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**THE USE AND EFFECTS OF TRADITIONAL MEDICINE**  
**(MAIDEN HAIR TREE) IN NIGERIA FOR THE TREATMENT OF**  
**VASCULAR PATHOLOGIES**

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The maiden hair tree (*Ginkgo biloba* or *Ginkgo macrophylla*) have been used for prophylactic and therapeutic effects for a long time in Nigerian traditional medicine and Africa in general. Usage of a variety of commercially available maiden hair tree products often of uncertain standardization is increasing in Nigeria.

Peripheral Artery Disease (PAD) is due largely to arterial affections which cause stenosis, ischaemia and blockage of the arteries in the lower extremities. This results in reduced blood flow through the vessels causing discomfort and impaired walking. The available medications are few and usually have serious side effects thus limiting their usage and application. The extract from the maiden hair tree does provide a cheaper and safer alternative for Nigerians.

Maiden hair tree leaf extract is available in multiple forms and is used as food, supplements, and herbal medicine in Nigeria. Maiden hair tree is used by many herbalists as a remedy for peripheral artery disease, stroke, cerebrovascular degeneration, insufficient blood flow and to moderate the undesirable effects of some cancer therapies. Taking maiden hair tree can also reduce the risk of having to undergo surgery in patients with PAD. The phytochemicals in maiden hair tree preparations that are considered to be pharmacologically active are the terpenoids and flavonoids. The ginkgolic acids present in maiden hair tree have allergic, immunotoxic, and other unpleasant effects, and maiden hair tree preparations should be well prepared and monitored to avoid preventable side effects. Trials on the standardized extracts of maiden hair tree have shown that the primary clinical targets are the cardiovascular system, the central nervous system and the neuroendocrine system. Maiden hair tree other clinical effects include endothelium relaxation.

Maiden hair tree is reported to increase cerebral and peripheral blood circulation, reduces vascular permeability, causes vascular contraction, improves venous tone, inhibits phosphodiesterase type 4, relaxes vascular smooth muscle, reduces platelet aggregation, decreases systolic and diastolic blood pressure. Maiden hair tree has a broad spectrum of pharmacological activities that could be useful for cardiovascular protection as well as treating cognitive affection, raynauds disease, liver and renal injury, hypoxia and post phlebitic syndrome. The cardio-protective effects of maiden hair tree act via

endothelium relaxation and anti-thrombocytic activities and increases blood flow through the release of nitric oxide and prostaglandins.

Therefore, combination therapy using a maiden hair tree extract and with other anti-platelet agents or statins is to be recommended to enhance anti-atherosclerotic and anti-thrombotic efficacy without increasing side effects such as bleeding tendency. More studies with chronic vascular diseases events as a primary objective are needed to confirm these beneficial effects of Maiden hair tree extracts.

**Materials and methods:** Participants being older adults mean age  $60 \pm 8$  years with claudication symptoms of PAD were enrolled in this study. The patients included 20 men and 20 women, 25% of the men had severe atherosclerosis of peripheral vessels, 25% other men had hypertension, 25% other men also had diabetes mellitus type II while the remaining 25% had numerous arterial and venous pathologies as complications of other diseases (varicose veins, Post –thrombophlebytic syndrome etc.). In the women patients they had the same complications as the men had and in about the same percentage. A test to show improvement in pain-free walking distance among adults with severe atherosclerosis of peripheral vessels with PAD was conducted in Nigeria with the eligible participants.

**Result.** After 9 months, Maiden hair tree produced an increase in treadmill walking time and flow-mediated vasodilation. The patients with severe atherosclerosis showed improvement in physical activity and pain reduction. The patients with hypertension showed decrease of blood pressure (about 10-15 mm systolic and 5-10 mm diastolic) and sometimes normalization of BP. The patients with diabetes mellitus had detectable reduction of symptoms of vasopathies and vascular disturbances. The patients with venous and arterial pathologies noted improved blood flow and reduced vascular symptoms by ultrasound investigation. These data shows the use of maiden hair tree as an effective therapy for PAD, although a longer duration of use should be considered for better results.

**Conclusion.** Maiden hair tree and its extracts have been used in Nigeria to treat all kinds of vasopathies especially those associated with PAD, cerebrovascular insufficiencies and dementia. We can offer this method for treatment of patient with different vascular pathologies. The cheapness of maiden hair tree makes it better for general usage among all socio-economic classes of society including the poorest people in society.