

Conceptual Study of *Balgrahas* (Microbes) in *Kaumarbhryta*: A Narrative Review

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ABSTRACT

Ayurveda is a time-tested science that systematically explains its concepts through eight branches. *Grahas Chikitsa* (Ayurvedic treatment of microbes) is one of these branches, and it is well-explained in the texts. “*Graha*” refers to a tiny, invisible living organism that may undergo several stages of development and can be pathogenic or antigenic to the body. Microorganisms can cause generalised pathogenic alterations in the body that affect multiple systems, similar to the concept of *Grahas*. This suggests a deeper understanding of microbes in relation to *Grahas*. This review paper aims to explore the age-old concept of *Balgrahas* (microbes) and its relevance in modern times. The review was conducted using published articles on paediatric disorders, electronic databases, textbooks on paediatrics, and traditional Ayurvedic writings related to *Kaumarbhryta* (Paediatrics). A distinguishing feature of this study is its compilation of information on *Balgraha* from classical texts, covering clinical characteristics, causal factors, and various internal and external treatments. It also discusses Ayurvedic treatment modalities such as *Daiva Vyapashraya Chikitsa* (Spiritual therapy) and *Yukti Vyapashraya Chikitsa* (Rational therapy). In this review, authors discussed several formulations for treating conditions associated with *Balgraha* (microbes) that have not been detailed in previous studies. Additionally, some *Shodhan karma* (Detoxification) procedures that are particularly recommended for both children and nursing mothers are also highlighted.

Keywords: *Daiva vyapashraya chikitsa, Grahas, Yukti vyapashraya chikitsa*

INTRODUCTION

The particular disease complex that constitutes the majority of childhood diseases in *Kaumarbhryta* (Paediatrics) is known as *Grahas Rogas*. This area is currently one of the most neglected, possibly due to the overuse of mythical justifications and the challenges associated with its clinical comprehension, diagnosis, and treatment. *Sushruta* and other authors have effectively highlighted the importance of *Grahas Rogas* by providing definitions that demonstrate the value of their treatment. In *Shareera Sthana*, *Sushruta* offers a unique definition: every *Graha* has a distinctive morphological structure, origin, and features (*Nava Grahas Akriti Vignana*), which only cover explanations of *Grahas Rogas* [1].

Grahas Rogas differ from other prominent disorders in several ways. Their aetiopathogenesis, clinical features, magnitude, effects, and course of action are distinct from those of typical childhood diseases. These disorders can enter the human body rapidly, leading to a high rate of morbidity and mortality if not addressed promptly. They can also pose risks to the lives of others affected by these children. Following types of disorders fall under the category of *Bala Graha*: *Balgrahas*, *Jataharanis*, diseases caused by *matrikas*, *Adibal*, and *Janma Bal privritta*, among other sins from former births, are attributed to goddesses in our classical texts [2].

The characteristics of *Grahas* are as follows:

- *Grahas*, which are described in Ayurvedic texts as beings that can only be seen with divine vision.
- Their territories consist of countless colonies.
- They survive and grow rapidly by consuming *rakta* (blood), *mamsa* (muscle), and *ojas* (the finest end product of digestion), and they take control of the host's body and mind.
- These beings are nocturnal rovers.
- Affected individuals often reside in abandoned homes, cowsheds, water tanks, and at the bases of trees (as seen in *Shitaputana*, *Mukhamandika*, and *Pitri Grahas*).
- *Jataharini* (gynaecological disorders) is a disease that affects pregnant women and foetuses and is considered deadly and infectious.

- They also taint the breast milk of Dhatri (wet nurses).
- *Acharya Sushruta* issued a warning, advising that wounds should be protected from *Grahas* and that a newborn should be separated from an injured individual [3].

All the above explanations are available about *Grahas*. By considering the verses mentioned, one can assume that *Grahas* are living organisms, as they attack and seize others like parasites. They also thrive in dark areas, which are conducive to their growth, and in low-temperature, high-humidity environments, as evidenced by their movement at night. They are invisible to the naked eye and require special visual aids to be seen. Because they are invisible, they are presumably unicellular and microscopic. They pass through different life phases, changing their size and shape like eggs, spores, larvae, single cells, etc., (Microorganisms can change their size and shape at different phases of development, such as amoebas). They cause diseases in humans when they enter the body, which proves that they are antigenic and pathogenic to the human body. They can cause both physical and psychological disturbances in the human body, indicating their generalised nature of affliction. Typically, they do not attack the human body; rather, *adhama* (a wrong lifestyle) makes the human body vulnerable to their entry. Treating these conditions can be quite difficult and often requires advice from experts [4].

According to the preceding interpretations, “*Grahas*” may refer to tiny, invisible living organisms that undergo several stages of development and can be pathogenic or antigenic to the body. Therefore, they are microorganisms, such as viruses, bacteria, fungi, spirochetes, yeast, amoeba, or the eggs or larvae of various worms. These organisms are too small to be seen with the naked eye and can only be observed under a microscope [5].

Taking into account the information mentioned above, it is clear that *Grahas* are living organisms with a microscopic nature. The terms “*Jyana Chakshu*” and “*Shastra Chakshu*” likely refer to specific visual tools that enhance vision, such as microscopes, or a unique ability acquired through knowledge to perceive them [6].

The flexibility of the nature of *Grahas* allows for frequent changes in their dimensions. This variability is also observed in many stages

of the life cycles of microorganisms, including viruses and bacteria (such as protozoa, parasites, and certain viruses). Microorganisms can produce generalised pathogenic alterations in the body that affect several systems, similar to the effects of *Grahas*.

Microorganisms are widely distributed throughout the cosmos, and their invasion of the human body often results from mistakes made by humans that lead to *Adharma*. The term “*Adharma*” primarily refers to any deviation from the guidelines and regulations of *Sadvritta* (the code of right conduct) and *Swasthavritta* (the Ayurvedic concept of healthy living), which can pose risks to one’s health as well as to social, environmental, and personal safety.

All *Graha rogas* are the result of the infant, mother, *Dhatri* (wet nurse), or caregiver engaging in varying degrees of *adharma* behaviour. Long-term *adharma* practices make the body more susceptible to microbial invasion [7].

This review paper aims to examine the age-old concept of *Balgrahas* and its utilisation in modern times, focusing on early diagnosis, prognostic assessment, and treatment protocol decisions. It aims to classify the various treatment modalities, including Ayurvedic herbs, *Panchakarma* procedures, and modern treatments, in the management of *Balgraha*.

The review was conducted using published research on paediatric disorders, electronic databases, textbooks relevant to paediatric diseases, and traditional Ayurvedic classics on *Kaumarbhritya*.

Graha Avesha Hetu (Entry of Grahas in Body) [8]

As previously mentioned, microorganisms are all around us and cannot be eliminated from the cosmos, as they are an essential component of nature. However, human mistakes in the form of *Adharma* leave people vulnerable to their onslaught. *Adharma* can weaken the body’s immune system, allowing *Grahas* (microorganisms) to penetrate the human body more easily. According to classical knowledge, *Grahas* have three reasons for entering the body: *Himsa*, *Rati*, and *Archana*.

Himsa: *Himsa* here means torturing someone rather than murdering them. When microbes enter the body, the immune system initiates an antigen-antibody reaction in response, based on specific antigenicity. This reaction can lead to tissue damage and phagocytosis. Consequently, the patient may experience various symptoms, such as coughing, sneezing, fever, and hypersensitivity, all of which are manifestations of excruciating pain, or *Himsa*. For example, during influenza, the body’s immune response results in symptoms like fever and cold.

Rati: A microorganism needs a host to complete its life cycle and reproduce. It begins life as an “egg” or spore inside the body,

develops into a gametocyte, and ultimately leaves the body. This process can be observed in bacteria, protozoa, and worm parasites. Sometimes microorganisms may not primarily aim to cause illness, but the host’s low immunity allows the microbes to proliferate and eventually lead to disease. This phenomenon is referred to as “*Rati*”- the inclination of microorganisms to invade human tissue and complete their reproductive cycle. For example, in malaria, sexual reproduction and the formation of malaria gametocytes occur inside the patient’s Red Blood Cells (RBCs).

Archana: The definition of *Archana* is to be nurtured and worshipped. A specific type of microorganism enters the body purely for the purpose of feeding. Their main goal is to obtain energy, but they also grow their colonies and generate illnesses. For example, roundworms and tapeworms attach to the intestinal wall, where they feed and produce eggs or larvae that travel through the bloodstream and form cysts elsewhere in the body.

The Incubation Period of Grahas (Entry of Grahas in the Body) [9]

The phenomenon of the entry of the *Grahas* (celestial bodies) into the human body is invisible. Acharyas (teachers) describe this entry as being imperceptible, similar to the entry of the *Atma* (soul) into the body, or the way an image appears in a mirror, or how oil (*taila*) is present within a seed (*beeja*). Just as the image in the mirror signals that light rays have entered, the body’s functions acknowledge the presence of the *Atma*. Similarly, the entry of *Graha rogas* (diseases caused by celestial bodies) into the body can only be assessed after the production of *Purva Rupa* and the *Roopas*, which refer to the symptomatology. The period of incubation is the time interval between the entry of microorganisms into the body and the appearance of the first symptom.

Types of Graha According to Different Acharyas [10]

Sushruta-09

Vagbhata, Ravan-12

Madhavnidan, Yogratnakar-09

Kashyap-10

Harita-8

Charak-1

The aforementioned types can be easily understood from [Table/ Fig-1] [11], which outlines the *Graha* types according to different Acharyas, along with the subtypes of *Purush Pradhan* and *Stree Pradhan Grahas*. [Table/Fig-2] presents the *Graha* types along with the typical features and odours observed in children affected by *Grahas* (microbes) [12,13].

Charak (1)	Sushruta (9)		Vagbhata (12)		Kashyapa (10)	Harita (8)	Ravana (12)	Yogratnakar (9)	Madhavanidan (9)
	Purush pradhan (3)	Stree pradhan (6)	Purush pradhan (5)	Stree pradhan (7)					
Grahonmad	Skanda	Putna	Skanda	Putna	Skanda	Lohita	Nanda	Skandagraha	Skandagraha
	Skanda apasmara	Andhaputna	Vishakha	Adrushtaputna	Skanda apasmara	Revati	Sunanda	Skandapasmar	Skandapasmar
	Naigmesha	Sheetaputna	Naigmesha	Sheetaputna	Skanda pita	Vayasi	Putna	Shakuni	Shakunigraha
		Mukhamandika	Shwagrahas	Mukhamandika	Pundarik	Kumari	Mukhamandika	Revati	Revatigraha
		Shakuni	Pitruagrahas	Shakuni	Naigmesha	Shakuni	Kataputna	Putana	Putanagraha
		Revati		Revati	Shakuni	Shivagrahas	Shakunika	Gandhaputana	Andhaputana
				Shushkarevati	Revati	Urdhva	Shushkarevati	Sitaputana	Sitaputana
					Shushkarevati	Sena	Aryaka	Mukhamandika	Mukhamandika
					Mukhamandika		Swastika matruka	Naigameya	Naigameya
					Putna		Nisrutamatruka1		
							Pilpichha		
							Kamuk matruka		

[Table/Fig-1]: Types of *Grahas* according to different Acharyas [11].

S. No.	Graha	Smell (Gandha)		Typical features
		Sushruta	Vagbhata	
1.	Skanda	Kshatajgandhi odour of (odour of blood/flesh)	Vasa- asruga Gandhi (odour of blood and fat)	Shunaksha- Sulalita Chakshu- Rakta Lochana (Swelling and congestion in orbital and malar area), Vakrasya (deviation of angle of mouth), Hatachalita eka pakshma Netra (abnormal oscillatory eyelid movement), Eknayanstravi (unilateral lacrimation of eye), Urdhvadrushti, Spandan, Kampan (involuntary movement of body)
2.	Skanda apasmara	-	Puyashonita (smell of pus)	Kara charanshcha nritya - Hasta- Bhru- Pada Nartana (Dancing movements of limbs, facial grimacing); Nisamjno bhavati, Punarbhavathi Sasamjna (loss of consciousness followed by regaining consciousness); Phenya Vaman (excessive dribbling of saliva); Vinmutra srijati (involuntarily passing urine and stool); Jivhasamdamsha Kesha lanchana (biting of lips and clenching teeth, self-harm acts like hair pulling)
3.	Shakuni	Vihangagandhi (smell of birds like vulture/eagle)	Shakunigandhi (smell of birds like vulture/eagle)	Vrana paripeeditha, Sfota, (skin with lesions like ulcers, vesicles), Jihwa talu gala Vrana (lesions in mouth, oral cavity, throat) Vaman (vomiting), Bhaya chakitha (fearful)
4.	Naigmesha	Vasagandhi (odour of fat)	Basta amagandhi (smell of bladder of goat)	Udwega, Vilapti, Prajagara, Dhiana, Oshtha Damsha- Kunjana (irritation, loss of temper, insomnia, excessive crying, stridor-like sound, lip biting), Kanthasya Shosha (dryness of mouth); Urdhva Nirikshyaman (upward gaze), Vinamyathe cha Madhya, Panipada sspandan, Sankocha stambha (abnormal posture, hypertonicity or stiffness in muscles with fasciculations, meningeal signs), Hasana (laughing loudly), Pratata Jwara (continuous fever)
5.	Putna	Kakagandhi (smell of crow like)	Putigandhi, kakagandhi (smell of crow and unpleasant smell)	Chardi- Vid bhinam Srujati (Diarrhoea, vomiting), Hrishitanuruha- hrishitanga and Romatwa (Horripilations), Kampa (chills), tiryakprekshna (gazes abnormally), Swaptisukha diva na ratri (sleeps in day and insomniac), trishnalu (polydipsia)
6.	Andhaputna	Amlagandhi (odour of sour things)	Amlagandhi (odour of sour things), matsyagandhitva (fishy smell)	Durgandhta- Vaivarnya (foul smell from body and unpleasant look), Drishthei sadati- Kandu and Pothaki (diminished vision, blepharitis, itching), Adhashayi, Alpa nidrata- Anga shoshanam (prone sleeper, disturbed sleep, malnourished)
7.	Sheetaputna	Vistrang (smell of pus)	Vasavat vistragandh (smell of fat and pus)	Parshwasya ekasya sheetatawam ushnatvam, aparastha cha (central temperature is hot, periphery is cold), Antrakujana (increased peristalsis), Netra roga (eye diseases), Udwigna- bhrishamati Vepathu, Kampa samlena swapati- Prarudatah- rodhana- Vishranga- Ksheena (tremors, convulsions, irritability, discomfort, inconsolable cry, stupor, delirium, rolling of eyes)
8.	Mukhamandika	Mutragandhi (smell of urine)	Mutragandhi (smell of urine)	Suruchi panipada vaktrhra; panipadasys ramniyata- Prasanna Varna Vadana (oedematous face and limbs giving false beautiful appearance), Kalush sira avriitha udara (engorgement of vessels over flanks and abdomen), mlananga (anasarca), Bahvaashi (excessive eating of food)
9.	Shwagraha	-	Vitasagandh (smell of faeces)	Kampa (seizure), Hrishita romatwa (horripilations), Chakshunirmilan (pupils constricted), Bahirayamanam (backward bending), Kantha kujanam (stridor-like noise), Dhawanam (running fast), Kroshanam cha shwachuni (producing voice like a dog)
10.	Pitruagraha	-	Shavagandh (smell of cadaver)	Sahsa rodan (sudden cry), netrastrava (discharge from eyes); Anga akshepaka (stiffness of limbs), Vikshepa Mushti bandha Sthambha- Shosha- Vivarnata (imbalanced involuntary movements, malnourished, doughy skin appearance)
11.	Revati	-	Bastigandhi (smell of the bladder of a goat), Panka Gandhi (smell like foul mud)	Raktasya (face becomes red flushed), Atipandu deha (yellowish coloured body and skin); Harita mala (greenish stool); Shyava (darkness of skin); Mukhapaka (mouth ulcers); Vrana (skin lesions), Karna- nasa- akshi mardanam (rubbing eyes, nose, ears)
12.	Asadhya graha (Shushka Revati)	-	Grudhragandhi (smell like a vulture's body)	Bhunjano Annam bahuvudham (unable to gain weight), yo bala parihyite (generalised debility); Kramat Sarwanga Samkshaya Deerga kala anuvarthanam (chronic emaciation of body), Kshamaksha (loss of eye power), Pureesham Harita Dravam (greenish liquidy stool), Kesha shata (hairfall), Udare Granthaya sira (engorgement of vessels over flanks and abdomen)

[Table/Fig-2]: Graha types along with the typical features and smell observed in children afflicted with *Grahas* (microbes) [12,13].

Purva Roopas [14]

Continuous crying (*Pratata Rodan*)- The absence of symptoms in newborns can often result in restrictions on language development. Crying is a common symptom that may be caused by various factors, including otitis media, septicaemia, a cold, fright, hunger, or even a wet diaper. A similar presentation may be observed in *Graha Roga* as well. Intense, unrelenting, and persistent crying is a distinguishing characteristic of *Graha Roga*.

Fever (Jwara): Fever is known to be the most prevalent symptom in all transmissible illnesses. It is one of the key signs of *Grahas Rogas*, and understanding this provides us with a better insight into how infectious and antigenic these conditions are.

General Symptoms of *Grahas Roga*

Smell of body [14]: A child's ability to perceive changes in their body is greatly enhanced by their sense of smell, as distinct odours often indicate various influences or circumstances. Children may emit different smells, all of which could be related to the influence of specific '*Grahas*,' as explained in detail in [Table/Fig-2].

General symptoms of balgraha [15]: Infants and young children's general symptoms are important markers of their health and any underlying issues. Fever is an indication of a potential disease or infection and is sometimes accompanied by irritability and excessive crying. Clenching teeth or fists and screaming can be signs of agony or discomfort. These feelings can be exacerbated by self-harming behaviours such as biting or frequently scratching the nose, eyes, and ears, as well as lip biting. Such behaviours may be observed in a child afflicted with conditions like *Balgrahas*, such as *Skandapasmara*.

The previously mentioned irrelevant self-harming and agitated behaviour observed in children affected by *Balgraha*, such as *Skanda*, *Skandapasmara*, and *Naigamesha*, is one of the key features of Autism Spectrum Disorders (ASD). This behaviour can be related to Ayurvedic concepts including *Unmad* (*schizophrenia*), *Apasmar* (*epilepsy*), and *Atatvabhinish* (*delusional disorder*).

Gastrointestinal symptoms [16]: Significant markers of digestive wellbeing and gastrointestinal manifestations may include a range of symptoms that require monitoring and treatment. Frequent loose

or watery stools and vomiting, which is the evacuation of stomach contents, are indicative of gastrointestinal distress and are often linked to infections, food-related issues, or underlying medical conditions. This is particularly evident in a child afflicted by *Putana Graha*.

Respiratory symptoms [14]: Respiratory symptoms are not limited to the common cold and cough; they encompass a range of symptoms that provide information about how the respiratory system is functioning. Grunting respiration, characterised by a distinctive sound made during exhalation, often indicates increased effort in breathing. It can occur in infants experiencing respiratory distress or illnesses in which the airways are restricted or weakened, such as pneumonia or bronchiolitis. The symptoms mentioned can also be observed in *Balgrahas*, such as *Naigmesha*.

Central nervous system symptoms [14]: Physical manifestations: Central nervous system symptoms, particularly organic ones, encompass a variety of manifestations. These include fatigue, irritability, giddiness, and vacant stares. Other symptoms may include rolling of the eyes, hypotonia, jerky head movements, and twitching of the facial muscles and eyelids. Additional symptoms may encompass incontinence of urine and stools, tremors, altered posture, changes in voice and speech, and dribbling of saliva (which can be caused by facial palsy). The above symptoms can also be observed in *Balgrahas* such as *Skandapasmara*, *Skanda*, and *Naigmesha*.

Psychological manifestations: Disorders related to the central nervous system may manifest as hair pulling, irrational laughter, loud screaming, tics, fasciculations, and anxiety. These symptoms can also be observed in *Balgrahas* like *Skandapasmara*.

Skin symptoms [17]: Changes in skin tone, blister development, and urticaria (hives) are examples of various skin complaints. Engorgement of vessels in the abdomen and flank regions is observed in a child affected by *Mukhamandika graha*.

Graha Rogas and Microorganisms

Graha rogas and microorganisms can be related similarly on various grounds. This relationship can be easily understood from [Table/ Fig-3] [18], which explains the nature and characteristics of both *grahas* and microbes.

Regulations for Management

- The therapies for *Grahas rogas* were extensively addressed by *Sushruta*, *Vagbhata*, and *Kashyapa* [7].

- Vagbhata* listed several distinctive practices.
- Both *Daiva* and *Yukti Vyapashraya Chikitsa* are employed during the course of therapy [19].
- The anti-infective concepts used in *Grahas rogas* are nearly comparable to those used in contemporary science [20].

Grahas Rogas's Fundamental Tenets [7]

1. Daiva Vyapashraya:

- Swasti Vachana* (Auspicious prayers)
- Mantra Prayoga* (Chanting)
- Mangala Homa/Havana* (Offerings to sacred fire)
- Bali* (animal oblations)

2. Yukti Vyapashraya:

- Oushadhi Dharana* (carrying medicine)
- Avagaha* (tub bath sudation)
- Snana* (Medicated bath)
- Dhupana* (Fumigation)
- Ghrita Prayoga* (Use of Ghee preparations)
- Dhoomapana* (Herbal smoke practices)
- Parisheka* (steam pouring or showering of warm decoction)
- Lepas* (local medicament application)
- Agni danda Homa* (purification of house by use of sacred agni)

Daiva Vyapashraya in Psychological and Psychosomatic Disorders

- Daiva Vyapashraya Chikitsa* is explained as the mainstay of treatment for *Grahas rogas*.
- Daiva Vyapashraya Chikitsa* is an *Adravayabhoota Chikitsa* (treatment devoid of medicines) that helps in adapting the confused mind.
- Each health issue is a psychosomatic ailment (as evidenced by present-day practice); hence, *Daiva Vyapashraya Chikitsa* should be employed in every case.

Swasthi vachana (Auspicious prayers) [7]: This means offering prayers for the patient's wellbeing. This can be linked to counseling the patient to help him understand the genuine health realities.

Mantra (Chanting) [21]: *Mantras* help attain self-realisation. They also aid in understanding our role in maintaining the biodiversity and ecosystem of the universe. When chanted rhythmically, *mantras*

Nature	Grahas rogas	Microorganisms
Living	Attacks and then moves	Living
Prone time of movement	Darkness	Frigid temperature, humidified areas
Method of invasion	Hold or grab the body, invade, and cause <i>Vyadhi</i> (disease)	Entry won't be discovered until the first symptom
Latent period	Cannot recognise	Follows the latent period
Size and shape	According to the host and favourable conditions, changes in size and form	Pass through different stages of life cycle
Generalised/localised	Causes body-wide illness that call for <i>yukti</i> (conscience) and <i>Daivavyapashraya chikitsa</i> (Spiritual therapy)	Causes widespread involvement
Presence of fever (infectious origin)	Causes fever	Usually causes fever as the first symptom
Visibility	Invisible and visible only by certain visual assistance or a special form of divine vision power	Invisible by the naked eye and visible by the microscope
Entry inside the body	Enters the human body that follows the <i>adhama</i>	Enters the body of a specific host when the host's body is immunocompromised
Diagnosis	Difficult due to rapid onset, progression, and severity	Without doing culture research, it is difficult to diagnose a single organism
Treatment	<i>Apta Vakya</i> should be followed suggesting the need of an expert's opinion	Previous experiences, the prevalence rate of infection in a given area, and empirical treatment will be followed
Intension of entry	<i>Himsa</i> (tissue injury), <i>Rati</i> (sexual thirst to complete the life cycle), and <i>Archana</i> (nourishment)	In quest of a host in order to nourish along with completion of the reproductive cycle
Outcome of invasion	Does <i>Raksha</i> (protection) of the body	It provides certain immunity post-infection

[Table/Fig-3]: The similarity between *Grahas rogas* and Microorganisms [18].

produce sound waves with a range of wavelengths and amplitudes that can alter the brain's electromagnetic wave patterns.

Havana Chikitsa and Mangala Homa (Offerings to sacred fire):

Homa was performed in the past to determine the prognosis of *Graha rogas*. Since the body of a *Graha rogi* emits a variety of unusual odours, its vapours may take on different colours when they come into contact with fire. Additionally, the expired breath of a *Graha rogi* may contain specific hazardous substances due to abnormal metabolism. When these substances interact with fire, they may alter the colour of the vapours. These therapeutic vapours purify the air, eliminating environmental infections and their effects.

Bali (animal oblations): The term "Bali" refers to an Ayurvedic method of mass disinfection or communal disinfection, rather than merely the act of slaughtering animals as a ritual to appease God and ward off bad spirits [22].

Yukti Vyapasraya Chikitsa

Oushadhi dharana (Tying bag of herbs): A drug called *Aparajita* is mainly used against evil spirits. The *Aparajita* drug is *Mardana* (trituated) with *Gorochana* (cow dung) and then tied into a *pottali* (cotton cloth) along with other ingredients such as *Lakshmana*, *Sahadevi*, *Indrayana*, *Nagadanti*, *Katambara*, *Markati*, and *Brihati*, all wrapped in the broad leaves of *Bhoorjaar*. This *pottali* is then tied around the neck of the child. The traditional practice of tying a holy thread around the wrist still exists today.

Parishekh and Avagaha (sudation by showering of warm decoction or tub bath): *Avagaha* and *Parishekh* are prepared using water that has been treated with medications that possess antibacterial qualities. Both functions externally to prevent the spread of illness, eliminate odours, sanitise wounds, and keep them clean.

Snana chikitsa (Bath): *Aushadhi Siddha Koshna Jala* is recommended for bathing purposes. Herbs with antibacterial and *Kashaya rasa* qualities, such as *Agnimantha*, *Nimba*, *Shigru*, *Karanja*, and *Paribhadra*, are utilised for this purpose. Taking a bath with *Siddha Koshna Jala* helps eliminate unpleasant odours, provides a sense of freshness, and prevents skin contamination from the buildup of unsanitary materials [23].

Dhupan (Fumigation): *Dhupana* is a special procedure explained in the *Kashyapa Samhita*, with a separate chapter dedicated to it in the *Kalpa Sthana*. *Acharya Kashyapa* has highlighted the multidimensional utility of *Dhupana*, showing particular interest in its non invasive nature and ease of implementation in children.

Drugs are burned in *Ghrita*, *Taila*, or any other lipid medium. Upon combustion, the chemical constituents of the drug are converted into an oxide form. Thus, a substance that exists in a solid, inactive form is transformed into an active gaseous form. In this way, the oxides present in the gaseous state are freely available in the surrounding air. This air can be collected and inhaled to yield beneficial effects, particularly in cases of acute respiratory tract disorders such as dyspnoea.

Ghrita prayoga (Use of Ghee preparations): *Ghrita* preparations aid chemical ingredients by dissolving them in lipid media, making absorption easier from a pharmacological standpoint.

Lepas (local medicament application): The application of *Lepas* externally not only eliminates odours but also prevents the spread of illness caused by mosquito bites.

Dhoomapana (Herbal smoke practices): *Dhoomapana* is a personalised disinfection method. It involves the use of antiseptic, disinfecting, and anti-infective substances, such as *katu*, *tikta*, and *kashaya ras*, as well as natural compounds that possess the qualities of *ushna*, *tikshna*, *sukshma*, and *shlakshna*. These substances are burned, and their fumes are inhaled for therapeutic effects [9].

Balgraha and its relationships can be easily understood from [Table/Fig-4] [24]. Additionally, [Table/Fig-5] describes the management of *Grahas* according to various *Acharyas*, along with modern interventions that can be incorporated [25-65].

S. No.	Balgraha	Contemporary medicine
1.	<i>Skanda grahas</i>	Quadriplegia
2.	<i>Skanda apasmara</i>	Infantile seizure/spasm
3.	<i>Naigmesha</i>	Bacterial meningitis
4.	<i>Swagrahas</i>	Rabies/hydrophobia
5.	<i>Pitri graha</i>	Pneumonia
6.	<i>Sakuni</i>	Impetigo
7.	<i>Putana</i>	Diarrhoea
8.	<i>Sitaputana</i>	Diarrhoea with dehydration
9.	<i>Andhaputna</i>	Chronic diarrhoea
10.	<i>Mukhamandika</i>	Juvenile onset diabetes
11.	<i>Revati</i>	Pernicious anaemia
12.	<i>Suska Revati</i>	Abdominal tuberculosis

[Table/Fig-4]: *Balgraha* and its correlation with contemporary medicine [24].

Grahas	Management in ayurvedic text	Management in the modern view
<i>Skanda Grahas</i>	<ul style="list-style-type: none"> Chanting the Gayatri mantra for three nights straight [25]; <i>Chikitsa</i> for <i>sannipata stanya dusti</i>; Decoction of <i>Bilvaadi gana Vatahara</i> leaves sprinkling (<i>Asna</i>, <i>Eranda</i>) [26]; <i>Snana</i> (bath) at the crossroads; [27]; Presenting red sandalwood (<i>Rakta Chandan lepa</i>) and red garlands to the Lord [28]; Ghee prepared with <i>Rasana</i>, <i>Devdaru</i>, and <i>Madhur</i> dravyas served with milk for consumption [29]; <i>Dhupan</i>, or fumigation, using <i>Sarsapa</i>, <i>Vacha</i>, Snake sloughs, and animal hairs (camels, goats, lambs, etc.) were combined and burned [30]; Make a garland out of the little twigs of <i>Indra Valli</i>, <i>Soma Valli</i>, <i>Shami</i>, <i>Bilva thorns</i>, and <i>Mrigadaani</i> roots and tie it around the neck [31]; <i>Daiva Vyapashraya Chikitsa</i> [32]. 	<ul style="list-style-type: none"> Physiotherapy Occupational therapy Antiepileptic drugs Symptomatic management
<i>Skandapasmara</i>	<ul style="list-style-type: none"> <i>Pariseka</i> by <i>bilva</i>, <i>siris</i>, <i>golomi</i>, <i>surasa kwatha</i> [33]; <i>Snana</i> in the crossing of 4 roads [34]; Medicated oil <i>Siddha</i> by drugs of <i>Sarvagandha</i> group to be used for <i>snehana</i> (massaging the body) [35]; <i>Panchagavya</i>, <i>Mahatiktaka</i>, <i>kalyanaka Ghrita</i> [36]; <i>Somvalli</i>, <i>brihati</i>, <i>indravalli</i>, etc., roots are tied to the child for protection [37]. 	<ul style="list-style-type: none"> Anticonvulsant especially use of benzodiazepine group of drugs Fluid and electrolyte correction Fever control Dietary modification
<i>Naigamesha</i>	<ul style="list-style-type: none"> Sprinkling of water prepared by <i>bilva</i>, <i>agnimantha</i>, and <i>putikaranja</i> [38]. <i>Snana</i> near banyan tree. Offering sacrifice near the <i>Nyagrodh</i> tree to God [39]. <i>Pradeha</i> with <i>Vishakha</i> is advised in child [40]. <i>Dhanyamla Parisheka</i> is also advised [41]. 	<ul style="list-style-type: none"> Empirical broad-spectrum antibiotic coverage Cerebral diuretics used to reduce intra cranial pressure Symptomatic treatment i.e., antipyretics
<i>Shwa Grahas</i>	<ul style="list-style-type: none"> Use of medicated oil prepared by <i>Satavari</i>, <i>Sariva</i>. <i>Bilva</i>, <i>eranda</i>, <i>naktamala</i>, etc., <i>kwatha parishek</i> [42]. <i>Bali</i> near <i>nyagrodh</i> tree on 6th day [40]. 	<ul style="list-style-type: none"> Prevention by antirabies vaccination, rabies immunoglobulin Symptomatic management

<i>Pitri Graha</i>	<ul style="list-style-type: none"> • Sprinkling of water prepared by <i>kshirivriksha kashay</i> drugs [43]. • Bath in <i>sankar kuta</i>. • <i>Vachadi taila abhyanga</i> [44]. 	<ul style="list-style-type: none"> • Moist oxygen inhalation • Empirical broad-spectrum antibiotic • Antihistaminic drugs • Antipyretics • Nutritional correction etc
<i>Sakuni</i>	<ul style="list-style-type: none"> • <i>Stanya Dusti Cikitsa</i> [45]. • Sprinkling of water made by <i>Vetasa, Amra, and Kapittha</i> [46]. • Offering of <i>Karanja</i> to God [47]. • <i>Rakta, Pitta Saman Cikitsa</i>. • <i>Vrana Sodhan and Vrana Ropana Cikitsa</i> [48]. 	<ul style="list-style-type: none"> • Broad spectrum antibiotic • Antifungal drugs • Maintain hygiene
<i>Putana</i>	<ul style="list-style-type: none"> • Sprinkling with <i>Kakolyadi Gana Drugs</i> [49]. • Chanting of <i>Raksha Mantra</i> by Wearing a Clean, White Dress [50]. • Offering oblations to God in a vacant house (<i>sunya griha bali</i>) [51]. 	<ul style="list-style-type: none"> • Correction of dehydration if any by i.v. fluid • ORS or increase oral intake • Broad spectrum antibiotic • Antisecretory drugs • Improvement in hygiene and nutrition
<i>Sitaputana</i>	<ul style="list-style-type: none"> • Sprinkling of medicated water made by <i>kapittha, vimbi, bilva</i> [52]. • Fumigation with the stool of an animal [53]. • Offering wine and blood to God. (<i>sura sonita payini</i>) [54]. 	<ul style="list-style-type: none"> • Promote breastfeeding properly in case of severe dehydration • Dehydration correction by i.v. fluid only. (ringer lactate, dextrose, normal saline) • Antibiotic coverage • Antisecretory agents • Electrolyte balance maintain
<i>Andhaputana</i>	<ul style="list-style-type: none"> • Bathing in water prepared by <i>tikta</i> drugs [55]. • Fumigation with stool, nails, hair of gallinaceous birds [56]. • Chanting of <i>mantra</i> wearing an astringent colour dress (<i>kashay ambara vasin</i>) [57]. 	<ul style="list-style-type: none"> • Cause should be evaluated at first and specific treatment should be given • Nutritional demand should be met up
<i>Mukhamandika</i>	<ul style="list-style-type: none"> • Vata alleviating therapy [58]. • Sprinkling of water made by <i>kapittha, bilva, tarkari</i> drugs [59]. • Bathing near shelters for cows (<i>goshala</i>) [60]. • Chanting <i>Raksha mantra</i> wearing ornaments, garlands, and anointing [61]. 	<ul style="list-style-type: none"> • Control hyperglycaemia by insulin therapy • Prevent dehydration, correct electrolyte imbalance • Prevent diabetic ketoacidosis • Protection of vital organs from complication • Dietary modification
<i>Revati</i>	<ul style="list-style-type: none"> • Bathing near the meeting point of the river [62]. • Sprinkle by <i>Ashwagandha, Shringi</i> [63]. • Chanting of <i>Raksha mantra</i> by wearing garlands anointment [64]. 	<ul style="list-style-type: none"> • Vitamin B12 supplements • Folic acid supplements • High protein diet • Symptomatic treatment and prevention complications
<i>Suska revati</i>	<ul style="list-style-type: none"> • Similar to <i>skanda Grahas chikitsa</i> [65]. 	<ul style="list-style-type: none"> • Antitubercular drugs empirical therapy • Broad spectrum antibiotics, antispasmodics • Symptomatic treatment • Surgery if there is perforation or obstruction

[Table/Fig-5]: Management of *Balgraha* as per ayurveda and modern texts [25-65].

DISCUSSION

Graha and Microorganism

Grahas were created to protect the universe's biosphere and, consequently, people's health. Lord Shiva created *Grahas* as creatures to guard his son Guha [13,66]. However, the key point is that these beings, initially intended to be protective, became pathological and caused *Graha Rogas*, which deprived children of their lives.

Microorganisms can produce generalised pathogenic alterations in the body that affect several systems, similar to *Grahas*. Therefore, *Grahas* can be seen as microscopic structures or microorganisms, such as infectious agents, bacteria, molds, yeasts, or the eggs and larvae of various worms that are undetectable to the naked eye. Moreover, these *Grahas* possess the properties of *adarshan hetu* (idiopathic causes), meaning they cannot be seen when they enter the human body.

Thus, the vivid descriptions provided by our respected *ashtasiddhi prapta acharyas* (those possessing eight heavenly wisdoms) regarding the *lakshana* (signs and symptoms) observable in humans during the entry of these microbes need to be studied thoroughly [67]. Most likely, the term *Shastra Chakshu* (vision of knowledge) refers to a unique visual ability acquired through education, which explains the detailed descriptions of *Grahas* by our *Acharyas* and the intellect they possessed at that time.

Graha and Adharma

Acharya Sushrut has explained the concept of *Graha Avesha Hetu* (the entry of *grahas* into the body), which is responsible for causing ill effects in children due to *Graha Badha* (affliction by *grahas*) [67]. *Adharma* plays a vital role in the formation of pathology. *Adharma* refers to improper ways of living in terms of behaviour, thinking, motivation, diet, routine, lifestyle, and cleanliness. *Acharya*

mentions that when a lactating woman or mother does not follow a hygienic lifestyle and proper feeding habits, including the principles of *Swasthavritta* (the Ayurvedic concept of healthy living), *Sadvritta* (the code of right conduct), and adequate cleaning of a child after passing stool, it can lead to the entry of *grahas* into the human body.

Indulgence in *Adharma*, neglecting *mangalacharan* (prayer), and avoiding contact with sacred objects (such as *swastika, darbha, durva*, etc.) are also considered reasons for this issue. *Heena, ati*, and *mithya yoga of kala* (time), *artha* (senses), and *karma* (functions), as well as the observance of *pragnyapradh* (human error), can lead to a weakening of the immune system and the destruction of the protective barrier. This makes the body susceptible to invasion by microorganisms or *grahas*, resulting in pathology. Therefore, *Acharyas* have detailed the guidelines of *Garbhini Paricharya* (the code of conduct for pregnant women) to avoid *Graha Avesha*, which should be strictly followed by lactating mothers [67].

Dhupan: *Dhoopkalpas* for fumigation purposes, such as *Rakshoghna* (antimicrobial/sterile), have been evaluated in research outlining the advantages of *Dhupan* (fumigation) [68]. Drugs like *Ghrita* (ghee) and *Taila* (oil) are designed to burn in lipid media during *Dhupan*. Initially solid, these drugs burn to become gaseous, which is easily absorbed by the mucous membranes of the respiratory tract to provide the desired effects. Inhalation treatments, such as nebulisation, spacers, and puffs, operate on a similar premise. *Dhupan* creates a nebulisation-like effect by employing a *Naadi* (tube) [69].

In an additional study published by *Rathi R et al.*, *Maheshwar Dhoop* demonstrated a significant effect (p -value <0.0001) with a one-week residual impact while fumigating minor procedure rooms and surgery theaters, in comparison to *Basilocid* [70]. According to research, *Dhupan* of *Rason* peels, *Loban*, *Carom* seeds (*Ajmoda*), and *Curcuma longum* may significantly combat *Methicillin-resistant*

Staphylococcus aureus (MRSA 1-3) strains [71,72]. Furthermore, research by Yassin MF and Almouqatea S [73] assessed the effectiveness of herbal fumigation with *Devdaru* in treating airborne illnesses [73].

When studying *Grahas*, descriptions of psychotic symptoms are encountered. It is possible to relate the current understanding of *Atatvabhinivesha* (Delusional Disorder) to psychotic symptoms such as delusions and hallucinations. Psychosis is characterised by a loss of awareness in the patient. The pathophysiology of *Atatvabhinivesha* involves the obstruction of an exacerbated dosha affecting the mind and intellect, resulting in intellectual derangement. The most crucial aspects of the mind become impaired, making it impossible for the individual to recognise good as good and eternal things as eternal [74].

There are five different types of hallucinations: gustatory, tactile, olfactory, visual, and auditory [75]. *Punarvasu Athreya* advises *Kramavat Shodana* (Detoxification), which includes *Snehana* (oleation), *Swedana* (sudation), *Vamana* (vomiting), *Virechana* (purgation), *Basti* (enema), and *Nasya* (nasal therapy). After purification rituals, *Medhya foods* (brain-boosting foods) and drinks such as *Brahmi swarasa* with *Panchagavya Gritha* and *Shankapushpi* are administered.

When treating *Atatvabhinivesha*, *Medhya Rasayana* is particularly important because it directly affects *Budhi* (intelligence) in patients with *Atatvabhinivesha*. Several *Agantuja* (external) and *Sahaja* (genetic) factors may lead to *Khavaigunya* (defective channels of transport and transformation), which could be a potential cause of autism. Furthermore, further vitiated doshas may intensify the *Khavaigunya*, resulting in numerous key symptoms of autism [76].

According to earlier research, the neurotransmitter serotonin is implicated in autism, and its metabolism is influenced by hereditary factors. Serotonin is important for neurogenesis, which is the development of new neurons in the brain [77]. Studies show that a variety of factors, including genetic and environmental influences, neurotransmitter abnormalities, metabolic issues, immune system involvement, and structural and functional changes in the brain, may contribute to ASD [78]. *Acharya Charaka* stated that *Satvavajaya Chikitsa* (Ayurvedic Psychotherapy) aims to teach *dharma* (the proper way to live) and *artha* (the proper way to earn) through the guidance of compassionate preceptors and close friends who support the sufferer [79].

Graha and Gandha

Various smells emanate from each *Grahas roga*. Bad body odour and urine odour are typically signs of inherited or acquired metabolic problems. The hazardous intermediate metabolic waste or waste buildup causes a characteristic alteration in the body that leads to the discharge of odour from the skin. Conditions such as phenylketonuria and diabetes mellitus demonstrate how toxic metabolites can alter the colour of urine. Extremely unsanitary conditions, often resulting from excessive sweating, can also produce an unpleasant odour. The accumulation of apocrine secretions not only causes odour but also serves as a breeding ground for the development of microorganisms. Every illness likely results in some degree of dysfunction in metabolism, and bacterial toxins are expelled through urine or perspiration, releasing an unusual scent. It is common to notice a strange, inexplicable odour when experiencing a fever. This symptom prompts us to consider the connection between metabolic illnesses and *Graha rogas*.

Graha and Daivavyapashraya Chikitsa

The treatment modality of *Daivavyapashraya* (spiritual therapy) is not currently used as a treatment. In contrast, principles of *Yuktivyapashraya* (rational therapy) such as *aushadhi dharana*, *mani dharana*, *dhupana*, *snana*, *ghrutapana*, *avgaha*, *parisheka*, and *lepa* are still practiced daily in Indian households. The concept of *Balgrahas* clarifies many other Ayurvedic principles, including

dhupana and *mantra*, which are described in our prehistoric literature. These guidelines can still be followed and are beneficial to humanity.

There are apparent similarities between various microbiological illnesses and *Balgrahas*. *Balgraha roga* may be treated with both therapeutic and psychiatric interventions. It is crucial to prevent *Balgraha rogas* by improving the hygienic standards. Therefore, hygiene is essential for the treatment of *Shuchi* and *Shuddhi* (asepsis and antisepsis). Several hygienic precautions are advised for children and women going through puberty, which are effective in preventing infections. Fumigation is recommended for children and pregnant women.

It is well established that a healthy individual who contracts a microorganism will always retain some degree of immunity (*Raksha*) against that species, which reduces the likelihood of reinfection in the future. In ancient times, advanced medical equipment for diagnosis or treatment was not available. Contemporary language is more explicit and represents illness-causing organisms in a more organised manner. Modern science employs advanced techniques to identify germs and categorise them as viruses, bacteria, etc.,

The *Balgrahas*, one of the most significant components of Ayurvedic texts, need to be studied as a whole to comprehend *Balgraha rogas*. Therefore, using modern scientific methods, *Graha rogas* may be more easily understood and recognised [80].

Modern paediatricians have expressed amazement at the complete and precise descriptions of a variety of syndromes and groups of diseases with numerous systemic origins during in-depth conversations. The concept of *Balgraha* has often been disregarded by *Ayurvedic* scholars; however, now that it has been thoroughly studied and is being properly taught to scholars, there is significant potential to relate it to various modern concepts. This is especially helpful in the current era, where new viruses are emerging and wreaking havoc among the general population.

Due to the abundance of explanations and challenges in clinical interpretation, diagnosis and therapy, *Graha roga* is the most neglected aspect of Ayurvedic medicine. In addition to symptomatic therapy, the previously described therapeutic strategies prioritise complete hygiene and immunity. The treatment protocols mentioned earlier can disinfect individuals, groups, communities, and objects by acting as antibacterial, antimicrobial, antiseptic, disinfectant, bactericidal, and bacteriostatic agents.

CONCLUSION(S)

Balgrahas can be appropriately compared to microorganisms. Microorganisms are widely distributed throughout the cosmos and can enter the human body as a result of mistakes made by humans, referred to as *Adharma*. This occurs in three main ways: *Asatmendriyartha sanyog* (misuse of senses), *Pradnyapradha* (improper understanding of an object), and *Parinam* (time). These three factors can lead to the attraction of microbes, and if a person's immunity is low, it may result in the occurrence of *Balgrahas*.

Adharma refers to poor lifestyle choices related to eating, exercising, maintaining a routine, living, acting, thinking, and being indulgent. Long-term practice of *Adharma* increases a person's susceptibility to microbial invasion. Therefore, the importance of cleanliness and hygiene practices should be taught to children and incorporated into daily life.

Pregnant women and their unborn children should live in well-maintained and fumigated environments, following the *Garbhini* and *Sutika paricharya* (code of conduct for pregnant and lactating mothers) and various preventative strategies mentioned as prevention methods.

Authors' contribution: RRR: Developed and designed the study. RBR: Gave guidance on how to correct the article in light of the

Ayurvedic context, whereas SPK: Offered insightful suggestions for the manuscript's design. The manuscript was read and approved in its final form by all writers.

Editorial note: This paper is being published to highlight the ancient understanding of balgrahas (infections in children) and document ayurvedic concepts in context of modern medical history. While medicine has significantly evolved with advanced diagnostic and treatment methods, this article provides a perspective on how infections in children are viewed and managed in ayurveda.

It was a challenging task for the editors to understand the text of this article. To ensure accuracy and clarity, the editors consulted ayurvedic textbooks and sought the expertise of professionals in the field to better understand and verify the content.

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