

Hypertension: A Vascular Disease Marker

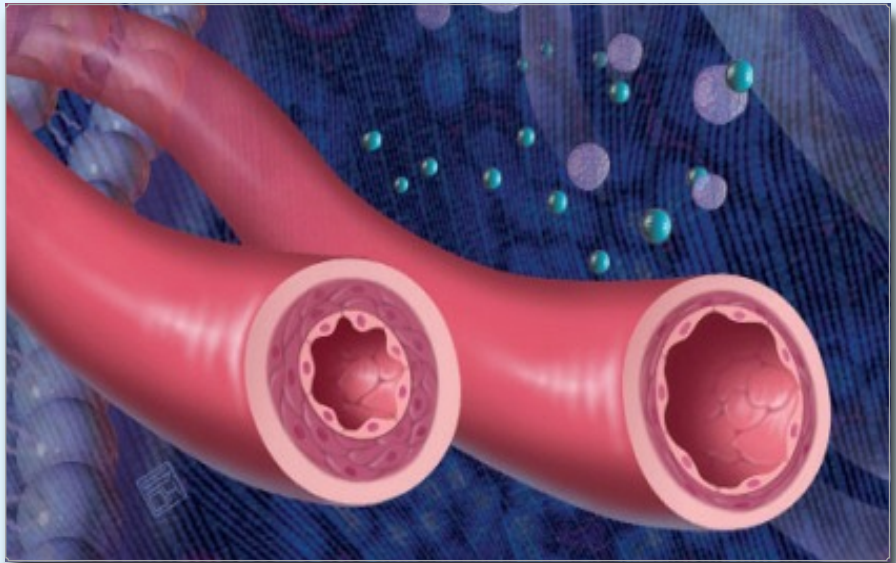
"Hypertension is the correct but chronic dysregulated response with an exaggerated outcome to the infinite insults to the blood vessel."

On previous Tuesday Minutes we've looked at how inflammation, immune dysregulation and oxidative stress are the footprints for so many diseases. I say footprints because those are the things we can see either through lab tests or patients symptoms.

Traditional medicine will treat the footprints with drugs and stop there. We obviously want to treat with lifestyle, food and nutraceuticals. By the way, you should treat the footprints.

If we treat the "inflammation" footprint, we can bring our patients relief and perhaps even prevent serious life threatening diseases. Once the footprint is identified; however, the detective work begins to find the cause or source. The closer we get to the source the better the chance of completely resolving the problem.

Dr. Mark Houston embellished that theme at an 8 hour presentation on Hypertension and Dyslipidemia. Hypertension for many of us



seems a little boring but the reality is that once hypertension is detected damage has and is occurring.

As a specialist in hypertension, Dr. Houston shared that "Endothelial dysfunction and microvascular smooth muscle dysfunction precede the development of hypertension by decades." He emphasized that, "Hypertension is a marker of vascular disease. Hypertension is not a disease; it is the correct but chronic dysregulated response with an exaggerated outcome of the infinite insults to the blood vessel with the

subsequent environmental-gene expression patterns in which the vascular system is the innocent bystander resulting in vasoconstriction and hypertension."

He discussed that the blood vessels are exposed to an infinite amount of insults but there are three finite responses: inflammation, immune dysregulation and excess or over oxidation. He went on to say although we were discussing the endothelial membrane, the same principles apply to membranes in general. So whatever we do to heal the endothelium membrane

of the blood vessels also applies to the gut membrane, the blood brain barrier membrane as well as individual cell membranes.

Dr. Houston simplified a lot of sophisticated biochemistry with a slide of a teeter-totter balanced on a log, one end being the hormone angiotensin II and on the other end the cellular signaling molecule nitric oxide. Angiotensin II is the dark side of the equation. Angiotensin II causes blood vessel constriction, hypertension, inflammation, increases oxidative stress, vascular immune dysfunction, thrombosis, enhances growth promotion and is proatherogenic. Angiotensin II can also affect the immune response by increasing IL-17 levels which are often associated with autoimmune conditions.

Pharmaceutically, one of the therapeutic goals in hypertension is to reduce angiotensin II. Dr. Jonathon Wright taught me years ago one way to reduce angiotensin II was to make sure you have optimal levels of vitamin D. Another way to reduce the level of a substance is to block the receptors on the cell. Foods and nutrients that are angiotensin II receptor agonists are: potassium, fiber, garlic, vitamin C, vitamin B-6, Coenzyme Q10, celery, and gamma linolenic acid.

The other half of the equation is nitric oxide. Nitric oxide is vasodilatory, antihypertensive, anti-inflammatory, reduces oxidative stress, reduces vascular immune dysregulation and thrombosis and is anti-atherogenic. As you can see nitric oxide is like the holy grail in any blood pressure discussion. It covers all 3 finite responses: it's anti-inflammatory, anti-oxidative stress and immune regulating. It's the endothelium membrane that is instrumental in releasing nitric oxide called endothelium nitric oxide or eNOS.

eNOS is a gas released at the endothelium membrane and among other things relaxes the arteries allowing the pressure in the arteries to subside. Dr. Houston spent several years working with Biotics doing clinical trials to find the optimal ratio of ingredients to increase eNOS naturally. He found a specific combination of taurine, grape seed extract, vitamins C, D, B6, biotin and magnesium to be the most effective and Bio-CardioSirt BP was created. In a clinical trial, one scoop of Bio-CardioSirt BP a day reduced blood pressure 13 / 11 in 4 weeks.

Other things that increase nitric oxide are dark green leafy vegetables. Personally I think one of the reasons the green leafy vegetables, magnesium and potassium are so effective to lower blood pressure is that they assist the body to return to a state of alkalinity. We've discussed relative acidity in the past and how it places the body under oxidative stress as well as robs minerals needed for basic physiological function which causes further stress.

The three big keys for assisting the body to return to optimal pH are NitroGreens, Potassium-HP with Magnesium and Bio-D-Mulsion Forte.

I've got an extensive handout for you that include the products and protocols Dr. Houston developed for Biotics. You can see them in yellow. I have synthesized the notes with things I have learned from Dr. Vasquez and Dr. Harry Eidenier. At the end of the handout, you will note the testing possibilities for inflammation, oxidative stress and immune dysregulation. Most of these lab tests will not be familiar to you but will serve as a reference for further investigation.

Thanks for reading this week's edition. I'll see you next Tuesday.