RESEARCH ARTICLE

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Comparative study of coagulation effect of *Diospyros Malabarica*

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ABSTRACT

In most of the Ayurvedic remedies, *Diospyros malabarica* is used to obtain *Rakthasthambana* (coagulation) effect. The effect of leaves and stem bark extract of *Diospyros malabarica* on human blood coagulation was investigated using Lee and White method at Gampaha Wickramarachchi Ayurveda Institute in Sri Lanka. A total of 20 healthy individuals representing both sex were included in the study. For the test group, three tubes containing a volume of 0.5mL of stem bark extract were allocated, and the sap was replaced with normal saline for the tubes of the control group. A volume of 1mL of drawn blood was quickly added for every six tubes in situ, and all were incubated in a water bath at 37°C. Every tube of two groups was observed carefully for a clot to measure the average clotting time of each group separately. Above procedure was repeated to all the fresh juice samples of stem bark and the leaves of *Diospyros malabarica*. The statistically significant reduction of average clotting time has proved that the stem bark of *Diospyros malabarica* and leaves of *Diospyros malabarica* have a highly significant effect on clotting cascade.

Key words: *Rakthasthambana*, Clotting time, *Diospyros malabarica*

1. INTRODUCTION

Diospyros malabarica is a typical Ayurvedic herb which can be used to treat many kinds of diseases in Ayurvedic aspects. And when it refers to the classical categorization; it is placed in *Nyagrodadi Ghana* in *Susrutha Samhitha* (Trikamji, 2002) and *Caraka Samhitha* (Trikamji, 2001) refers to *Sandhaniya Ghana*. *Sandhaniya* refers to many meanings in Ayurveda. Mainly it deals with hemostasis or *Rakthasthambana*. And it is the first method which is used in the coagulation pathway.

Rakthasthambana is a process which causes bleeding to stop, meaning to keep blood within a damaged blood vessel. And also it is the first stage of wound healing.

According to Ayurveda, hemostasis is done by *Rakthastambana dravyas*. They have a coagulating effect. It is due to their *Kashaya Rasa* (Astringent taste), *Laghuguna* (lightness), *Rukshaguna* (dryness), *Sheethaveerya* (cold in potency) and *Katuvipaka* (Pungent in biotransformation). *Rakthasthambana dravyas* are *Madhuka (Madhucalongifolia), Madhuparni (Tinosporacordifolia), Prusniparni (Urariapicta), Ambasthaka, Samanga (Rubiacordifolia), Mocarasa (Bombaxceiba), Dhataki (Woodfordiafruticosa), Lodhra (Symplocosracemosa), Priyangu (Callicarpamacrophylla), Katphala (Myricanagi)* (Moorthy, 2006).

These *Rakthasthambana dravyas* possessing *Kashaya (Astringent), Madhura (Sweet), Tikta (Bitter)* properties helps in wound healing. In addition to that, *Thinduka* is under the *Nyagrodhadi Gana* and *Udardaprashamana Gana* (Trikamji, 2001).

For further evaluation of Ayurvedic remedies, the drugs must be used in purposely. When a drug is being used, it must be proven the attributes or effectiveness of the drug. A drug cannot be used as it is. A scientifically proved language should be prioritized in the modern world. Ayurvedic medicine can be added some value by conducting such research-based evaluations.

There are a lot of formulations and remedies which could be found the *Diospyros malabarica* in the purpose of hemostatic effect. Even though it is categorized as a *Rakthasthambana* dravya in ancient Ayurvedic texts, the effect of it on blood coagulation hasn't proved. Therefore for better usage of this plant in a proper manner, this research was conducted to evaluate the actual coagulation effect of the *Diospyros malabarica*. And there are some differences in the coagulation effect of different plant parts. Ultimately it could be identified as the best plant part to be used in the purpose of *Rakthasthambana*.

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