved when he was compliant with the treatment protocol. The patient remarked that many times he'd forget to take the shark cartilage/ Cordyceps combination because he was feeling so good. When the patient consistently adds magnesium along with the Pressure-FX and CoQ10, his blood pressure usually remains in the 130s over 70s – a significant drop from his pre-treatment 180/110 readings.

Case Study Number Two
A 59-year-old African American female has been taking Pressure-FX for 9 months along with magnesium and CoQ10. At the start of treatment, her blood pressure was 180/100. Her blood pressure log and measurements taken during office visits reveal her blood pressure is now 150/78. The dosage of Pressure-FX is 1 capsule, three times a day.

Case Study Number Three
A 57-year-old realtor, a Caucasian male, first presented with blood pressure in the 180s/90s. Treatment included Pressure-FX (1 cap twice a day), magnesium and chelation therapy. The slightly lower dose of Pressure-FX was to facilitate patient compliance, as he found it difficult to remember to take the third dose of Pressure-FX. After treatment, the patient's blood pressure dropped to 120/70.

Case Study Number Four
A 67-year-old African American male suffered from mild hypertension of 170/90. After treatment with Pressure-FX his blood pressure dropped to 150/80. Dosage was 1 capsule three times daily. As in all my patients, I also treated this man with magnesium.

I've found that the treatment with shark cartilage/ Cordyceps is not only successful from a results standpoint, it's also successful from the viewpoint of patient perception. The patient population receptive to treatment with Pressure-FX are those patients who prefer not to take pharmaceuticals because they are distrustful of the accompanying side effects. These side effects occur frequently with anti-hypertensive medications. In comparison, so far, neither my patients nor
I have observed any side effects with Pressure-FX.

The Calcium-PHF Connection
The discovery that shark cartilage and Cordyceps may alleviate high blood pressure occurred as a result of research by Dr. Peter Pang, a Yale-trained pharmacologist and professor emeritus at the University of Alberta. Dr. Pang set out to provide a preliminary answer to whether another factor besides high renin levels could cause hypertension. He used as a springboard for his research reports that certain circulating factors in both hypertensive rats and hypertensive humans increase intracellular calcium. A number of studies indicated that these circulating factors and the resulting rise in intracellular calcium may be responsible for hypertension. In fact, it is well established that levels of intracellular calcium affect vascular tone. Given the intimate connection between vascular tone and calcium, anything that increases intracellular calcium may also increase blood pressure.

Parathyroid hormone acts as a calcium-regulating hormone. Thirty percent or more of essential hypertension patients have increased levels of immunoreactive parathyroid hormone. In fact, hyperparathyroid patients often experience hypertension. After parathyroidectomy, the severity of their hypertension is reduced.

Consequently, researchers have hypothesized that PTH is responsible for the development of hypertension. But if PTH is indeed the culprit behind high blood pressure, then why does the administration of PTH reduce blood pressure in mammals and other vertebrates? According to some studies, PTH also inhibits calcium entry into vascular smooth muscle.

Dr. Pang began to study this contradiction and searched for a hypertensive circulating factor in the blood of spontaneously hypertensive rats. After his team of researchers injected or infused the plasma from hypertensive rats into normal rats, the blood pressure of the normal rats increased. In another experiment, by taking plasma from hypertensive human subjects and infusing it into normotensive rats, the researchers produced hypertension in the animals. When plasma from normal subjects was used, the animals experienced no increase in blood pressure. Furthermore, plasma from the hypertensive human subjects also caused an increase in the calcium uptake of rat tail arteries in vitro.

Clearly, the agent responsible for the hypertension resided in the blood. Although the precise nature of this circulatory factor was still a mystery, clues to its identity could be found in anecdotal reports that parathyroid hormone was elevated in hypertensive rats. These reports indicated the circulating factor originated in the parathyroid gland. In fact, parathyroidectomies of hypertensive rats reduced blood pressure in the animals. In addition, plasma from hypertensive rats that had been parathyroidectomized did not cause elevation of blood pressure in normotensive rats. When researchers transplanted parathyroid glands from hypertensive rats into rats with normal blood pressure, the normotensive rats experienced an increase in blood pressure.

Because of these studies, Dr. Pang and his colleagues determined that the circulating factor responsible for hypertension originated in the parathyroid gland. They named this circulating factor Parathyroid Hypertensive Factor (PHF).

An interesting characteristic of PHF is that it leads to sodium retention. This may partially explain why hypertensive patients with low-renin and rats with PHF retain sodium. PHF also leads to calcium retention, and a likely explanation for the high intracellular calcium levels seen in many hypertensive patients.

The discovery of PHF, Dr. Pang believes, goes one step beyond renin. For 30 years, scientists have studied low-renin levels and research indicates it is a definite cause of hypertension in about 15-20% of patients. And yet 40% of hypertensive patients are low in renin. High PHF levels correlate with this low-renin group of patients.

Shark Cartilage/Cordyceps
In any treatment regimen for hypertension, physicians are essentially groping in the dark because there is no way to determine the etiology of the hypertension. There is no easily accessible and affordable test to determine whether a patient's high blood pressure is the result of high renin, high PHF or some other factor. Consequently, standard pharmaceutical interventions involve a lot of guesswork. Physicians will test anti-hypertensive drugs one by one—from beta blockers to calcium antagonists to a angiotensin-converting enzyme inhibitor—until the physician finds the effective medication. Conversely, shark cartilage and Cordyceps in combination appear to work as broad spectrum anti-hypertensives, lowering the blood pressure of both high-PHF and high-renin patients.

Once Dr. Pang confirmed the connection between PHF and hypertension, he searched for natural substances that would lower PHF and control intracellular calcium levels. Dr. Pang's research led him to shark cartilage and Cordyceps sinensis.

In studying their effects on animals, Dr. Pang discovered these two substances are powerful PHF antagonists. Administration of shark cartilage, which contains a substance that may inhibit tumor angiogenesis and contains an anti-inflammatory component, decreased blood pressure and affected the intracellular calcium regulation in rats.

Researchers believe the parathyroid hypertensive factor antagonist in shark cartilage binds to the parathyroid hypertensive factor site without activating the actual activity of PHF.

Dr. Pang soon discovered that Cordyceps sinensis could also improve blood pressure in animals. Like shark cartilage, Cordyceps sinensis is best known for its anti-arrhythmia abilities. Cordyceps sinensis is derived from the mycelium of a fungus. As in other fungi, the active component is found in the glucan moiety of the polysaccharide.

Based on reports that Cordyceps sinensis could lower blood pressure in anesthetized dogs, that it possessed calcium antagonist activity in vitro, and that it could benefit PHF-related diseases, Dr. Pang began to explore the hypertensive effects of Cordyceps. He found that in rats, preparations of Cordyceps resulted in a dose-dependent reduction in blood pressure. All three Cordyceps preparations used also triggered a dose-dependent relaxation of extracellular calcium dependent contractions. The results confirmed that Cordyceps is hypotensive, that this plant-derived substance is positively inotropic and that it is vasorelaxant in rats. Furthermore, an extract of Cordyceps increased the contractile force of the heart without slowing the rate.

A group of Brazilian physicians, Osim Malina, MD, Marcia Malina, MD and colleagues, read Dr. Pang's research on the anti-hypertensive effect of Cordyceps...
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and shark cartilage. They used his research to build a clinical study of 102 hypertensive patients treated with Pressure-FX, a proprietary formula of shark cartilage and Cordyceps. Seventy-four of the patients studied had mild hypertension and 28 patients suffered from moderate hypertension. The researchers studied the patients for 3 to 12 months.

In addition to treatment with one to three capsules of Pressure-FX daily, all the subjects also underwent lifestyle modifications, increased consumption of vegetables, legumes and fruits, avoided foods linked to lipid peroxidation and supplemented with calcium, magnesium, potassium and Vitamin C. Eighty-seven of the patients also received 10 to 20 intravenous treatments with EDTA, a chelator of lead and cadmium, two toxic metals linked to arterial hypertension.

The study results revealed a dramatic drop in blood pressure in patients treated with Pressure-FX. Before treatment, mean blood pressure was 171.42± 18.08 mm Hg (systolic) and 107.95± 6.75 mm Hg (diastolic). After treatment, blood pressure dropped to 126.13 ± 13.48 (systolic) and 83.36 ± 10.23 mm Hg (diastolic).

The Brazilian researchers determined that in the absence of the shark cartilage/Cordyceps combination, 50 to 60% of the subjects responded to the mineral supplementation and lifestyle modification. Once Pressure-FX was added to the treatment regimen, 88% of the subjects responded with significantly reduced blood pressure.

Prior to treatment with Pressure-FX, 84 of the subjects had been using anti-hypertensive drugs. Once the shark cartilage/Cordyceps combination was added, 63 of those 84 patients were able to stop their blood pressure medication and maintain normal blood pressure with only Pressure-FX. Twenty-one patients needed to use both an anti-hypertensive drug and Pressure-FX in order to maintain normal blood pressure.

At first, researchers speculated that the mechanism behind the anti-hypertensive effect of shark cartilage and Cordyceps was due exclusively to its ability to inhibit PHF. Recently, however, Dr. Pang discovered that these two natural substances may effectively lower hypertension in both high-renin patients and high-PHF patients. In fact, researchers lately have observed a group of hypertensive patients that fall in between these two categories: their renin levels are normal and their PHF levels are intermediate, falling between the low and the high.

If shark cartilage and Cordyceps worked only by inhibiting high PHF, then Pang would not have expected to see more than 40% of patients respond to treatment with these two substances. Yet, physicians and researchers have seen a response rate far more than 40%. However, Dr. Pang says, the high-PHF group has a much higher chance of responding.

Beyond Hypertension

PHF has been implicated in diseases other than hypertension, indicating that shark cartilage and Cordyceps may have uses in other diseases relating to intracellular calcium levels. Research indicates that in diabetics, intracellular calcium is elevated in the target cells for insulin. As a result, the receptor in those cells is unable to respond to insulin. Dr. Pang and colleagues conducted a study in Taiwan of 400 diabetic patients. The results demonstrated that PHF is correlated with type-2 diabetes. Dr. Pang and other researchers also have connected certain types of cancer, including breast and colon cancer, to high PHF levels.

“What we are saying,” Dr. Pang reported in a recent phone conversation, “is we think we may have touched on an excessive PHF syndrome.”

According to Dr. Pang, one theory is that genetic factors influence how a patient is affected by PHF. If a patient’s blood vessel cells are programmed to respond to high PHF, the patient becomes hypertensive. If insulin target cells are programmed genetically to respond to high PHF, the patient may contract type-2 diabetes.

Conclusion

I have noted that younger patients seem to respond better and faster to Pressure-FX. In addition, patients with longstanding elevated blood pressure seem to have a delayed response. It often takes these patients two months to begin to stabilize their blood pressure. While Pressure-FX successfully treated many of my patients, there were some non-responders. It is possible, that the non-responders belonged to the high-renin class of hypertensive patients or that their blood pressure was due to other etiologies besides high PHF. The patients who did not respond to Pressure-FX did respond to rawolfia extracts and combinations of other supplements.

Dr. Pang’s research has shown us that a little-recognized circulating factor, PHF may play a role in a variety of diseases. By locating natural substances that inhibit PHF, Dr. Pang may well have solved an interesting medical mystery. My patients’ success using the PHF-lowering shark cartilage extract and Cordyceps sinensis extract contained in Pressure-FX, confirms Dr. Pang’s research in a clinical setting and indicates these two natural substances may be part of an anti-hypertension protocol.

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Note: Dr. Kraucal orders Pressure-FX from the exclusive United States distributor, Vitamin Research Products, 1-800-877-2447.

References: