

Scientific Study of Balagraha and its Management

Rekha V Shinde Assistant professor, dept of Kaumarbhritya, Datta Meghe Ayurvedic Medical College, hospital and research centre, Nagpur 440034.

Sunanda Patil Assistant professor, dept of Agadatrnta, N.K. Jabshetty Ayurvedic Medical College and P.G. Centre, Bidar, Karnataka.

Ninad Nagrale Associate Professor Dept. of Forensic medicine and Toxicology Datta Meghe Medical College, Nagpur

Swapnil Patond Associate Professor Dept. of Forensic medicine and Toxicology Jawaharlal Nehru Medical College, Datta Meghe Institute of Medical Sciences Sawangi (Meghe), Wardha

Address for Correspondence

Rekha V Shinde

Assistant professor,

dept of Kaumarbhritya,

Datta Meghe Ayurvedic Medical College, hospital and research centre, Nagpur 440034.

Abstract

Background – Graharogas are special topic which constitutes the major portion of Kaumarbhritya. According to Ayurvedic principals ‘Disease can’t exist without a cause’, of course many times it is invisible, as invisible entities are more than visible entities. Invisible causes of disease are termed as Graharoga, Jatharini. Even diseases cannot be attributed to Bhootadi causes, when symptomatology does not match. Hence Graharogas are counted among the invisible causes of disease. **Aim-** to study the Graharoga and its management principals mentioned in Ayurvedic classics scientifically. **Materials and Methods-** Materials used for this literature review is obtained from original Ayurvedic classics; Brihatrai and Laghutrai samhitas along with relevant textbooks of Ayurveda and modern science of medicine. Literature reviewed from classics is analyzed scientifically with deep understanding of the concept putted inside the topic. The analyzed data with scientific contribution of different authors of expertise along with chronological progression of topic with further need to be done inside the study. **Results** -Balagrahas are the infectious diseases which are caused by unhygienic conditions in the children. **Conclusion** – Heal the atmosphere and the healed atmosphere will heal you....!!!

Keywords: Epidemiology, Infectious diseases, Balagraha, Balroga, Kumarbhritya, Graharogas, Microorganisms.

Introduction

Ayurveda amongs its eight branches, also explains a branch by name Graha Chikitsa^[1]. In this branch, various Grahas have been described and its attack lead to various personality and behavioral changes in the patient and ultimately, that patient starts behaving like the actual Graha. But the symptoms are more subjective; hence, it is better to be called as Graha Badha.

Graha rogas are the special topic which constitutes major part of Kaumarbhritya. In the mean time, it is also the most neglected portion, may be due to excess mythological descriptions, difficulties in its clinical understanding, diagnosis and treatment^[2].

This universe is combination of visible and invisible entities. Population of invisible entities is more than visible entities. So we are surrounded by invisible microorganisms, around us. Most of the organisms are nature friendly and doesn't cause disease. Fungus, Bacteria's and virus play a significant role in decaying unwanted materials to maintain homeostasis of the environment. Moving around and a continuous effort to invade the human and animal body is a basic tendency of microorganism or Grahas. But intact immune system supported by hygienic lifestyle, food, habits prevents their entry and protects human body.

This review study aimed to understand the Balagrahas- what exactly they are? And how the Graharogas are different from other disorders? Symptoms of Balagrahas in Kaumarbhritya are more objective and less subjective.

In Charaka Samhita there is no explanation regarding the balgraha is found. Of course the word explained in relation to Unmada and Apasmaram as Gandharv Raksha sangrah, where personality changes and behavioral changes are more marked are explained and dealt with psychological disturbances rather than physical changes^[3]. The attack of the Grahas episodic and person showing deviation from the abnormal behaviour and personality changes are highlighted that it has been considered as the main cause for such a Grahavesh by Charaka. These Grahas are completely different from Balagrahs explained in Kaumarbhritya. Kashyapa samhita gives more importance to Graharoga.

Methodology:

Three types of infectious diseases are described in ayurveda

1. Janpadodwasnsa rogas^[4]
2. Sankramaka rogas(contagious diseases)- jwara kustha netrabhishandya^[5]
3. Graha rogas^[6]

Etiology of balagraha- the main reason for grahavesh is failure to follow the principles of hygiene. Unhygienic conduct of mother, frightening of the child or where benedictory rites are not performed the child is attacked by Graha^[7,8]

To understand the answers of the following questions this review study is designed

1. Understanding Bala Grahas: what actually Grahas are?
2. How Bala Graharogas are different from other disorders?
3. Why Grahas terns pathological?
4. What are the treatment principals of Bala Graharoga ?

Definition of Balagraha-

ग्रहैरपि हि जायन्ते प्रछन्नैर्व्याधय शिशो ।
कर्मशस्तमस्तेषुःदैवयुक्ताश्रयम् सदा ॥ अ.स.सु २/९८

One, which captures and seizes. Indicates the hidden disease. Both psychic and medical treatment is employed^[9].

Morphology- Grahas are described as some invisible living organisms, seen by divine eyes only. They change their shape and size^[10].

Habitat and properties- reside near cowsheds, water tank, roots of trees, abandoned houses. They are said to infect milk of the mother and vitiate^[11]. The word seizure (convulsion) has come up probably to indicate their nature of seize to human beings. Thus are described as some living beings with contagious property, residing in unclean places protected from sunlight and have ability to feed on blood and meat.

Mythological concept

पुरा गृहस्य रक्षार्थम् निर्मिता शूलपाणिना । अ.स

Produced from Shiva and Parvati; Purpose is to protect their son; Grahas are produced for protective purpose.^[12, 13]

(Micro organism serves the function of Raksha to the body due to lifelong immunity acquired after infection).

Causes of Graha attack

धात्री मात्रो प्राक्प्रदिष्टापचारात् शौचभ्रष्टात् मङ्गलाचारहीनान् ।

त्रस्तान् हृष्टान् तर्जितान् वा पूजाहेतोर्हिन्स्युरेते कुमारान् ॥

Improper and unhygienic behaviour of mother and dhatri ; Not following sadavritta and swasthavritta; Fearful conditions for child; Disrespect to saints and teachers; Taking food in broken kasya patra; Psychologically unwell child; Child carried lonely and inauspicious places.

Nature of graha

आविशन्तश्च लक्ष्यन्ते केवलम् शास्त्रचक्षुषा A.S.

एश्वर्यस्थास्ते न शक्या विशन्तो देहम् द्रष्टुम् मानुषैर्विश्वरूपा ।

आप्तम् वाक्यम् तत्समीक्ष्याभिधास्ये लिंगानि एषाम् यानि देहे भवन्ति ॥ S. U.

Suksma sharer; Microscopic in nature; Attain different shapes; Seen only by divine eyes

Etio- pathology

Agantuja in nature; No vitiation of Dosha initially; Enter the body just like Suryakirana enter in to earth.

Affects the child with three aims-

1. Himsa
2. Rati
3. Archana^[14]

Prodromal features

तेषां ग्रहीष्यतां रूपं प्रततम् रोदनं ज्वरः । A.S.

Prodromal features of Balagrahas are- Continuous crying and fever^[15].

General symptoms

सामान्यम् रूपमत्रासजृम्भाभ्रक्षेपदीनताः ।

फेनस्रावोर्ध्वं दृष्ट्योष्ठदन्तदंशप्रजागराः ॥

रोदनं कूजनं स्तन्यविद्वेष स्वरवैकृतम् ॥ A.H

Acute infection causes fever or some neurological symptoms ending into a seizure attack.

A child attacked by balgraha exhibits a symptom complex of behavioral , neurological, and gastro intestinal disorders, sometimes eruption over the skin^[16, 17].

Classification of Grahas according to different samhitas-

Susruta – 9 graha^[18] (Ma. Ni. Bha.pr. Yo.R.^[19])

Table 1 Balagraha

1. Skandha	2. Skandha Apasmara
3. Shakuni	4. Putana
5. Andhaputana	6. Sheetaputana
7. Mukhamandika	8. Naigamesh
9. Revati	

Vagbhata- 12 (Sha.)

Above 9+ Swagraha, Pitruagraha, Shuskarevati.

Kashyapa

Clearly mentions 10 in no.(grahastu dasha kirtitaha)...sutrasthana^[20]

Given prime importance to Revati and has given 20 synonyms(kalpasthanas)

Also explained Vmana sadhya 4 and Virechana ssadhya 5 in chikitsa stana.

Hareeta -Explains only Putana graha and its 8 types

Charaka has not mentioned Balagraha but explains Graha as innumerable in number^[21].(Unmada apsmara chikitsa)

Prognosis^[22]

Attacking with intention of Himsa	Asadhya
Attacking with intention of Rati	Kasthasadhya
Attacking with intention of Archana	Sadhya

Treatment

1. Daiva Vyapasraya^[23]

- Manta Prayoga
- Swasti Vachana
- Bali
- Homa/ Havana

2. Yuktivyapasraya^[24, 25, 26]

- oushadhi dharana
- Snana
- Gritaprayoga
- Parisheka
- Lepa
- Dhoopana
- Avagaha

Skanda-Apsmara

संज्ञानाशो मुहुः केशलुचन कन्धरानतिः ।

विनम्य जृम्भमाणस्य शकृन्मूत्रप्रवर्तनम् ॥
फेनोद्वमनमूर्ध्वेक्षा हस्तपाद नर्तनम् ।
स्तनस्वजिह्वासन्दंश संरम्भज्वरजागरः ॥

A. S.

निःसंज्ञो भवति पुनर्भवेत् संसंज्ञः संरब्धः करचरणैश्च नृत्यतीव ।
विण्मूत्रे सृजति जृम्भमाणः फेनश्च प्रसृजतितत्सखाभिपन्नः ॥ सु.उ.२७/९

Symptoms resemble to Grandmal epilepsy-

The irregular convulsive movements of face and limbs; recurrent attacks of unconsciousness; Tonic clonic spasm of muscles; Urine and stools passes during attack; Biting of tongue or nipple^[27].

Skandagraha

तत्रैकनयनस्रावी शिरो विक्षिपते मुहुः ।

हतैकपक्ष स्तब्धांग सस्वेदो नतकन्धरः ॥

दन्तखादई स्तनद्वेषी त्र्यस्यन् रोदिति विस्वरः ।

वक्त्रवक्त्रो वमन लालां भृशमूर्ध्व निरिक्षते ॥

वसास्रगन्धिरुद्विग्नो बद्धमुष्टिशकृत् शिशुः ।

चलतैलाक्षिगण्डभ्रुः संरक्तोभयलोचनः ॥

स्कन्दार्तस्तेन वैकल्यं मरणं वा भवेद् धृवम् ॥ अ.सं.उ.३/१५-१७

Understanding of Skandagraha

Skanda graha resembles infection with polio virus as- Stiffness in the muscles of the body; Paralysis of the muscles of trunk and the extremities. Involvement of cranial nerves is seen in bulbar form of polio.

Polio infection either kills the child or leaves with disability. Facial palsy when there is bulbar involvement or polio encephalitis^[28].

Clinical features of poliomyelitis

Abortive polio- (No CNS involvement)

Fever, sore throat, nausea, vomiting, headache, un localized abdominal pain.

Non –paralytic poliomyelitis (CNS involvement)

The symptoms are headache, nausea, vomiting, stiffness of neck, trunk, back and legs. (Aseptic meningitis)

Paralytic poliomyelitis- The symptoms are muscle pain, spasm, fever, rapid onset of flaccid paralysis^[29].

Negamesh

आध्मान पाणिपादस्य स्पंदनं फेनर्वमिः।

तृणमुष्टिबन्धातीसारस्वरदन्य विवर्णताः।

ओष्ठदंशांससंकोच स्तम्भस्ताभगन्धताः॥

उर्ध्व निरिक्ष्य हसनं मध्ये विनमनं ज्वरः।

मूर्च्छकनेत्रशोफः च नैगमेष ग्रहाकृतिः। अ.सं.उ.३/१५-१७

The initial constitutional symptoms of fever, cough, recurrent vomiting, Excitability with stiffness of the body, especially of neck, some of the points designate Mesha graha as meningitis^[30].

Clinical features of Meningitis

Newborn - Refusal of feed, fever, decreased activity, shock, decreased tone, weak/absent of neonatal reflexes, stiffness of limbs, focal seizure, projectile vomiting.

Children - Fever, altered behavior, delirium, drowsiness, convulsion, neck stiffness^[31].

Shwagraha

कम्पो हृषितरोमत्वं स्वेदः च चक्षुर्निमीलनम् ।

बहिरायामनं जिह्वादंशोऽन्तः कण्ठकूजनम् ॥

धावनं विट्सगन्धत्वं क्रोशनं च श्र्वानवत् शुनिः ॥ अ.सं.उ.३/१५-१७

Pharynx and larynx producing throaty cooing or sounds like a dog; Jaw muscles bites the tongue;

Spasm of different group of muscles can occur in tetanus. But the peculiar symptom that the child makes sounds like a dog, Swagraha closure to rabies^[32].

Pitruagraha

रोमहर्षो मुहुत्रासः सहसा रोदनं ज्वरः ।

कासातिसार वमथु जृम्भा तृट्शवग्न्धिताः॥

अङ्.गेष्वाक्षेपशोष स्तम्भविवर्णताः।

मुष्टिबन्धः सुतिश्र्वाक्षणोर्बालस्य स्युः पितृग्रहे ॥ अ.सं.उ.३

The initial cough, fever, vomiting and loose motions, this type of infection is quite common in viral diarrhea, irritability, restlessness associated with dehydration and typical symptoms of electrolyte imbalance^[33].

Pootana

पूतनायां वमिः कम्पस्तन्द्रा रात्रौ प्रजागरः ।

हिध्माध्मानं शकृद्भेद्ः पिपासा मूत्रनिग्रहः ॥

सस्तहृष्टाङ्.गरोमत्वं काकवत् पूतिगन्धिताः ॥ अ.सं.उ.३

The symptoms are vomiting; loose motions; Irritability; restlessness. It resembles to gastro-enteritis with dehydration^[34].

Revati

रेवत्यां श्यावनीलत्वं कर्णनासाक्षिमर्दनम् ।

कासहिध्माक्षिविक्षेप वक्त्र वक्त्रत्वरक्तताः ॥

बस्तगंधो ज्वरः शोषः पुरिषं हरितं द्रवम् ॥ अ.सं.उ.३

The symptoms presented in Revati that of Diarrhea with fever and cough. Viral diarrhea^[35].

Shakooni

सस्ताङ्.गत्वमतीसारो जिह्वातालुगले व्रणाः ।

स्फोटाः सदाहरुक् पाकाः सन्धिषु स्युः पुनः पुनः ॥

निश्यन्ति प्रविलीयन्ते पाको वक्त्रे गुदेऽपि वा ।

भयं शकुनिगन्धत्वं ज्वरः च शकुनिग्रहे ॥

The symptoms are redness of muco-cutaneous junctions, ulcers in throat and mouth and fever.

The painful crop develops, burning blisters mostly in joints, recurring daily.

The crops come out in the night and get melted away in the day. The common peculiar entero- virus infection is known as hand foot mouth disease having rashes over buttock, hand, foot, and inside mouth. Plague is also kind of sickness in which such skin lesions are seen. Crops of painful blisters recurring daily and leaving ulcerated areas with fever and loose motions are characteristics of pemphigus^[36].

Different odors of graha roga

A typical smell from the body of graha rogi is special finding of graha roga. Each graha roga emits different kinds of smell.

Usually bad odour from the body and urine is a common manifestation of inborn or acquired metabolic disorders. Extreme unhygienic conditions resulting a bad smell. Toxic metabolites impart different colours of the urine as evidenced in DM, Phenyl ketonuria, Maple syrup syndrome.

Treatment principles of graha roga

Treatment of balgraha includes both Daiva and Yukti vyapashraya chikitsa. Principle followed in graha roga is almost anti-infective treatment.

Bath to a child

Bath is mentioned in all graha roga ;Medicated lukewarm bathing water helps to remove bad smell and gives freshness to the patient.This also removes the contamination of the skin by accumulation of unhygienic substances. Bathing should be done with the drugs of kashaya rasa. Bathing with drugs produces aromatic smell. Drugs mentioned for bath are-

Bala, Nimba, Agnimantha, Paribhadra, Jambu, Shonak, Varun, Apamarga, Patol, Shigru, Kapitha and Karanja.

Use of Grita

Pharmacologically, grita preparations help the chemical constituents to dissolve in lipid media and fascinating, its easy absorption. Grita is pitta anila hara and increase the rasa, shukra, varna, swara and oja. It is also grahadoshahara .

Dhoopana

This is very useful and effective method for prevention of graha roga.

Present day we use fogging methods for prevention of infection is of similar kind

Most of the dhoopana kalpas explained by Kashyapa are for graha roga nashana. If we assume that grahas are microorganisms then its natural anti infective property together with sterilization benefits of dhoopana are justified.

Common drugs used for dhoopana-

Kushta, putikaranja, karpas ,vacha, hingu, sarshapa, ajamoda, grita, guggula, bhallataka, laksha, haridra, tagara.

Benefits – living area, cloths, bed, personal belongings, cots and chairs can be fumigated to maintain aseptic measures.

Role of Mantra chikitsa

Vedic mantras are considered as best music of those days.

The mantras; when chanted in the rhythmic way creates sound waves of different wavelengths and amplitudes which are able to modulate the electromagnetic wave patterns of the brain.

Belief and faith plays a vital role in attitude. Mantra and Swasti vachana creates a positive environment upon which Yukti vyapashraya(medicine) will work.

Role of music therapy in treatment is a new topic now a days.(in stress disorders, malignancies.

- Daivavyapashrya is Adravayabhuta chikitsa which helps to correct disturbed mind.
- Every disorder is psycho-somatic disorder, it has clearly mentioned as manasa is responsible for happiness and sorrow.

Hence daivavyapasraya chikitsa should be employed by different methods to stabilize the mind.

Discussion – By considering all the above facts, Bala Grahas are living entities with microscopic nature. Graha could be invisible living entity, which can pass through different phases in its growth and is pathological or antigenic to the body. This points towards understanding of microorganisms with respect to Graha. So, Graha can be microscopic microorganism like virus, bacteria, fungus, yeast, amoeba or larva of different worms which is invisible to naked eyes. Nature of Graha is that which can frequently change their size and shape. This is also witnessed in microorganisms like virus- bacteria's. Micro organism's causes generalized pathological changes in the body with multisystem involvement. The cause of disease according to Ayurveda is Adharma and it refers to faulty methods of living in terms of hygiene, food, regimen, lifestyle, conduct, thinking make human body more vulnerable to invasion to microorganisms. Balagraha rogas are different to other disorders because of they are separate entity from other general disorders with respect to different etiological factors, symptoms and management. Certain undefined, uncommon factors are responsible for such disorders. Total manifestation of symptoms, complications, pathology is very fast and severe with difficulties in diagnosis and treatment. These all the elements are freely moving in universe and are invisible due to their microscopic nature. Grahas are produced for protective purpose; microorganism serve the function of Raksha in the form of developing lifelong immunity to the body acquired after infection. Grahas turns pathological due to human errors (pradnyaparadh), unhygienic lifestyle, food and regimen^[37].

Conclusions -

Graham rogas could be understood as-

- Graha rogas couldn't is exactly related to any disease.
- Actually it's not disease, these are syndromes.
- The concept of micro organism do well support to relating to all graha with viral etiology
- These are pediatric viruses primarily affecting children only and not to parents.
- Graha rogas have extreme severity so they could be considered as acute viral infections.
- Grahas were being made to safeguard the kartikeya; it could be consider as once a child had an infection with a specific entero virus, the child is typically immune to that particular virus.

References:

1. Dr. Brahmhananda Tripathi, Ashtanga Hridaya, Published by Chaukhamba Sanskrita Pratishtana Delhi 2012, Sutrasthana 1/5 Page no. 05.
2. Acharya's Text book of Kaumarbriya vol.2. Srinidhi kumar Acharya, Chaukhamba Orientalia, Varanasi. p. no.176, chpt. No.22.

3. Vd. Y. G. Joshi, Editor, Charaka samhita, Vimansthana, adhyaya 6, Reprint 2003 Vaidyamitra publication Pune 2003, sloka 21. P.no. 584
4. Vd. Y. G. Joshi, Editor, Charaka samhita, Vimansthana, adhyaya 3, Reprint 2003 Vaidyamitra publication Pune 2003, 515-530.
5. Vd. Y. G. Joshi, Editor, Charaka samhita, Nidansthana, adhyaya 1, Reprint 2003 Vaidyamitra publication Pune 2003, 425.
6. Vd. Y. G. Joshi, Editor, Charaka samhita, Nidansthana, adhyaya 7, Reprint 2003 Vaidyamitra publication Pune 2003, 480-487.
7. Kaviraj Ambikadatta Shastri, Editor, Sushruta Smhita, Hindi commentary, Uttartantra 27, 6-7. Reprint 2013, Chaukhamba Sanskrita Sansthana Varanasi 2013, 66.
8. Dr. Shivaprasad Sharma, Ashtanga sangraha, with Shashilekha Sanskrita commentary by Indu, Published by Chaukhamba Sanskrita Sansthana Varanasi 2006, Uttartantra 2/1-10.
9. Dr. Shivaprasad Sharma, Ashtanga sangraha, with Shashilekha Sanskrita commentary by Indu, Published by Chaukhamba Sanskrita Sansthana Varanasi 2006, Uttartantra 2/98.
10. Dr. Shivaprasad Sharma, Ashtanga sangraha, with Shashilekha Sanskrita commentary by Indu, Published by Chaukhamba Sanskrita Sansthana Varanasi 2006, Uttartantra, 3/35.
11. Kaviraj Ambikadatta Shastri, Editor, Sushruta Smhita, Hindi commentary, Uttartantra 27, 18-21. Reprint 2013, Chaukhamba Sanskrita Sansthana Varanasi 2013.
12. Dr. Brahmhananda Tripathi, Ashtanga Hridaya, Published by Chaukhambha Sanskrita Pratishtana Delhi 2012, Uttartantra 3/1 Page no 899.
13. Kaviraj Ambikadatta Shastri, Editor, Sushruta Smhita, Hindi commentary, Uttartantra 37, 4. Reprint 2013, Chaukhamba Sanskrita Sansthana Varanasi 2013, 199.
14. Dr. Brahmhananda Tripathi, Ashtanga Hridaya, Published by Chaukhambha Sanskrita Pratishtana Delhi 2012, Uttartantra 3/32 Page no. 900.
15. Dr. Brahmhananda Tripathi, Ashtanga Hridaya, Published by Chaukhambha Sanskrita Pratishtana Delhi 2012, Uttartantra 3/40-41 Page no. 904.

16. Dr.Brahmhananda Tripathi, Ashtanga Hridaya, Published by Chaukhambha Sanskrita Pratishtana Delhi 2012, uttartantra 3/4-5 Page no.901.
17. Dr. Shivaprasad Sharma, Ashtanga sangraha, with Shashilekha Sanskrita commentary by Indu, Published by Chaukhamba Sanskrita Sansthana Varanasi 2006, Uttartantra, 3/19.
18. Kaviraj Ambikadatta Shastri, Editor, Sushruta Smhita, Hindi commentary, Uttartantra 27, 4-5. Reprint 2013, Chaukhamba Sanskrita Sansthana Varanasi 2013, 183.
19. Vaidya Shri Laxmipatishasri, Yogaratnakara, Vidyoniti hindi tika, Published by Chaukhamba pakashana, Varanasi, 2017, Balroga chikitsa adhyaya, p. no. 447.
20. Prof. P. V. Tewari, Kashyapa Samhita or Vriddhajivaka Tantra, Published by Chaukhambha Vishwabharati Prakashana Varanasi 2016, Sutrasthana 27/56 Page no. 46.
21. Vd. Y. G. Joshi, Editor, Charaka samhita, Vimansthana, adhyaya-8/21, Reprint 2003 Vaidyamitra publication Pune 2003, sloka 21. P.no. 575.
22. Dr.Brahmhananda Tripathi, Ashtanga Hridaya, Published by Chaukhambha Sanskrita Pratishtana Delhi 2012, uttartantra 3/33-34 Page no.903.
23. Dr.Brahmhananda Tripathi, Ashtanga Hridaya, Published by Chaukhambha Sanskrita Pratishtana Delhi 2012, uttartantra 4/15-21, Page no.908-909.
24. Prof. P. V. Tewari, Kashyapa Samhita or Vriddhajivaka Tantra, Published by Chaukhambha Vishwabharati Prakashana Varanasi 2016. Chikitsasthana, Page no. 104-105.
25. Dr.Brahmhananda Tripathi, Ashtanga Hridaya, Published by Chaukhambha Sanskrita Pratishtana Delhi 2012, uttartantra 3/58-60 Page no.906.
26. Kaviraj Ambikadatta Shastri, Editor, Sushruta Smhita, Hindi commentary, Uttartantra 29, 4. Reprint 2013, Chaukhamba Sanskrita Sansthana Varanasi 2013, 189.
27. Acharya's Text book of Kaumarbritya vol.2. Srinidhi kumar Acharya, Chaukhamba Orientalia, Varanasi. p. no.215, chpt. No.22.
28. Acharya's Text book of Kaumarbritya vol.2. Srinidhi kumar Acharya, Chaukhamba Orientalia, Varanasi. p. no.211, chpt. No.22.

29. Poliomyelitis in Western Pacific, <https://www.who.int/westernpacific/health-topics/poliomyelitis>

30. Acharya's Text book of Kaumarbritya vol.2. Srinidhi kumar Acharya,Chaukhamba Orientalia, Varanasi.p. no.219-222, chpt. No.22.

31. Meningitis Symptoms in Children, <https://www.meningitis.org/meningitis/checksymptoms/toddlers>

32. Acharya's Text book of Kaumarbritya vol.2. Srinidhi kumar Acharya,Chaukhamba Orientalia, Varanasi.p. no.251-252, chpt. No.22.

33. Acharya's Text book of Kaumarbritya vol.2. Srinidhi kumar Acharya,Chaukhamba Orientalia, Varanasi.p. no.252--253, chpt. No.22.

34. Acharya's Text book of Kaumarbritya vol.2. Srinidhi kumar Acharya,Chaukhamba Orientalia, Varanasi.p. no.224-235, chpt. No.22.

35. Acharya's Text book of Kaumarbritya vol.2. Srinidhi kumar Acharya,Chaukhamba Orientalia, Varanasi.p. no.238-250, chpt. No.22.

36. Prof. P. V. Tewari, Kashyapa Samhita or Vriddhajivaka Tantra, Published by Chaukhambha Vishwabharati Prakashana Varanasi 2016.Chikitsasthana, Page no. 104.

37. Rekha V. Shinde, Ranjit Ambad, Sunanda C. Patil, Parag Aradhey. A Prospective Observational Case Series of Liver Injury in Paediatric Patients Secondary to Consumption of Ayurvedic Herbomineral Formulations. Indian Journal of Forensic Medicine & Toxicology, October-December 2020, Vol. 14, No. 4; 7121-7125.

Acknowledgement: Author's acknowledge the immense help received from Datta Meghe Ayurvedic Medical College, Hospital and Research Centre Nagpur for concluding the present study.

Conflict of interest: None.