Horsechestnut Seed (Aesculus Hippocastanum): A Proven Natural Treatment for Chronic Venous Insufficiency

By James P. Meschino, DC, MS

Introduction

The horsechestnut tree, native to Asia and northern Greece, is now cultivated in many areas of Europe and North America, and is grown primarily as an ornamental tree in parks and gardens. Unlike true chestnuts, the seeds (nuts) of the horsechestnut are not edible, but an extract containing active ingredients from the seed has been used for a few centuries in Germany for the treatment of chronic venous insufficiency. In fact, in Germany, more prescriptions are written for the oral, standardized horsechestnut extract as a treatment for chronic venous insufficiency than for any other drug or supplement. Numerous clinical trials have documented the efficacy of horsechestnut supplementation in the treatment of chronic venous insufficiency and related circulatory problems.

The major active constituents of horsechestnut are saponins, referred to as escin, which is a complex and unique mixture of over 30 individual pentacyclic triterpene diester glycosides. Other key constituents include flavonoids, sterols and lipids.

Clinical Application and Mechanism of Action

Chronic venous insufficiency is an imprecise term that refers to the impairment of venous return, usually from the legs, and often involves edema (swelling), leg pain, fatigue and/or heaviness upon standing or walking, and possibly skin discoloration. Other terms used to describe the same condition include deep vein incompetence, peripheral venous incompetence and early-stage varicose veins. This condition has been reported to affect 10 percent to 15 percent of men and 20 percent to 25 percent of women. Numerous clinical trials have shown that the oral administration of the standardized grade of horsechestnut seed can effectively treat chronic venous insufficiency in a large percentage of cases. Many double-blind, placebo-controlled studies reveal that it has proven to be effective on a consistent basis and can outperform the use of compression stockings, which are often used in the management of this condition.
Studies reveal that horsechestnut supplementation objectively improves venous tone, without arterial constriction or a rise in blood pressure. It has been shown to reduce leg volume in these patients versus the placebo group, and has outperformed use of support stockings in regards to this outcome. Overall, patients consistently report reduced leg pain, swelling, heaviness, pain, and fatigue with the use of horsechestnut seed extract.\textsuperscript{1,4,7,9,10,11,12,13,14,15}

As for the mechanism of action, the escin component (triterpene saponins) of horsechestnut extract acts by reducing capillary permeability to water, essentially helping to seal off the escape of water out of veins into the extravascular space. It has also been shown to improve tone of connective tissues within veins and block the breakdown of ground substance (proteoglycans), which provides important structural integrity to veins. Horsechestnut seed ingredients have been shown to inhibit the enzymes that break down these important proteoglycans and to inhibit lysosomal enzymes and hyaluronidase enzyme, both of which are known to break down tissue structure. Horsechestnut seed extract has also been shown to possess antioxidant properties. The combination of these effects accounts for the ability of this supplement to reduce localized edema and inflammation, increase venous pressure and flow, reduce venous deformity and distension, and reduce leg, ankle and foot circumference in afflicted individuals.

Horsechestnut supplementation was also shown to be successful in healthy subjects studied during a 15-hour air flight. Subjects had reduced foot and ankle edema and other measurements related to venous congestion than did the placebo group.\textsuperscript{1,6,8}

**Dosage and Standardized Grade**

For chronic venous insufficiency (and other related venous and vascular problems mentioned above), the usual dosage is 200 mg, two to three times per day (standardized to 40 percent escin content).\textsuperscript{1} Other references cite a daily dosage of 300 mg, 2-3 times per day (standardized to 50 mg: 16 percent to 21 percent triterpene glycosides calculated as anhydrous escin per dose).\textsuperscript{7,9,16,17}

**Adverse Side-Effects, Toxicity and Contraindications**

Horsechestnut has been shown to be very nontoxic in numerous animal studies.\textsuperscript{1} The American Medical Association published a noteworthy review article of horsechestnut in the *Archives of Dermatology*, highlighting the evidence to support the use of this supplement in cases of chronic venous insufficiency. In regards to reported side-effects, the researchers indicate that minor side-effects occurred in 0.95 percent to 3
percent of subjects taking horsechestnut seed extract in the various studies that met the inclusion criteria. These minor side-effects included stomach upset, calf spasm, dizziness, nausea, headache, itching, and allergic skin reactions. Overall, side-effects from horsechestnut seed extract are mild and infrequent, and patient tolerance is regarded as excellent by some researchers. However, based on reports of worsening kidney function in patients with existing kidney disease who received intravenous escin, this supplement should be avoided by anyone with known kidney disease. Patients with liver disease or bleeding disorders should also avoid this supplement, according to some health experts.

Drug-Nutrient Interactions

Experimental evidence suggests that horsechestnut seed extract may potentiate the effects of anticoagulant drugs. However, there are no reports of bleeding disorders in humans to date, in subjects using horsechestnut seed extract with or without concurrent anticoagulant therapy. Practitioners and patients should be mindful of this potential interaction, but it is not considered to be a contraindication to the use of horsechestnut seed extract at this time.

Summary

Many patients suffer from chronic venous insufficiency to varying degrees and actively seek help for this condition from health care professionals. Although the evidence to support the oral use of a standardized grade of horsechestnut in these conditions is substantial, few medical practitioners in North America appear to be familiar with these studies. As such, many patients are introduced to the benefits of this natural remedy by alternative health care providers. Hopefully, this report will serve to enlighten a greater number of chiropractors and other alternative providers about the efficacy of horsechestnut, and enable them to recommend its use in a safe, responsible manner as a treatment aid in cases of chronic venous insufficiency.

References

5. Guillaume M, Padioleau F. Venotonic effect, vascular protection, anti-inflammatory and free radical


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