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ROLE OF ABHRAK BHASMA AS RASAYAN AUSHADHI WITH SPECIAL REFERENCE TO ANTIAGING PROPERTIES

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ABSTRACT

Aging is a process that every individual goes through which is marked by physical, psychological and social changes. Management of aging is one of the most actively researched areas in biology. Ayurvedic preparations such as Abhrak Bhasma (AB) have been used for improving longevity and regenerative therapy as well as in treating various ailments. Bhasma, in general, have properties because of their ability to penetrate into the smallest units in the body and have therapeutic benefits when administered correctly. Abhrak Bhasma is one such drug. **Aim:** To study the role of Abhrak Bhasma as Rasayan Aushadhi. **Material:** Research works carried out on Abhrak Bhasma and Formulations containing Abhrak bhasma from various Scholarly Articles. **Conclusion:** Abhrak Bhasma exhibits a large number of properties that are seen in Rasayana drugs and can be used in the various health issues that are associated with Geriatric changes. It can be used to prevent and treat oxidative stress, depleted immunity, reduced haemoglobin production, decreased sperm count and other issues such as worm infestation, hyperglycaemia, etc. The present review provides properties of Abhrak Bhasma as Rasayan Aushadhi with reference to antiaging property and also to provide insights into the future research in this area.

KEYWORDS: Abhrak Bhasma, Aging, Rasayana, Jara.

INTRODUCTION

Aging has been defined as the total sum of physiological changes that progressively leads to the death of the individual. It is also defined as the intrinsic, inevitable, and irreversible age-associated loss of viability that render us more susceptible to a number of diseases and death or a progressive functional decline of physiological function and a decrease in fecundity with age.[1][2][3][4]

According to Ayurveda, Jara also called as Vardhakya (aging) is defined as that which has become old by the act of wearing out. Jara/aging is not a disease but a natural phenomenon like hunger, thirst or sleep. In the theory of natural destructions (Swabhavoparamavada), Charaka describes that there is a causative factor for the manifestation of a being but there is no cause for the cessation of this manifestation, since death following birth is a state of natural flow.[5][6]

The term Jara denotes four entities: Nityaga which signifies continuation of consciousness, Dhari which denotes the factor(s) that prevent the body from Jara/aging, Jeevitam which represents the act of keeping alive and Anubandha that denotes transmigration of the body.[5][6]

According to Charaka Samhita, old age spans from 60 years of age to 100 years and is marked by diminution of the dhatus, strength of senses, energy, sexual capacity, valour, power of understanding, retention, memorizing, speech and ability to analyse facts. There is general debility and all these features are attributed to dominance of vata.[7] Rasayana therapy is touted as the treatment in Jara[8] as it strengthens the dhatus, indriyas and improves general health. Rasayana is a regimen or substance that improves the quality of Rasa and circulates it to the smallest parts of our body.

Bhasma, in general, have Rasayana properties because of their ability to penetrate into the smallest units in the body and have therapeutic benefits when administered correctly. Abhrak Bhasma have a better Rasayana effect.

Abhrak Bhasma

Bhasma are a type of herbometallic ayurvedic preparations that involve repeated incineration of various metals/or their ores mixed with decoction of various herbal products in a puta (repeating cycles) system of incineration. These preparations are often considered

nanomedicines, as the components of final product generally possess the size in the nanometer range.[9] Typically, any bhasma is prepared through Shodhana, Bhavana and Marana processes. These different levels of treatment ensure that bhasma are free from toxicity at therapeutic doses.[9]

Abhrak bhasma (AB) is a type of bhasma prepared from repeated incineration of mineral mica with decoctions of about 72 herbs. The particle size of abhrak bhasma has been shown to be in the range of 29-88 nanometers and Fe, Ca, Se, Mg and K are found to be as major constituent.[10] The quality of abhrak bhasma differs as per the number of puta performed. The sahastraputi abhrak bhasma that undergoes 1000 puta is considered to be of finest quality. Different grades of Abhrak bhasma are used in the treatment of a vast range of ailments and also as a constituent of many rejuvenating formulations.

Traditionally, it has been used in the treatment of asthma, bronchitis, bleeding disorders, cough, cold, urinary disorders, diabetes, anemia, skin diseases, splenic disorders etc. It has also been considered to have anti-aging as well as anti-infertility properties and therefore used in various rejuvenating preparations.

RASAYANA AND IT'S POSSIBLE MODE OF ACTION

Sushruta Samhita states that Rasayana chikitsa includes the effects- Vayasthapana, which Dalhana Maharshi clarifies as maintaining the lifespan of 100 years, Ayushkara, which indicates increasing the lifespan to beyond 100 years, Medhakara- to improve intellect and memory, Balakara- to improve strength, Rogaapaharanam samartham- to develop immunity and to cure diseases.[11]

The mode of action of Rasayana drugs can be explained by the following actions: Antioxidant action, Immunomodulatory action, Haemopoetic action, Anti-aging effect, Nutritive function, Neuroprotective action and Telomerase Activation.

BENEFITS OF ABHRAK BHASMA

The properties of Abhrak Bhasma include prajnyabodhi, vrushyam, ayushyam agryam, Balyam[12] which underline its Rasayana effects from an Ayurvedic perspective. It is also said to be useful in jwara, netraroga, grahani, raktapitta, pandu, kshaya, haleemaka, prameha, mutrakrchhra and it generally reduces vata and kapha.[13] It has also been indicated in shwasa, kasa and mandagni.[14]

Research works carried out on Abhrak Bhasma and formulations containing Abhrak Bhasma

ANTI-OXIDANT ACTION

1. Rambahadur Subedi et al Modulation of Oxidative Stress by Abhrak Bhasma in Drosophila melanogaster:[15] AB has been found to modulate the activity of superoxide dismutase and catalase enzymes as well as the total reduced glutathione (GSH) content. Larvae and adults feeding on diet supplemented with AB exhibit significantly lower levels of total GSH content (decrease of about 40–70% for larvae, while 31–36% for adults) and without any conclusive effect on GSH:oxidized glutathione ratio, free radical scavenging capacity, and extent of lipid peroxidation. These larvae and adults fed on diet supplemented with AB also exhibited an increase in the level of transcription of cap "n" collar C, heat shock protein 70, and catalase genes (≥1.5 fold, except in few cases).

Conclusion: Overall, AB alters various parameters linked to antioxidant machinery in D. melanogaster. The induced components may provide protection to the organism during stressful conditions.

2. Gajendra Kumar et al: Neurobehavioral Activity and Oxidative Stress in Rats with Vasanta Kusumakar Ras, which contains Abhrak Bhasma.[16]

IMMUNOMODULATORY ACTION

Tamhankar Yogesh et al - Invitro Immuno modulatory Activity of Shataputi Abhrak Bhasma in Nitro Blue Tetrazolium Test.[17]

"Shataputi Abhrak Bhasma was subjected to Invitro screening to assess its Immunomodulatory effect using the Nitroblue Tetrazolium (NBT) assay. The results were self-conclusive and indicated that Shataputi Abhrak Bhasma brings about stimulation of leucocytes in concentration dependent manner. 5% and 10% solutions of Shataputi Abhrak Bhasma stimulated 93% and 93.5% leucocytes respectively, which is an indicator of highly significant phagocytic activity.

Thus, the study revalidates the reference of Shataputi Abhrak Bhasma as a Rasayan and hence also establishing it as an Immunomodulator."

HAEMATINIC ACTION

Gigi Mathew- Evaluation of Haematinic effect of Guda Marita Abhrak bhasma-An Experimental Study.[18]

This study conducted on Wistar Albino Rats showed significant increase in RBC and Hb percentage in Rats treated with Guda Marita Abhrak Bhasma.

SPERMATOGENIC ACTION

Bhatia B. S. et al- Abhrak Bhasma treatment Ameliorates Proliferation of Germinal Epithelium after Heat Exposure in Rats.[19]

The current experiment was carried out on 32 healthy adult male albino Wistar rats divided into four groups. Sahastraputi Abhrak Bhasma, subjected to 1000 putas, was used as the test drug. On sacrificing the animals after 30 days, it was observed that control animals (G1) had normal spermatogenesis and drug-induced animals (G2) showed hyperactive tubules. Testicular hyperthermia occurred in few (G3) animals, who were subjected to 43°C for 1 h daily for four consecutive weeks, resulting in degeneration of tubules with inspissated spermatozoa (25%) leading to atrophy of the organ. 3% tubules showed disintegration, 23% were in the recovery stage while 71% tubules exhibited enhanced proliferation of germinal epithelium leading to hypertrophy and hyperplasia.

The present study reveals that the test drug can correct heat-induced male infertility and provides us with the possibility of treatment of human heat-induced oligozoospermia and azoospermia. Hence, this ayurvedic maharasa (primary mineral) can be a promising formulation as an anti-impotency fecundity drug.

OTHER STUDIES

Parashuram Teli et al on the effect of Abhrak Bhasma on in vivo CCl4 induced Hepatotoxicity and Renal Toxicity.[20]

Jayakara S study on the Anti- Helminthic effect of Abhrak Bhasma prepared with Kumari Swarasa- an Experimental Study.[21]

Raghava Rao Gundimeda study on in vivo hypoglycaemic activity of Abhrak Bhasma by Alloxan induced Diabetes method.[22]

CONCLUSION

On studying the above individual studies carried out, we can effectively conclude that Abhrak Bhasma exhibits a large number of properties that are seen in Rasayana drugs and can be used in the various health issues that are associated with Geriatric changes.

It can be used to prevent and treat oxidative stress, depleted immunity, reduced haemoglobin production, decreased sperm count and other issues such as worm infestation, hyperglycaemia, etc. There are several other studies carried out with effect to medhya properties of Abhrak Bhasma as well as its efficacy in arthritic conditions. There is scope for further studies to determine other modes of action of Rasayana aushadhi and mode of action of Abhrak Bhasma itself. Such researches are required to validate Ayurvedic preparations and their therapeutic benefits.

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