



Is Traditional Chinese Medicine, “*Radix Ilicis Pubescentis*” Possible for Treating Cardiovascular Disease?

Siukan Law^{1*}, Albert Wingnang Leung², Chuanshan Xu³

¹Department of Science, School of Science and Technology, The Open University of Hong Kong, Ho Man Tin, Kowloon, Hong Kong

²School of Graduate Studies, Lingnan University, Tuen Mun, Hong Kong

³Key Laboratory of Molecular Target and Clinical Pharmacology, State Key Laboratory of Respiratory Disease, School of Pharmaceutical Sciences & Fifth Affiliated Hospital, Guangzhou Medical University, Guangzhou 511436, China

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Dear Editor,

Cardiovascular disease (CVD) is one of the most common diseases threatening human health worldwide. The fatty plaques occluded in coronary arteries make it narrow, stiff as well as less elastic, which results in irregular blood circulation, insufficient oxygen, and nutrient supply, subsequently causing damage to the heart muscle. According to the World Health Organization (WHO) data, 17.9 million people are dying each year from CVD that has an estimated 31% of all deaths worldwide, and the situation is continuously increased [1].

Radix Ilicis Pubescentis belongs to the “*Aquifoliaceae*” family and “Invigorating blood” category in the traditional Chinese medicine (TCM) theory. It is bitter, acrid, and astringent in taste. The nature of *Radix Ilicis Pubescentis* is slightly cold, nearly neutral, and entered the lung meridians. Based on the TCM theory, it can restore

the “*Qi*”, regulate the blood flow to homeostasis, and unblock the blood channels to improve obstruction in the chest as well as the heart. This also to clear heat, remove toxicity, dredge meridians, and stop a cough in the lung [2].

Accumulating evidence shows that the *Radix Ilicis Pubescentis* fights against brain disease and cardiovascular disease. Miao MS et al. reported that flavonoids in *Radix Ilicis Pubescentis* had a protective function of cerebral ischemia because it enhanced oxygen-free radical scavenging and reduced pathological alterations in the brain through mouse models. They proved *Radix Ilicis Pubescentis* had the function to clear heat, eliminate evils, and promote blood circulation. The flavonoids in *Radix Ilicis Pubescentis* could regulate blood circulation, dissipate blood stasis to prevent and treat cardiovascular or cerebrovascular diseases [3]. Yan X et al. used the cerebral ischemia-reper-

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*Corresponding Author: Siukan Law

Department of Science, School of Science and Technology, The Open University of Hong Kong, Ho Man Tin, Kowloon, Hong Kong
Email: siukanlaw@hotmail.com

fusion models to discover that flavonoids from *Radix Ilicis Pubescentis* could not only reduce the damage of brain nerve cells in the hippocampus and cortex, significantly decrease the content of NO in brain homogenate, deactivate the nitric oxide synthase (NOS), and also increase the activity of ATP enzyme. Moreover, *Radix Ilicis Pubescentis* was found to suppress neuronal apoptosis in the brain by decreasing the expression of the Bax gene and increasing the expression of the Bcl-2 gene. It was sufficiently improved capillary blood flow, oxygen supplies to reduce the degree of damage to capillary endothelial cells in the hypoxic and ischemic brain, prevented blood from occluded in the brain, and promoted the reconstruction of neural circuits [4].

Recently, a few studies on the TCM formulation of *Radix Ilicis Pubescentis* showed that a TCM composition consisting of 10-30 g *Radix Ilicis Pubescentis*, 3-9 g *Radix Ginseng*, and 3-9 g *Radix Notoginseng* had a significant role in treating coronary heart disease in the mouse experiments. The TCM composition had an obvious anti-stress and anti-arrhythmic effect on heart disease, wherein the ethanol extract was much strong than the water extract. These results indicated that three medical plant extracts were pharmacologically active in invigorating “Qi”, promoting blood circulation, and regulating “Qi” to disperse stagnation [5]. Wang Y et al. reported another TCM formulations including 20-30 g *Radix Ilicis Pubescentis*, 18-36 g *Radix Salviae Miltiorrhizae*, 9-17 g *Rhizoma Chuanxiong*, 12-24 g *Radix Astragali*, 15-20 g *Semen Persicae*, 15-20g *Pheretima*, 10-20g

Fructus Crataegi, 15-20 g *Moschus*, 10-20 g *Hirudo*, 6-12 g *Eupolyphaga Seu Steleophaga*, and 10-20 g *Radix Notoginseng* for treating the heart and cerebral vascular diseases. The TCM formulation could restore “Qi”, activate blood, remove blood stasis, and clear the blood clots in channels as well as the collaterals. In the clinical studies, there were 132 patients (62 men, and 60 females) respectively. Age was ranged from 46 to 65 years old and the average age was 53 years old. 105 patients were recovered after taken treatment in 3 months. The effective rate of TCM formulation is higher than 97.73% for cardiovascular and cerebrovascular diseases [6].

The above information demonstrates that Chinese medicine, “*Radix Ilicis Pubescentis*” could be a potential candidate for treating cardiovascular disease especially through combining with the usage of other Chinese medicines to enhance its functions. However, it must overcome the side effect of loss in memory and self-learning. Much more work must be done for the safety assessment of *Radix Ilicis Pubescentis* before the wide application in clinical settings.

Conflict of interests

The authors have no conflicts of interest to disclose.

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