

RITUCHARYA, THE AYURVEDIC SEASONAL REGIMEN: A CRITICAL CONCEPTUAL REVIEW OF ITS THEORETICAL ARCHITECTURE AND CONVERGENCE WITH MODERN PREVENTIVE MEDICINE

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ABSTRACT

While the individual herbs and Panchakarma therapies of classical Ayurvedic medicine have been pharmacologically studied, the concept of seasonally adjusted diet (Ahara), behavior (Vihara) and purificatory therapy (Shodhana) called ritucharya has not been critically evaluated by any conceptually organized assessment from a biomedical perspective. Theoretical architecture of Ritucharya outlined in Brihatrayi (Charaka Samhita, Sushruta Samhita and Ashtanga Hridayam) is critically discussed and the extent of congruence of seasonal recommendations with present knowledge in chronobiology, nutrition, immunology and seasonal epidemiology is evaluated, by adopting a narrative-analytical synthesis approach to primary classical texts and post-classical commentaries supplemented by peer-reviewed biomedical literature from PubMed/MEDLINE, Scopus and Google Scholar; the thematic synthesis was organized around the Tridosha-seasonal cycle, six Ritus, Ritusandhi (seasonal transition), seasonal

panchakarma and the pharmacological and psychobehavioural basis of seasonal prescriptions. The Sanchaya-Prakopa-Prashamana model of Doshic seasonal fluctuation is seen to correlate well with the documented seasonal variation in basal metabolic rate, mucosal and cytokine

immunity and gut microbial composition, season-specific dietary tastes (Rasa) have plausible pharmacological explanations, and several Vihara prescriptions, such as avoiding daytime sleep in spring, exposure to moon-light in autumn, and boiled water in monsoon month, are found map closely to documented mechanisms in circadian biology, dermal photobiology and water-sanitation science respectively while the concept of Ritusandhi anticipates the disruption of neuroendocrine and immune calibration that accompanies abrupt seasonal transition. The geoclimatic specificity of the six-Ritu schema to Indian subcontinent, the incompleteness of translatability of Dosha constructs into standardised biomedical outcome variables and comparatively shallow base of controlled clinical evidence for the regimen as an integrated entity compared to its component elements are significant limitations; nevertheless, Ritucharya is an internally coherent, mechanistically plausible model of seasonal preventive health that anticipates several principles articulated later independently by chronobiology and seasonal immunology, and responsible integration into preventive and integrative medicine today will require geoclimatic adaptation, operational definition of adherence, and prospective controlled evaluation.

KEYWORDS: Ritucharya; Ayurveda; seasonal regimen; Tridosha; Shat Ritu; chronobiology; preventive medicine; integrative health.

1. INTRODUCTION

Preventive medicine is often described as a relatively new feature of the therapeutic repertoire; however, there are systems of preventive medicine described in traditional medicine for thousands of years. Ayurveda, an organized medical system with an oral tradition far older than it, considers health (Swasthya) not as the absence of disease but as a dynamic balance between the constitutional humours (Doshas) of the body, its digestive function (Agni), its tissues (Dhatu), its excretions (Mala), and its psyche, all continually interacting with the environment around it.^[1,2]

Ritucharya means the regimen of conduct or season (Ritu and Charya) discussed in the classical texts of Ayurveda. It outlines dietary, sleep, exercise, hygiene, sexual hygiene, ethical and purificatory routines for each of the six seasons (Shat Ritu) of the traditional Indian calendar, assuming that the seasonal changes of environment predictably disturb the balance of Vata, Pitta and Kapha, and that a predictable change in lifestyle before this disturbance can further advance to a disease process is beneficial.

There are two observations that justify a new critical interpretation of this material. Individual herbs, dietary items, and single Panchakarma procedures have received a lot of research and investigation vis-à-vis with modern pharmacological and clinical knowledge, however, the seasonal regimen as a whole has been rarely studied in comparison with the knowledge of seasonal physiology. Secondly, the fields of chronobiology, environmental immunology and seasonal epidemiology have, largely without help from the Ayurvedic scholarship, established a large and ever expanding evidence base on the systematic variation of human physiology throughout the year. It is neither difficult nor premature to make a structured comparison between the two literatures.

This review undertakes that comparison. It reconstructs the textual and conceptual bases of Ritucharya derived from Brihatrayi and associated commentarial literature; provides a theoretical architecture between the six Ritu and Doshic seasonality; analyses the Ahara-Vihara instructions season by season and their potentially biomedically related aspects; discusses the unique nature of Ritusandhi and seasonal Panchakarma; and critically appraises the strengths and limitations of the system and its potential for translation into contemporary integrative preventive practice.

2. Historical and Textual Foundations

2.1 Vedic antecedents

The idea of seasonal living goes back to the Vedic corpus (roughly 1500-600 BCE): the word Ritu means both a calendrical season and a cosmological cycle, and ritual practice (Yajna) was intentionally synced with the seasonal changes in order to maintain both cosmic and bodily order (Rta).^[4] Ritucharya is the older cosmological intuition systematised into a practical regime of diet and conduct, as a clinical doctrine.

2.2 The Brihatrayi

Charaka Samhita. In the most complete classical text on Ritucharya, the Sutrasthana of Charaka Samhita, the failure to follow the seasonal regime (Rituasatmya), is directly correlated to Doshic aggravation that leads to the onset of the seasonal disease and dietary, behavioural, ethical and therapeutic guidelines are detailed for each season.^[5,6]

Ashtanga Hridayam. Vagbhata's Ashtanga Hridayam (Sutrasthana, chapters 3–4) provides a shorter form of synthesis of the Charaka and Sushruta positions, with special focus on the time of transition between seasons (Ritusandhi) when the adaptability of the body is

considered to be at its peak.^[7,8] Sushruta Samhita. Sushruta's surgical orientation brings in an anatomical and tissue-level understanding of seasonal influence, for example macro seasonal – Adana Kala and Visarga Kala and how they relate to wound healing, vitality of tissues (Ojas) and the timing of the operation.^[9]

2.3 Commentaries and regional elaboration

A few inconsistencies between the two main works were addressed by post-classical commentators, such as Chakrapanidatta on the Charaka Samhita and Dalhana on the Sushruta Samhita, and these works provided clinical examples. The regional traditions continued the doctrine: for instance, in the Kerala Panchakarma tradition, monsoon (Varsha Ritu) is the best time for intensive Shodhana, and this has already been documented in the classical texts.^[10] In the medical literature, there are similar notions that can be traced back to the same seasonality, either by convergent empirical observation, or by prolonged cross-cultural exchange in the subcontinent and the Himalayan region.

3. Conceptual Architecture of Ritucharya

3.1 The Tridosha cycle: Sanchaya, Prakopa, Prashamana

In Ayurvedic physiology, three Doshas: Vata (movement and catabolism), Pitta (transformation and thermogenesis) and Kapha (structure, cohesion and anabolism) are maintained in dynamic equilibrium with each other (Prakriti) depending on one's constitution. According to classical texts, there is a cyclical course of three seasons for each Dosha (Sanchaya, Prakopa and Prashamana) corresponding to its gradual accumulation, overt aggravation and spontaneous pacification. Ritucharya in truth is a preventive measure against this foreseeable cycle and is meant to try to stop the Dosha that has been accumulated from crossing into manifest disease.^[1,11]

3.2 Adana Kala and Visarga Kala

Another concept organizing the solar year is the division into two macro-periods. Adana Kala (taking" period, when the sun is going northwards) is linked to progressive environmental drying and a gradual decrease of bodily strength and vital reserve (Ojas), which makes the person vulnerable to catabolic and dehydrative disorders. Visarga Kala (the "giving" period, the southward movement of the Sun) is associated with increase in moisture in the atmosphere, dominance of the Moon and anabolic restoration, leading to Kapha- and Pitta-type disorders. This macro-seasonal frame puts the six individual Ritus in a broader bioclimatic logic.^[9]

3.3 Six seasons (Shat Ritu)

There are six Ritus of about two months each, each corresponding to a certain environmental quality (Guna), the dominant phase of Dosha activity, and a corresponding cluster of disease vulnerability. All three texts of Brihatrayi have this kind of correspondences which are summarised in Table 1.

Table 1: The Six Seasons (Shat Ritu) and Associated Dosha Dynamics.

Season (Ritu)	Approx. months	Macro-period	Dominant Dosha phase	Key environmental qualities
Shishira (late winter)	Jan–Feb	Adana Kala	Kapha — Sanchaya	Cold, dry, foggy
Vasanta (spring)	Mar–Apr	Adana Kala	Kapha — Prakopa	Warm, humid, efflorescent
Grishma (summer)	May–Jun	Adana Kala	Vata — Sanchaya	Hot, dry, intense
Varsha (monsoon)	Jul–Aug	Visarga Kala	Vata — Prakopa / Pitta — Sanchaya	Humid, overcast, rain-laden
Sharad (autumn)	Sep–Oct	Visarga Kala	Pitta — Prakopa	Mild, dry, clear
Hemanta (early winter)	Nov–Dec	Visarga Kala	Kapha — Sanchaya	Cold, nourishing

4. Season-Wise Regimens and Their Biomedical Correlates

The advice given for the diet and behaviour associated with each Ritu has nothing to do with what is "good" for the person to eat or do; rather, each Ritu's taste (Rasa) and quality (Guna) is prescribed in order to counteract the Dosha thought to be most prevalent in that season, as per Samanya-Vishesha (like increases like, dissimilarity decreases dissimilarity). Table 2 provides a brief summary of basic prescriptions for each season, along with the more recent biomedical research that is most relevant to their plausibility.

Table 2: Season-Wise Ahara-Vihara Prescriptions and Corresponding Biomedical Observations.

Ritu	Core Ahara-Vihara prescription	Biomedical correlate
Hemanta	Heavy, unctuous, nutrient-dense diet (milk, sesame, jaggery, meat broths); oil massage (Abhyanga); vigorous exercise; sun exposure	Cold-induced rise in basal metabolic rate and caloric requirement; cutaneous UVB-dependent vitamin D synthesis; massage-associated cortisol reduction and lymphatic/NK-cell support ^[12,13]
Shishira	Warming, oily, mildly sour foods; avoidance of cold/raw items; sudation (Swedana); nasal oil instillation (Nasya)	Cold, dry air reduces mucociliary clearance and desiccates mucosa, predisposing to rhinovirus/influenza; steam and nasal oil support airway clearance ^[14]
Vasanta	Light, dry, pungent–bitter–astringent diet; avoidance of heavy/cold/sweet foods and daytime sleep; dry massage (Udvartana); therapeutic emesis (Vamana)	Spring rise in airborne allergen load, IgE and Th2 cytokine activity; circadian disruption from daytime sleep promotes an anabolic, Kapha-like metabolic state ^[15]
Grishma	Cool, liquid, light diet (rice gruel, milk, fruit, electrolyte drinks); avoidance of exertion and peak-sun exposure; daytime rest permitted	Heat stress reduces gastric secretion and gut-barrier integrity; oral electrolyte replenishment and activity restriction mirror WHO heat-health guidance ^[16]
Varsha	Freshly cooked, easily digestible food; old grains, medicated ghee; exclusive use of boiled or medicated water; medicated enema (Basti)	Faecal–oral pathogen load (<i>Vibrio cholerae</i> , <i>Salmonella typhi</i> , hepatitis A virus) peaks with monsoon flooding; boiling water is among the most cost-effective WASH interventions ^[16,17]
Sharad	Bitter, sweet, astringent diet (amla, ghee, rice); avoidance of pungent/sour/salted food; moonlight exposure; purgation (Virechana)	Post-monsoon pro-inflammatory cytokine surge (IL-6, TNF- α) and oxidative stress; antioxidant-dense diet and reduced thermal/UV exposure are biologically coherent counter-measures ^[18]

5. Ritusandhi: The Transitional Vulnerability Window

One of the more unique theoretical developments of Ritucharya is the concept of Ritusandhi (the more or less seven-day period between each season) where a sudden change from one season's program to the next is specifically forbidden. The classical explanation is physiological—homeostatic systems are supposed to be fine-tuned to the seasonal context of the outgoing season for a limited period and a sudden shift in diet or behavior within this period is believed to trigger a new category of disorders arising during transition (Ritusandhi-janya vikara).^[7]

This construct predicts, qualitatively, findings now documented in chronobiology and psychoneuroimmunology: the hypothalamic-pituitary-adrenal (HPA) axis, thyroid output and some immune parameters are gradually changed seasonally, and sudden changes in the environment or behaviour during the recalibration phase are linked to brief increases in upper respiratory infection, autoimmune flare and mood disturbance.^[4,19] Despite this, however, direct clinical study of Ritusandhi as an independent condition is not yet found in the biomedical literature, and this is one of the most easily achievable and valuable of the targets for collaborative biomedical–Ayurvedic research.

7. Seasonal Panchakarma as a preventive purification

Ritucharya differs from regular seasonal health advice because it incorporates the Panchakarma (5 classical bio-purification processes) at specific time points in the seasonal cycle to remove surplus Dosha, prior to its overflowing into disease (used prophylactically not curatively), hence called Shodhana Ritucharya. The classical indications for the use of Vamana (therapeutic emesis) are to remove accumulated Kapha in the initial phase of Vasanta, purgation (Virechana) for removing Pitta in the initial phase of Sharad, Basti (medicated enema) for removing Vata in the wetter season of Varsha, therapeutic bloodletting (Raktamokshana) for aggravated Pitta-Rakta in Sharad and nasal instillation (Nasya) for clearing the cranial Dosha in the initial phase of Vasanta and Sharad.^[1,10]

A large number of institutional clinical studies, which are summarized in great detail in the accompanying empirical literature, have documented measurable changes in inflammatory and immune parameters, when these procedures were administered at the appropriate time of the year (e.g., airway hyperreactivity after seasonal Vamana, hepatoprotection and anti-inflammatory effects after Virechana). The concept of Shodhana independent of the size of any particular trial would be that it would operationalise periodic and timely immunomodulation as primary prevention, which has limited parallel in current preventive medicine where periodic interventions (vaccination schedules or seasonal prophylaxis) are directed at particular diseases rather than constitution and/or season.

7. Pharmacological and Nutritional Rationale of Seasonal Diet

The dietary code, Ritucharya, is based on the pharmacological properties (Rasa, Guna, Virya, Vipaka and Prabhava) of foodstuffs and corresponds, season by season, to the predominance of the respective dosha. In spring, the foodstuffs are sweet, astringent and pungent to counter

Kapha; in monsoon, sweet, sour and salty to counter Vata; and in autumn, sweet, bitter and astringent to counter Pitta.^[1]

Modern nutritional science provides some evidence from plausibility level. The botanicals recommended for bitter spring, namely neem, turmeric and fenugreek, have documented antimicrobial and anti-inflammatory properties that are important for the allergy and infection-prone spring season. High-water content summer foods (cucumber, buttermilk, coconut water) give the body what it needs for hydration and electrolyte balance. The mechanisms of fermented monsoon preparations (Arishtas, Asavas) and of honey as a modern probiotic and antimicrobial food science have the same ground.^[13,21] However, a number of seasonal contraindications (e.g., no raw leafy vegetables during Varsha, no water from the river during Varsha) matched well with the contemporary food safety advice for the same pathogens (e.g., *E. coli*, *Salmonella*, *Vibrio*, soil-transmitted helminths).^[16]

8. Behavioural and Psychoneuroimmunological Dimensions

The concept of Ritucharya is not limited to diet alone, but also encompasses a wide range of aspects related to sleep architecture, exercise intensity, sexual conduct, bathing practice and — particularly — ethical and emotional comportment (*Sadvrta*), which is detailed under the *Achara Rasayana*, establishing the doctrine that righteous conduct produces a rejuvenating physiological effect, similar to that of herbal *Rasayana* preparations.^[1]

The allowing of daytime sleep (*Divaswapna*) during summer alone and its prohibition during all other seasons on account of its tendency to aggravate Kapha and metabolic toxin (*Ama*) accumulation, prefigures the modern study which has associated non-physiological daytime sleep with metabolic syndrome and cardiovascular risk.^[15] The seasonal adjustment of exercise intensity (from vigorous in winter/early spring to moderate in summer/monsoon) is in keeping with recommendations from the sports-medicine literature regarding seasonal adjustments in training-load. *Achara Rasayana* is paralleled directly, and independently, in psychoneuroimmunology studies that have established chronic stress, negative affect and social isolation as risk factors for immune dysregulation, and seasonal mood disturbance (*SAD*) as a biologically relevant psychologically informed seasonal regimen.^[19,22]

9. Comparative Analysis: Ritucharya and Biomedical Seasonal-Health Constructs

Table 3 juxtaposes six core Ritucharya constructs against their nearest biomedical analogues, as a structural summary of the convergences explored in the preceding sections.

Table 3: Ritucharya Constructs and Corresponding Biomedical/Contemporary Concepts.

Construct	Ayurvedic (Ritucharya) account	Biomedical / contemporary account
Seasonal immunity	Dosha balance governs disease susceptibility; seasonal Panchakarma sustains Bala (resilience)	Seasonal variation in NK-cell activity, cytokine profile and mucosal immunity is well documented ^[4,19]
Seasonal diet	Taste/quality of food counteracts the Dosha expected to predominate each season	Seasonal variation in nutrient requirement and metabolomic profile supported by nutrition research ^[12,13]
Transition vulnerability	Ritusandhi: gradual regimen change prevents transition-specific disease	Seasonal transitions perturb circadian and HPA-axis calibration, associated with raised infection rates ^[4]
Purification protocols	Seasonal Panchakarma clears accumulated Dosha (Ama) before disease onset	Periodic detoxification and microbiome modulation carry emerging clinical evidence ^[20]
Seasonal sleep	Season-specific sleep pattern (e.g., permitted daytime rest only in Grishma) preserves Doshic equilibrium	Chronobiology documents seasonal variation in melatonin, sleep architecture and mood ^[15]
Disease causation	Non-adherence to Ritucharya precipitates Doshic aggravation and seasonal illness	Seasonal environmental drivers (temperature, humidity, UV, vector activity) shape disease epidemiology directly ^[16,17]

10. Critical Appraisal

10.1 Conceptual strengths

There are three strengths which are especially worthy of academic note. The first is that Ritucharya has described a systems-level approach to disease prevention that includes environmental, nutritional, behavioural and psychological determinants, ahead of the biomedical determinants. Second, it is not a generic medicine; its prescriptions are season-, constitution- and (implicitly) geography-specific, rather than generic, anticipating the individualized approach of contemporary precision- and lifestyle-medicine. Third, its approach to purification as a kind of prophylaxis (as well as treatment) is a precursor of early attempts to normalize the physiology to plan, a concept recently gaining momentum in functional and integrative medicine^[2,11]

10.2 Limitations and translational challenges

Identify the limitations and translation issues in the study of water use efficiency in smallholder agriculture. Aside from that, the system has actual weaknesses. The six Ritu schema is based on the geoclimatic conditions of the northern Indian subcontinent and does not correspond completely with the two-season (wet/dry) or four-season (temperate) seasonal rainfall pattern that is commonly observed in other parts of the globe; therefore, it should not be extrapolated without some modifications for regional adaptation. Several recommended diet items are representative of the socioeconomic and dietary-ethical situation of their time and may no longer be available, affordable or desirable to today's populations. First and foremost, the Tridosha construct, atomised as an explanatory heuristic, lacks a single equivalent biomedical construct, making the design of trials using internationally recognised, standardised outcome measures difficult. Last but not least, the clinical evidence base for Ritucharya as a complete regimen is relatively limited as most studies focus on individual herbs, individual Panchakarma procedures, or compliance-outcome relationships in retrospective/observational studies.^[23]

10.3 Convergent contemporary evidence

Despite all this, there is an increasing amount of independent research that gives credibility to some of Ritucharya's main principles. Seasonal changes in melatonin, cortisol, thyroid hormone, serotonin and various immune parameters have been recorded.^[4] Immunological research talks of a rise in innate and adaptive responses during the winter and spring season and of inflammatory-cytokine peaks, which correlates with the disorders noted in the classical texts as being in Kapha-predominant season; the Kapha-predominating disorders of the classical texts are noted in the winter and spring seasons. The study of gut-microbiome has shown a correlation between seasonal changes in microbial diversity and the dietary recommendations of Ritucharya, while the anti-inflammatory and immunomodulatory properties of some of the suggested Ritucharya botanicals (turmeric, neem, ashwagandha, ginger, long pepper) have been well documented pharmacologically.^[21,24]

11. Implications for Integrative Public Health

The translatability of Ritucharya is most clearly visible in areas of the greatest disease burden in the season, and places where the prevention infrastructure is most constrained in cost. Ritucharya targets water-borne and vector-borne diseases in the monsoons, and seasonal respiratory/allergic diseases during the spring and winter seasons by implementing low-cost,

culturally-receptive measures (which include water hygiene, dietary modification and scheduled purification days) that do not rely on capital-intensive curative infrastructure.^[16,17] Both the World Health Organization (WHO) and the Ministry of AYUSH of India have expressed interest in the policy level in the integration of evidence-based traditional preventive measures, which has been put under the spotlight during the COVID-19 pandemic.^[25,26]

To achieve responsible integration, however, the above-mentioned challenges regarding translation must be overcome: the regional adaptation of the seasonal schema, the creation of validated adherence-measuring instruments, and — most important — prospective, sufficiently large pragmatic trials comparing adherence to Ritucharya and non-adherence in standardized biomedical and patient-reported outcomes. There needs to be collaboration between Ayurvedic scholarship and biomedical/epidemiological research groups in this agenda.

12. CONCLUSION

Ritucharya is one of the more maturing pre-modern systems of seasonal preventive medicine, which include a theoretically coherent description of the physiological vulnerability of the seasons (Tridosha cycle), a structured set of dietary and behavioural guidelines, a clear theory of transitional stress (Ritusandhi), and a programme of purification to prevent illness (Panchakarma in the seasons). A large percentage of its central tenets exhibit probable (and in some cases near) mechanistic overlap with the current science of chronobiology, nutrition, immunology and seasonal disease epidemiology. The next and important scholarly challenge is to rigorously evaluate Ritucharya as a holistic preventative intervention in a geoclimatically appropriate manner, a challenge that is the subject of this conceptual review which provides theoretical support.

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