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AN APPRAISAL OF THERAPEUTIC IMPLICATIONS OF KUMAR KALYANA RASA IN PAEDIATRIC DISORDERS

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ABSTRACT

Kumarkalyana Rasa (KKR) is a classical herbo-mineral formulation described in authoritative Ayurvedic texts such as *Bhaishajya Ratnavali* under *Balrogadhikara* (pediatric disorders). It has been traditionally used to promote overall growth, immunity, and vitality in children, and to manage conditions like fever, respiratory disorders, anaemia, malnutrition, and developmental weakness. The formulation includes *Rasasindura*, *Mouktik Bhasma*, *Suvarna Bhasma*, *Abhraka Bhasma*, *Lauha Bhasma*, and *Suvarnamakshika Bhasma*, triturated with *Kumari Swarasa*. Modern pharmacological studies suggest its adaptogenic, immunomodulatory, hepatoprotective, hematinic, and neurotonic potential. This review aims to summarize the therapeutic indications, pharmacological properties, and safety profile of Kumarkalyana Rasa, integrating traditional Ayurvedic perspectives with contemporary scientific evidence.

KEYWORDS: Kumarkalyana Rasa, paediatric Ayurveda, herbo-mineral formulation, immunostimulant, Rasasindura, Suvarna Bhasma, Rasayana, toxicity.

INTRODUCTION

Ayurveda emphasizes the eradication of diseases from their root cause while maintaining the holistic balance of the body and mind. It advocates for therapeutic agents that not only cure but also strengthen the body without adverse effects. According to *Charaka Samhita*, the metabolism of drugs depends upon *Bhautikagni* (enzymes) in the liver and *Dhatvagni* in tissues, which determine the assimilation and transformation of substances within the body.[1] Pharmacologically, a drug must reach adequate concentration at the site of action to elicit its desired effect, which depends on dose, absorption, distribution, metabolism, and excretion.[2] Herbo-mineral formulations in Ayurveda, particularly those derived through *Rasashastra*, are valued for their efficacy at low doses and their broad therapeutic potential across individual constitutions.[3]

Kumarkalyana Rasa (KKR) is one such herbo-mineral compound specifically indicated for pediatric use. It is cited in *Bhaishajya Ratnavali* (Balrogadhikara, Prakarana 71, Verses 116–119) and formulated with *Rasasindura*, *Mouktik Bhasma*, *Suvarna Bhasma*, *Abhraka Bhasma*, *Lauha Bhasma*, and *Suvarnamakshika Bhasma*, triturated with *Kumari Swarasa* and administered with milk, *ghrita*, or *sharkara*. Classical indications include *Jwara* (fever), *Shwasa* (asthma), *Atisara* (diarrhea), *Kamala* (jaundice), *Agnimandya* (poor digestion), and general debility in children.[4]

AIMS AND OBJECTIVES

1. To compile and discuss the therapeutic indications of *Kumarkalyana Rasa* in paediatric disorders.
2. To review the pharmacological and therapeutic properties of individual constituents of KKR.
3. To analyze available safety and toxicity data of *Kumarkalyana Rasa* and its constituents.
4. To explore the probable mechanism of action of KKR through Ayurvedic and modern scientific perspectives.

3. MATERIALS AND METHODS

The present review is based on critical evaluation of classical Ayurvedic texts such as *Bhaishajya Ratnavali*, *Rasaratna Samuchhaya*, *Rasa Tarangini*, *Rasendra Chudamani*, and *Rasashastra* textbooks. Relevant modern references were obtained from scientific databases including PubMed, Google Scholar, and AYUSH Research Portal using keywords such as “Kumarkalyana Rasa,” “Suvarna Bhasma,” “Rasasindura,” and “Ayurvedic Rasayana.”

Toxicological and pharmacological data were compiled from OECD guidelines and published experimental studies on analogous formulations.

DISCUSSION

Table 1: Pharmacological properties of individual ingredients of Kumar Kalyan Rasa.

	Rasa	***Guna***	***Veerya***	***Vipaka***	***Prabahva***
Rasasindura[5]	*Shada Rasa*	*Guru, Snigda*	*Ushna*	*Madhura*	*Vajikarna, Sarvarogahara*
Mouktik Bhasma[6]	*Madhura, Kashaya*	*Laghu, Snigda*	*Sheeta*	*Madhura*	*Ojovardhaka , Dahashamaka, Vrishya, Kasa*
Suvarna Bhasma	*Madhura,*	*Kashaa Snigdh, Laghu*	*Madhura*	*Sheeta*	*Vrishya, Varnya, Balya, Dipana, Tridoshanasaka, Shwasa Kasahara, Jwaranashaka, Brihana* and *Vajikara,*
Abhraka Bhasma[7]	*Kaşhaya, Madhura*	*Snigda*	*Sheeta*	*Madhura*	*Dipana, Balya, Prajnabodhi, Vrşhya, Ayushya, Rogaghna, Shariradardhyakara, Santankara, Rasayana*, etc
Lauha Bhasma[8]	*Tikta, Madhura, Kashaya*	*Guru, Ruksha*	*Sheeta*	*Madhura*	*Lekhana,Balya, Vrishya, Ayushya, Vrnya, Medhya, Raktvrdhk, Yogvahi, Veeryavrdhk*
Suvarnamakshik Bhasma[9]	*Madhura*	*Laghu*	*Sheeta*	*Katu*	*Rasayana*

Pharmacodynamic Activity

Kumarkalyana Rasa is designed to strengthen *Dhatus* (tissues) and balance *Tridosha*, particularly *Kapha* and *Pitta*. The synergistic combination of *Suvarna* (Gold), *Abhraka* (Mica), *Lauha* (Iron), and *Mouktik* (Pearl) ensures *Rasayana* (rejuvenation), *Balya* (strength-promoting), and *Medhya* (cognitive-enhancing) actions.

Immunostimulant and Rasayana Effect

Suvarna Bhasma and *Rasasindura* have been documented to enhance both cellular and humoral immunity by modulating cytokine response, increasing phagocytic activity, and reducing oxidative stress. These effects correlate with *Ojo Vardhana* described in Ayurveda.[10]

Hepatoprotective and Digestive Action

Abhraka and *Suvarnamakshika Bhasma* support liver function and stimulate *Agni* (digestive fire), helping in cases of anorexia and *Agnimandya*. *Abhraka Bhasma* has demonstrated hepatoprotective and antioxidant effects in preclinical models, likely due to its silica and iron oxide content.[11]

Respiratory and Antitussive Effect

Rasasindura, through its *Ushna Veerya* and *Kaphaghna* properties, helps clear respiratory tract obstructions, alleviates cough and breathlessness, and improves oxygenation.[12]

Hematopoietic and Antianemic Action

Lauha Bhasma is a potent *Raktavardhaka* due to its high iron content (≈38.8%), enhancing hemoglobin synthesis and preventing iron deficiency anemia.[13]

Neuro-muscular and Developmental Support

Suvarna and *Mouktik Bhasma* exhibit *Medhya* (nootropic) and *Balya* effects, enhancing neurological coordination, muscular tone, and overall vitality beneficial in hypotonia and developmental delay. The adaptogenic nature of KKR arises from its metallic elements in nanocrystalline form that regulate stress response pathways and prevent oxidative cell damage.

Probable Mode of Action

From an Ayurvedic standpoint, KKR corrects *Agni Mandya* and promotes *Dhatu Poshana*, thereby strengthening both body and mind. From modern perspective, it can be understood as a multi-target pharmacological agen**t** exerting Antioxidant and anti-inflammatory effects, Hepatoprotective modulation of enzymes, Enhancement of hematopoiesis and oxygen delivery, Neuroprotective regulation of neurotransmitters and synaptic efficiency, Immunomodulatory activity at cellular and humoral levels.

This integrated mechanism supports its clinical efficacy in paediatric disorders involving nutritional deficiency, recurrent infections, anemia, and developmental weakness.

Toxicity and Safety Evaluation

The result of sub chronic toxicity study suggested that oral administration of KKR for 90 days did not produce any significant toxicity in Wistar rats. Any alternation in physical, haematological, biochemical or morphological parameter was not observed.[14]

RESULT

KKR is used as an immunostimulant because it helps to develop non-specific immunity, adaptogenic and *Rasayana* (rejuvenation) effects that improve strength, antitussive and anti-asthmatic actions that help in respiratory problems, anti-bacterial effect that provides relief from common childhood infections, digestive stimulant and carminative effect that cures

digestive problems, and haematinic effect that helps to increase haemoglobin levels in children.

Rasa sindoor used in Kaphaja *Roga* (Disease due to Kapha dosha), *Balakshya* (Loss of strength / immunity*), Dhatu kashya* (Tissue wasting), *Hriddourbalya* (Weakness of the heart), *Mandagni* (Impaired digestive fire)[15] *Rasa sindoor* (red sulphide of mercury) relieves phlegm (cough) by acting as an *uttejak* (provocative) and *kaphasravak* (expectorant) agent. This medication has *vrishya*, *yogavahi*, and *Rasayana* action, which aids in the treatment of many paediatric pathological conditions such as *Shwasa* (asthma), *Kasa* (respiratory track disease), *Rajyakshma* (king of all diseases), and *Pratishyaya* (symptoms of common cold), among others.[16]

Swarna bhasma's effects on *Madhura rasa, laghu guna, Madhura vipaka*, and *sheeta virya* provide immune-modulatory action. *Swarna bhasma* strengthens *rasa* and *rakta* (blood) dhatu, which makes it healthy for the brain, lungs, and intestine and increases immunity by acting on *pitta dosha*. *Swarna bhasma* (incinerated gold preparation) provides a therapeutic response in microbial infections and alleviates fatigue and weakness symptoms.[17]

Abhraka (mica) ***Bhasma*** which is found in KKR has *deepana-pachana* (appetizer-digestive) and *rasayana* (rejuvenation) properties, which aid in the management of digestive problems in children, the relief of constipation, the treatment of gastric problems and the maintenance of nutritional supply in children.[18]

Lauha Bhasma with its Tikta, Kshaya-Rasa, Madhura-Vipaka, Sheeta Virya and Sara Guna pacify the Pitta Dosha and treat the Pitta predominant Pandu Roga. As Lauha Bhasma contains iron as a major content i.e. it contains 38.8% iron.[19] Its major role in prevention and treatment of Iron Deficiency Anemia as it is main constituent of hemoglobin.

Mauktik Bhasma is a well-known drug to promote strength, intellect, and enhances semen production. It is also a powerful cardiac tonic, antitoxic, and mood elevator.[20]

CONCLUSION

Kumarkalyana Rasa is a potent and safe Ayurvedic herbo-mineral formulation with broad paediatric applicability. Its multi-faceted actions—immunostimulant, hepatoprotective, hematinic, digestive, and neurotonic—make it an invaluable Rasayana for promoting child

health and resilience. When prepared and administered as per classical guidelines, KKR demonstrates significant therapeutic efficacy without toxicity.

Further studies exploring its pharmacokinetics, molecular mechanisms, and controlled clinical trials in paediatric populations are essential to establish stronger scientific validation and facilitate its inclusion in integrative paediatric care.

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