

A LITERARY REVIEW ON MAKSHIKA (Copper pyrite)

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ABSTRACT

Rasashastra (Science of Mercury) is a unique branch of *Ayurveda* which deals with the pharmaceuticals of medicines out of minerals, metals, animal products etc. *Makshika* (Copper pyrite) is one such mineral included among eight *Maharasa* (group of eight minerals) and used since time immemorial in treating various diseases like *pandu* (Anemia), *kushta* (Skin ailments), *prameha* (Diabetes) etc. *Makshika* (Copper pyrite) is the most abundant copper bearing mineral whose references are scattered in various *Rasashastra* texts like *Rasa Tarangini*, *Rasa Ratna Samuchaya*, *Rasendra Purana*, *Anandakanda*, *Rasarnava*, and so on. The current article is to highlight different references of *Makshika* (Copper pyrite) in *Rasashastra* (Science of Mercury) texts under one roof.

Keywords: *Makshika*, *Shodhana*, *Marana*, *Amritikarana*

INTRODUCTION

Rasashastra (Science of Mercury) is described as *Ayurvedic* pharmaceuticals which mainly deals with drugs of minerals, metals, animal and plant origin, their pharmaceuticals and their therapeutic uses. Various pharmaceutical procedures such as *Shodhana* (Purification), *Marana* (incineration), *Satwa patana* (extraction of the essence), *Amritikarana* (to enhance quality of medicine) etc. are employed to make these drugs deemed to be administered internally. *Makshika* (Copper pyrite) is one of the *Maharasa* (group of eight minerals) which is said as *Prana* (life) of *Parada* (Mercury). As explained in *Rasa Ratna Samuchaya* it acts as *Rasayana* (immune modulator), *vrishya* (aphrodisiac) and cures various diseases¹. *Makshika* has great importance in both *deha vada* (medicinal purpose) and *dhatu vada* (conversion of lower metals into higher

metals). But the available references are scattered in different texts and there is a need to gather them at one place for superior understanding and the proper usage of the drug for the betterment of mankind. Hence an effort is made in this regard to gather all the available references of *Makshika* in this review article.

Mythological origin of Makshika (Copper pyrite):

The mythological origin of *Makshika* (Copper pyrite) is explained as follows:

- *Makshika* (Copper pyrite) is said to have its origin from the drops of blood falling from the wound in the injured sole of Lord Krishna. The wound in the sole was caused by an arrow arched by a hunter by confusion with the animal when he was in *yoganidra* (deep sleep) in the forest, after completing his duty in *Mahabharata*.²
- The *Kanchana Rasa* i.e *Makshika* (Copper pyrite)

Anti-Oxidant effects of *Swarnamakshika Bhasma* : A Experimental Study

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ABSTRACT

Shudhana of *Swarnamakshika* carried out by *Bharjana* in *Uranda Tila*. *Marana* of *Swarnamakshika* by finely powdered *Shuddha Swarnamakshika* was taken in a *Khatvapantra*. Then equal quantity of *Shuddha Gandhaka* was added and triturated together till they become homogenous. To this mixture 100ml of *Jambhira Rasa* was added triturated well till it becomes semisolid consistency. The paste were made into shape of *Chakrikas* weighing 25gm and 8cm uniformly and kept for drying. Subjecting into 5 required number of *Varahaputas*. The present day lifestyle and food habits have increased the production of free radicals. These cytotoxic free radicals not only raise the oxidative stress but also play an important role in the immune-system dysfunction due to which the mankind is prone to various major ailments and it is now proved that diseases like *Pranasha*, *Pandu*, *Ushavyadhi* etc. are free radical mediated ones. To tackle these free radicals our body needs antioxidants. An antioxidant is a molecule which is capable of inhibiting the oxidation of other molecules. Oxidation reactions can produce free radicals which in turn start chain reactions that damage cells. Antioxidants terminate these chain reactions by removing free radical intermediates and inhibit other oxidation reactions. Many herbal drugs and compound herbal preparations have been screened for their antioxidant and immuno-modulatory properties but still there is a need for effective antioxidants. This dearth and also the fact that *Swarnamakshika* is being used in treating many of the free radical mediated diseases prompted us to take the present study which aims to validate the antioxidant effect of *Swarnamakshika Bhasma* scientifically and explain its probable mode of action at the cellular level.

Key words: *Makshika*, *Shudhana*, *Marana*, *Amritkarana*, *Immunomodulatory*.

INTRODUCTION

Free radicals and other reactive oxygen species are derived either from normal essential metabolic processes in the human body (endogenous) or from external sources (exogenous). Free radical formation occurs continuously in the cells as a consequence of both enzymatic and non-enzymatic reactions. Enzymatic reactions which serve as sources of free

radicals include those involved in the respiratory chain, in phagocytosis, in prostaglandin synthesis and in the cytochrome P450 system. Free radicals also arise in non-enzymatic reactions of oxygen with organic compounds as well as those initiated by ionizing radiations. An immuno-modulator is a substance which has an effect on the immune system.

Rasayana, listed as a class in the texts of traditional Ayurvedic medicine literature, consists of a number of drugs reputed to promote physical and mental health, improve the ojus and defense mechanisms of the body and enhance longevity.

In Ayurveda particularly *Rasayana* is recommended for Immune system. Many herbs, minerals, metals, gem stones and some poisonous drugs also having property of *Rasayana*. In my studies proved that *Swarnamakshika* is having anti-oxidant property effect, Keeping this in mind this a experimental work is started.

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Immunomodulatory effects of *Swarnamakshika Bhasma* : A Experimental Study

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ABSTRACT

The present day lifestyle and food habits have increased the production of free radicals. These cytotoxic free radicals not only raise the oxidative stress but also play an important role in the immune-system dysfunction due to which the mankind is prone to various major ailments and it is now proved that diseases like *Pranishya*, *Pandu*, *Vatavyadhi* etc. are free radical mediated ones. To tackle these free radicals our body needs antioxidants. An antioxidant is a molecule which is capable of inhibiting the oxidation of other molecules. Oxidation reactions can produce free radicals which in turn start chain reactions that damage cells. Antioxidants terminate these chain reactions by removing free radical intermediates and inhibit other oxidation reactions. Many herbals drugs and compound herbal preparations have been screened for their antioxidant and Immuno modulatory properties but still there is a need for effective antioxidants. This death and also the fact that *Swarnamakshika* is being used in treating many of the free radical mediated diseases prompted us to take the present study which aims to validate the immuno-modulatory effect of *Swarnamakshika Bhasma* scientifically and explain its probable mode of action at the cellular level.

Key words: *Makshika, Shodhanva, Marana, Anritikarana, Immunomodulatory.*

INTRODUCTION

Immunomodulators are biological entities exerts effect by improving defense mechanism against disease and that have the capability to suppress an immune response. Immunomodulation is a process which can alter the immune system of an organism by interfering with its functions and results in an enhancement of immune reactions either in

immunostimulant or immunosuppressant. The concept of '*Rasayana*' is based on related principles.^[1] *Rasayana*, listed as a class in the texts of traditional Ayurvedic medicine literature, consists of a number of drugs reputed to promote physical and mental health, improve the ojas and defense mechanisms of the body and enhance longevity. In Ayurveda particularly *Rasayana* is recommended for Immune system. Many herbs, minerals, metals, gem stones and some poisonous drugs also having property of *Rasayana*. In my studies proved that *Swarnamakshika* is having immunomodulatory and anti-oxidant property effect, Keeping this in mind this a experimental work is started.

Free radicals and other reactive oxygen species are derived either from normal essential metabolic processes in the human body (endogenous) or from external sources (exogenous). Free radical formation occurs continuously in the cells as a consequence of both enzymatic and non-enzymatic reactions. Enzymatic reactions which serve as sources of free

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Qualitative assessment of *Swarnamakshika Bhasma* (Copper Pyrite) using Nambhuri Phase Spot Test

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ABSTRACT

Swarnamakshika is one among *Maharasa* (Great minerals), on reviewing the *Ayurvedic* classics, it is evident that therapeutic use of *Swarnamakshika* (Copper Pyrite) has been in practice since *samhita kala* (300B C- 600 B.C) period. *Swarnamakshika* (Copper Pyrite) used since time immemorial in treating various diseases like *pandu* (Anemia), *kushta* (Skin ailments), *prameha* (Diabetes) and it is best *Rasayana* (Immuno-modulatory) etc. *Swarna Makshika* (Copper pyrite) is the most abundant copper bearing mineral. *Swarnamakshika* (Copper Pyrite) was prepared according to the *Ayurvedic* classics and subjected to various *bhasma parikshas* (Powder test) as explained in *Rasashastra* (Indian Alchemy) text and also including the Namburi Phased Spot Test one of the qualitative tests described for various *Ayurvedic* preparations of *Bhasma* (Powder). NPST helps differentiate between purity of the sample, and thus identify, various *bhasmas*. It depends upon the pattern of the spot, which develops after a specific chemical reaction. Sample of *Swarna Makshika Bhasma*, (*Swarnamakshika* powder) which was tested with NPST the *bhasmas* (Ashes) prepared in our college, produced the most accurate results.

Key words: NPST, *Swarnamakshika Bhasma*, Copper pyrite, Namburi Phased Spot Test.

INTRODUCTION

In Indian chemistry the minerals of medicinal value are classified as *Rasa*, *Maharasa*, *Uparasa*, *Sadharana rasa* (Group of minerals), etc. Every member of these different groups, after purification and conversion into a colloidal form, may be used individually and independently or in a combined form. The members of the *Maharasa* group specially have their

importance and their *Bhasmas* (Ashes) are used independently and their use of compounds also exists. *Swarnamakshika* (Copper Pyrite) is one among *Maharasa*s (group of mineral), which has given very much importance in both *Dhatuvada* (stage of conversion of lower metals into higher metal) and *Dehavada* (stage of medicine preparation). It is a compound of copper, iron and sulphur along with so many toxic admixtures. *Swarnamakshika* (copper pyrite) in its *bhasma* form offers an improved state of *Tamra bhasma* (copper) pretreated by *Gandhaka* (sulphur) and *Louha* (iron) in its original form. It has been explained that if used without *shodhana* (purification) causes *Akshivikaras* (eye disease), *Mandagni* (undigestion), *Kushta* (Skin ailments) etc. disorders. Hence *shodhana* (purification) is necessary for it. Branch of *Ayurveda* However, in this competitive, commercialized world the quality of a *bhasma* (ashes) is always open to question to us. For *bhasma* (ashes) quality assessment, various *bhasma parikshas* (tests) have been described in our

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QUALITATIVE ASSESSMENT OF PARADA BHASMA (CALX) USING NAMBURI PHASED SPOT TEST

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ABSTRACT

Parada bhasma (mercury calx) is one of the famous formulations mentioned in Rasashastra literatures. It has its own specific therapeutic indication in the field of Ayurvedic Indian alchemy. The Parada bhasma was prepared as per the Rasaratnakara text (text book related to Indian alchemy) and subjected to various bhasma parkishas (examination methods of calx) including "Namburi phased spot test (NPST)* analysis to check the quality of calx prepared. NPST has its own importance in identifying the genuinity of different bhasmas (calx) qualitatively. The bhasma prepared was black in colour & has passed all the classical bhasma parikshas & NPST analysis showed desired results.

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