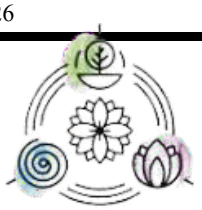
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Review Article

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"RASA, GUNA, VIRYA, VIPAKA AND PRABHAVA: A THEORETICAL BASIS OF DRAVYA KARMA"

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ABSTRACT

Background: Ayurvedic pharmacology explains the action (karma) of a drug through five properties: rasa (taste), guna (quality), virya (potency), vipaka (post-digestive effect) and prabhava (specific action). These constructs form the conceptual basis of drug selection and are increasingly examined using modern pharmacological ideas. **Objective:** To review the classical definitions and hierarchy of the five properties, the relation between taste and action, and recent biological correlates such as extraoral taste receptors, gut microbiota and bioavailability enhancement. **Methods:** Classical texts were studied in translation. PubMed was searched in November 2026 for papers on rasa, guna, virya, vipaka, prabhava and Ayurvedic pharmacology. **Results:** Rasa is the property directly perceived and from which the others are inferred. A statistical analysis of 183 plants confirmed a significant correspondence between predominant taste and reported action. Extraoral taste receptors and gut microbial metabolism have been proposed as biological correlates of rasa and vipaka, and Ayurvedic bio-enhancers are considered to correspond to the modern concept of bioavailability enhancement. Recent work proposes to reinterpret modern drug actions through guna. **Conclusion:** The five-property scheme provides a coherent and partly testable pharmacology. The strongest evidence relates to taste and action. Other relationships remain hypotheses that should be examined using prospectively defined tests.

KEYWORDS: Ayurveda, Rasa, Guna, Virya, Vipaka, Prabhava, Dravyaguna, Pharmacology, Taste

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INTRODUCTION

The pharmacology of Ayurveda is built around the idea that a substance acts according to its inherent properties and that these properties can be known and classified. The Charaka Samhita lists rasa, guna, virya, vipaka and prabhava as the basis on which the action of drugs is explained (Ch. Su. 26/66; A.H. Su. 9)[1,2]. The properties are arranged in a hierarchy of increasing subtlety and decreasing observability: rasa is perceived directly, guna are observed in part, virya and vipaka are inferred from effects, and prabhava is that which cannot be explained by the others. The scheme is the subject of increasing interest in ethnopharmacology and in attempts to bridge traditional and modern pharmacology.

MATERIALS AND METHODS

Classical statements were taken from the Charaka Samhita (Sutrasthana chapters 26 and 27), the Sushruta Samhita (Sutrasthana chapters 40 to 42) and the Ashtanga Hridaya (Sutrasthana chapters 9 and 10)[1-3]. PubMed was searched in November 2026 using the terms rasa, guna, virya, vipaka, prabhava, Ayurveda and pharmacology. Indexed papers relevant to the five properties included statistical and observational work on taste[4,5], reviews of taste receptors and gut microbiota[6,7], a review of bio-enhancers[8] and a translational proposal on guna and modern drugs[9].

OBSERVATION AND RESULTS

1. Rasa

There are six rasas: madhura (sweet), amla (sour), lavana (salty), katu (pungent), tikta (bitter) and kashaya (astringent). Each is composed of two of the five elements and is associated with a characteristic effect on the doshas: sweet, sour and salty tastes tend to reduce vata, while pungent, bitter and astringent tastes tend to increase it; sweet, bitter and astringent tastes reduce pitta; and pungent, bitter and astringent tastes reduce kapha (Ch. Su. 26/40-43; Su. Su. 42)[1,3]. Rasa is the only property that can be perceived by the senses in the unprocessed substance, so that it is the starting point for the inference of the others. A study in healthy volunteers described a structured procedure for rasa nirdharana, in which trained physicians recorded their experience after taking a measured quantity of a herb, and showed that Leonotis nepetifolia was predominantly bitter followed by astringent, which agreed with its reported ethnomedicinal and pharmacological uses[5].

2. Guna

Guna, the qualities of a substance, are twenty in the standard list, arranged in ten pairs of opposites such as heavy and light, cold and hot, unctuous and dry, dull and sharp, stable and mobile, soft and hard, clear and slimy, smooth and rough, subtle and gross, and viscid and liquid (Ch. Su. 1/49; A.H. Su. 1/18)[1,2]. They are the practical qualities by which the physician chooses diet and medicines according to the principle that like increases like and opposite decreases. Morandi and colleagues have proposed that the guna profile of a drug, interacting with the constitution of the person, may help to explain inter-individual variation in the response to modern drugs, and illustrated the idea with antibiotics and antihypertensives, while stating that empirical validation is needed[9].

3. Virya

Virya is the potency or the dynamic force of a drug by which it acts. In the most common classification it is of two kinds, cold (shita) and hot (ushna), though other classifications of eight kinds are also given (Ch. Su. 26)[1]. It is understood to be the property that manifests immediately upon contact with the body, in contrast to vipaka, which manifests after digestion. There are few direct studies of virya in experimental pharmacology, and its relationship with physical measures such as thermogenic or receptor-mediated responses to hot and cold substances has not been well characterised. Extraoral taste and transient receptor potential channels, which respond to temperature and pungent and cooling compounds, have been suggested as one avenue by which the concept might be examined[6].

4. Vipaka

Vipaka is the transformation of the substance at the end of digestion, giving rise to a final taste of sweet, sour or pungent, and an effect on excretory function and on the doshas. In a review of the role of the gut microbiota in drug metabolism, Ranade and colleagues note that the holistic mechanism of the microbiota coincides in part with Ayurvedic doctrines of pharmacodynamics and pharmacokinetics, and propose that the microbiota may help to elucidate the fundamentals of vipaka[7]. This is a suggestion for investigation, and a systematic comparison of the

properties assigned to vipaka and the metabolism of dietary constituents by gut microbes has not yet been made.

5. Prabhava

Prabhava is the specific action of a drug that cannot be explained by its taste, quality, potency or post-digestive effect. A classical example is the action of certain substances that, despite having the same rasa, virya and vipaka as another, show a different effect. In modern terms the concept corresponds to action at specific molecular targets or to pharmacological actions that are not predicted by gross chemical properties. Because prabhava is defined by exclusion, it is difficult to test, but it indicates the recognition by the classical authors that general principles do not capture all drug action (Ch. Su. 26)[1].

6. Taste, receptors and bioavailability

A study of 183 Ayurvedic medicinal plants found a significant global correspondence between the predominant taste of the plant and the ethnopharmacological actions recorded for it, with 109 significant individual associations of which only four were in opposition to traditional sources, and suggested that the taste of a plant could be used to predict its activity[4]. Gilca and Dragos have reviewed the discovery of taste receptors in the stomach, intestine, liver, pancreas, heart, brain, kidney, adipose tissue and other organs, and argued that this offers new light on the Ayurvedic concepts of taste, post-digestive effect, quality and energetic nature[6]. A third area concerns bio-enhancers: Ayurveda uses drugs such as long pepper, black pepper and ginger, and methods such as processing, to increase the efficacy of other drugs, and the concept of yogavahi, and the properties vyavayi and vikasi, have been connected to the modern concept of bioavailability enhancement[8].

DISCUSSION

Of the five properties, the best evidence supports the association between rasa and karma, with consistent findings from a database analysis and plausible mechanistic correlates in extraoral taste receptors. The evidence for guna, virya and vipaka is mainly conceptual, and for prabhava it is largely historical. The usefulness of the scheme in practice, for example in selecting among drugs with similar effects or in predicting adverse effects, has not been tested in prospective studies. Taste assessments by volunteers involve subjectivity and require standardisation, such as blinding, training and reporting of reliability[5].

Future work should include pre-registered tests of the predictive value of the five-property scheme against standard pharmacological classification, standardisation of rasa assessment, mechanistic studies linking taste-specific phytochemical classes to receptor activity, and exploration of microbiome-mediated post-digestive effects. Any translational use of guna in modern pharmacology should be accompanied by clear statements of which predictions would falsify the proposal.

CONCLUSION

Rasa, guna, virya, vipaka and prabhava constitute a structured account of how drugs act. The relation between rasa and action is supported by statistical and mechanistic evidence, while the rest of the scheme awaits systematic testing. Careful experimental design can convert this classical theory into a hypothesis-generating framework for pharmacology.

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