Review Article

World Journal of Pharmaceutical and Life Sciences
WJPLS

www.wjpls.org

SJIF Impact Factor: 7.409

"THERAPEUTIC POTENTIAL OF SWALPA CHETASA GHRITA IN PURVIEW OF CHILDHOOD AUTISM: A LITERARY REVIEW"

Rao Vasuki N.*[1] and N. Poornima*[2]

[1]*Final Year PG Scholar, [2]*Associate Professor
Department of Kaumarbhritya, Sri Dharmasthala Manjunatheshwara Institute of Ayurveda & Hospital, Bengaluru-560074, Karnataka, India.

*Corresponding Author: Rao Vasuki N.

Final Year PG Scholar, Department of Kaumarbhritya, Sri Dharmasthala Manjunatheshwara Institute of Ayurveda & Hospital, Bengaluru-560074, Karnataka, India.

ABSTRACT

Introduction: Ayurveda is an ancient science which deals with various modes of drug administration and also forms of drugs which hold relevance even till today. One such mode and form of drug administration is gritha. Among the innumerable gritha formulations described in our classics, is swalpa chetasa ghritha. It is a polyherbal formulation explained in the context of unmada in Bhaishajya Rathnavali. By studying efficacy of the ingredients and phalashruthi of this drug, was selected for our present study and administered as Shodhananga Snehapana as poorvakarma for virechana. This study is an attempt to review this unexplored drug. **Aim:** This review article is an attempt to analyse the probable mode of action of swalpachetasa ghrita in Childhood Autism. **Results:** While analysing the Rasapanchaka Ayurvedic Principles of Drug-Action, it is found that of the 43 ingredients, 15 drugs are having Tikta rasa, 22 with Laghu guna, 19 with Ushna veerya and 18 with Katu vipaka. Considering Doshaharatwa, 12 drugs are Kapha-pittahara. All these properties are against Kapha dosha.

KEYWORDS: Mode of action, Swalpachetasa Ghrita, Unmada, Childhood Autism.

INTRODUCTION

Swalpa chetasa ghrita[1] is a compound herbal oleaginous formulation prepared by infusing active phytoconstituents of 43 different specified herbs in Goghrita, following the principles of Sneha Kalpana.

The word chetas literally means manas or chitta from which one can know the importance of this drug in case of unmada and apasmara.

The reference of swalpa chetasa ghrita is first found in Chakradatta as chetasa gritha, which is further explained in Bhaishajya Rathnavali as Swalpa chetasa gritha.

Acharya have explained this gritha under unmada adhikara indicating the direct effect of this gritha on the psychiatric disorders. Childhood Autism is a severe developmental disorder characterized by abnormalities in social functioning, language and communication and unusual interests and behavior".[2]

Here we are assessing the effect of this gritha as shodhananga snehapana on the condition Childhood Autism.

MATERIALS AND METHODS

Data was collected by thorough literature review of Samhitas (classical texts), Nighantus (lexicons) and published research articles.

Autism is a disorder of neural development characterized by impaired social interaction and communication, and by restricted and repetitive behavior. The diagnostic criteria require that symptoms become apparent before a child is 3-year-old.

It is perhaps the commonest of the pervasive developmental disorders with considerable genetic etiological factors.[2]

The aetiology of ASD is thought to result from disrupted neural connectivity and is primarily impacted by genetic variations affecting early brain development.

Genetic and environmental factors such as older maternal and paternal age may increase the risk of ASD. In addition, prenatal factors such as maternal obesity, short interval between pregnancies, premature birth and prenatal infections such as TORCH are associated with ASD.[8]

The clinical features of ASD can be divided into various domains such as:

Spoken language- language delay or regression in, or loss of use of speech, echolalia Absent or delayed response to the name despite normal hearing, absent or reduced responsive social smiling, reduced or absent responsiveness.

Reduced or absent awareness of personal space or absent social interest in others.

Eye contact, Pointing or other gestures- reduced or absent

Unusual or restricted interests and/or rigid and repetitive behaviours- stereotypic movements such as hand flapping, body rocking.

Stereotyped play- opening and closing door Excessive reaction to the taste, smell, texture, or appearance of food, smell, texture or appearance of the food.[3]

By looking into the features of Autism, it can be corelated to the disease unmada in Ayurveda.

Ayurveda describes almost all the psychiatric and behavioral disorders under unmada. Unmada is a disease featured by unstable intellect, mind, knowledge, memory, consciousness, inclination, and poor conduct and bad manners. The etiological factors consist of intake of unhygienic, improperly processed, incompatible diet and irregular dietetic habits. Inappropriate physical activities by a very weak person and psychological disturbances caused due to over consciousness about illness, emotional instability like excessive anger, grief, irritability, fear, etc., results in the decline of balanced psychological functions in a person. Satwaguna tend to decrease in the person due to the above factors resulting in tridosha getting localized in hridaya, causing diminished functioning mental faculty and causing unmada. Due to loss of intellect, knowledge, and memory, the person does not experience happiness and sorrow.[4]

Table 1: Types of Unmada according to various Acharya.

TYPES OF UNMADA ACCORDING TO VARIOUS ACHARYA			
	CHARAKA[5]	SUSHRUTHA[6]	VAGBHATA[7]
VATAJA	+	+	+
PITTAJA	+	+	+
KAPHAJA	+	+	+
SANNIPATAJA	+	-	+
AAGANTUJA	+	-	-
SHOKAJA	-	+	-
VISHAJA	-	+	+
CHITTAGHATAJA	-	-	+
DWANDWAJA	-	-	-

Table 2: Symptoms of Different types of Unmada.[8]

VATAJA	PITTAJA	KAPHAJA
•ASTHANA HASA •SMITHA •NRUTHYA •GEETHA •VAAK •ANGA VIKSHEPANA •RODANA •KARSHYA •JEERNE BALI	•AMARSHA •SAMRAMBHA •VINAGNABHAVA •SANTARJANA •ATI USHNATA •ROSHA •PRACHAAYA, SHEETHA JALABHILASHI •PEETATA	•VAAK CHESHTA MANDA •AROCHAKA •VIVIKTHA PRIYATHA •ATINIDRA •LALA SRAVA •SHUKLATHA

There are many different mental disorders, with different presentations. They are generally characterized by a combination of abnormal thoughts, perceptions, emotions, behaviour and relationships with others.

Mental disorders include: depression, bipolar affective disorder, schizophrenia and other psychoses, dementia, intellectual disabilities and developmental disorders including autism.[9]

Ghrita is the best of all fats. It is one of the Nitya Rasayanas mentioned in Ayurveda which possess multi-systemic benefits.

It is a dietary supplement as well as a drug in its purest form and in combinations. It is sweet in taste, provide unctuousness and softness to the body tissues and cold in potency.

The properties of Ghrita are to alleviate Vata and Pitta without increasing Kapha much.

It enhances the digestive fire, improves eyesight, intelligence, memory, vitalizes the body and gives luster. It improves semen and Ojus- the ultimate end product of assimilation.

Ghrita is known best for treating poisoning, insanity, seizures, pain, fever, phthisis etc. it is said to reduce inauspiciousness and provide protection.

The most highlighted property of Ghrita is that it assimilates the property of the drug added to it providing a synergetic action in combination.

SWALPA CHETASA GRITHA

Let us analyse the ingredients and indications of Swalpa chetasa Gritha which is a hidden gem in the classics to treat Unmada.

This gritha has not been prepared and used in the recent known times. So, the study of this drug becomes a novel study.

Table 3, 4: Ingredients of Swalpa chetasa Gritha along with their description.

SL. No	Drug	Botanical Name	Family	Synonyms	Chemical Constitents	Part used
1	Bilwa	Aegle marmelos	Rutaceae	Maloora, gandhapatra	Marmelosin, tannic acid	Moola
2	Agnimantha	Premna serratifolia	Verbenaceae	Arani, jayanthi, tarkari	Beta-sitosterol Luteolin	Moola
3	Shyonaka	Oroxylum indicum	Bignonaceae	Tuntuka Ari simbi	Baicelein, Tetuin	Moola
4	Patala	Stereospermum suaveolens	Bignonaceae	Krushna vrunta, alivallabha	Beta- sitosterol Lapachol	Moola
5	Bruhati	Solanum indicum	Solanaceae	Simha, kshudrabhantaki	Solanine Carotene	Moola
6	Kantakari	Solanum xanthocarpum	Solanaceae	Vyaghree	B-carotene, disgenin	Moola
7	Prushniparni	Uraria picta	Fabaceae	Prithakparni Kalashi		Moola
8	Shaliparni	Desmodium gangeticum	Fabaceae	Vidarigandha Anshumathi Saumya		Moola
9	Gokshura	Tribulus terrestris	Zygophyllaceae	Ikshugandhika Trikantaka		Moola
10	Rasna	Alpenea calcarata	Asteraceae	Elaparni, surabhi, rasna, shreyasi	Moretenol, neolupenol, Stigmasterol	Moola
11	Eranda	Ricinus communis	Euphorbiaceae	Gandharva hasta, panchangula, deergha danda	Ricinine, lupeol	Moola
12	Trivrut	Operculina terpethum	Convolvulaceae	Tribhandi, suvaha, rechani	B-turpethins Scopoletin	Moola
13	Bala	Sida cordifolia	Malvaceae	Vatya, vinaya, sitapaki	Ephedrine, hypaphorine	Moola
14	Murva	Marsdenia tenacissima	Asclepidaceae	Peeluparni, madhurasa, devi	Marsdenin, glycosides, saponins	Moola
15	Shatavari	Asparagus racemosus	Liliaceae	Shatapadi Bahusuta	Shatavarin 1 to 4 sistosterol, sponin	Moola

Sl. No	Drug	Botonical name	Family	Synonyms	Chemical constituents	Part used
1	Haritaki	Terminalia chebula	Combretaceae	Abhaya, pathya, amritha, avyata, devi	Chebulic acid, tannic acid, ellagic acid	Phala
2	Amalaki	Embelica officinalis	Euphorbeaceae	Dhatri, tishyaphala, amruthaphala	Gallic acid Chebulagic acid Corilagin	Phala
3	Vibhitaki	Terminalia bellerica	Combretaceae	Karshaphala Kalidruma		Phala
4	Vishala/ indravaruni	Citrullus colocynthis	Cucurbitaceae	Gavakshi, chita, pita pushpa		Moola
5	Bhadra ela	Amomum subulatum	Zingiberaceae	Puta, bahula	Cardamomin Alpenetin	Phala beeja
6	Daruharidra	Berberis aristata	Berberidaceae	Darunisha, peetadru rajani	Berberine Isoquinoline	Kaanda
7	Elavaluka	Prunus cerasus	Rosaceae	Eleya,sugandhi harivaaluka, elavaluka		Moola
8	Sariva	Hemidesmus indicus	Apocyanaceae	Prataanika,ananta,sugandhim oola	Hemidesmin 1&2,rutin,he midesminine	Moola
9	Krishnasariva	Ichnocarpus	Apocyanaceae	Prataanikaananta, sugandhi	Hemidesmin 1&2,rutin,	Moola

			frutescens		moola		hemidesminine		
10	Haridra	Curcuma longa	Scitamineae	Kanchani nisha yoshitapriya			Kanda
12	Prushniparni	Uraria picta	Fabaceae	Prithakparnikalashi			Moola
13	Shaliparni	Desmodium gangeticum	Fabaceae	Vidarigandha anshumathi saumya			Moola
14	Priyangu	Callicarpa macrophylla	Verbenaceae	Gandhaphali, phalini, asthibandhana	Calliterpenone, crategolic acid		Moola
15	Tagara	Valeriana wallichii	Valerianaceae	Natam, kutila, vakra	Cyclopentapyrans, acacetin		Moola
16	Bruhati	Solanum indicum	Solanaceae	Simha, kshudrabhantaki	Solanine carotene		Moola
17	Kushta	Saussurea lappa	Asteraceae	Kashmira Vapya	Terol Sitosterol		Moola
18	Manjishta	Rubia cordifolia	Rubiaceae	Vikasa, jingi, raktanga			Moola
19	Nagakesara	Mesua ferra	Guttiferae	Ahipushpa Champeya	Mesuol Mammegin Mammeisin		Kesara
20	Dadima	Punica granatum	Punicaeae	Phalamla, kuchaphala,rakthabeeja, lohithapushpaka	Hydrolyzable tannins, ellagic acid, gallic acid		Beeja
21	Vidanga	Embelia ribes	Myrsinaceae	Jantu hantri, krimighna, chitra tandula			Phala
22	Talisapatra	Abies webbiana	Pinaceae	Patradhya Madhurapatra			Patra
23	Ela	Eleeteraia cardamomum	Scitaminae	Chandra Chandrabala	Pinene, terpineol		Phala
24	Malathi pushpa	Jasminum sambac	Oleaceae	Surapriya Rajaputri	Benzyl acetate Phytol		Pushpa
25	Utpala	Nymphaea nouchali	Nymphaeaceae	Kumuda Abja, abda	Nymphalin Kaempferol		Pushpa
26	Danti	Baliospermum montanum	Euphorbiaceae	Erandaphala, sheeghra	Baliospermin Montanin		Moola
27	Padmaka	Prunus cerasoides	Rosaceae	Suprabha, padmavarna, maruchitra	Puddumin-a, stigmasterol		Pushpa
28	Hima	Santalum album	Santalaceae	Gandhasara, malayaja	Santenone, santalol		Kanda sara

Table 5: Rasa panchaka of ingredients of Swalpa Chetasa Gritha.

KWATHA DRAVAYA

SL. No.	Drug	Rasa	Guna	Veerya	Vipaka	KARMA
1	Bilwa	Madhura	Laghu rooksha	Ushna	Katu	Tridoshahara
2	Agnimantha	Tikta kashaya katu madhura	Laghu rooksha	Ushna	Katu	Vata kaphahara
3	Shyonaka	Madhura tikta kashaya	Laghu rooksha	Ushna	Katu	Kaphavata hara
4	Patala	Tikta kashaya	Laghu rooksha	Anushna	Katu	Tridoshahara
5	Bruhati	Katu tikta	Laghu rooksha	Ushna	Katu	Kapha vatahara
6	Kantakari	Katu tikta	Laghu rooksha teekshna	Ushna	Katu	Kapha vatahara Pittakara
7	Shaliparni	Madhura tikta	Guru snigdha	Ushna	Madhura	Tridoshahara
8	Prushniparni	Madhura tikta	Laghu snigdha	Ushna	Madhura	Tridoshahara
9	Gokshura	Madhura	Guru snigdha	Sheeta	Madhura	Tridoshahara
10	Rasna	Tikta	Guru	Ushna	Katu	Kapha vatahara
11	Eranda	Madhura katu kashaya	Snigdha teekshna sookshma	Ushna	Madhura	Kapha vata hara
12	Trivrut	Tikta katu	Laghu rooksha	Ushna	Katu	Pitta kaphahara Vatakara
13	Bala	Madhura	Guru snigdha picchila	Sheeta	Madhura	Tridoshahara
14	Murva	Tiktha kashaya	Guru rooksha	Ushna	Katu	Tridoshahara
15	Shatavari	Madhura tikta	Guru snigdha	Sheetha	Madhura	Vata pittahara

Kalka Dravya

SL. No.	Drug	Rasa	Guna	Virya	Vipaka	Karma
1	Haritaki	Madhura, amla, katu, tikta, kashaya	Laghu, ruksha sara	Ushna	Madhura	Deepani, medhya, rasayana, brimhani, anulomani, tridoshahara
2	Amalaki	Madhura, amla, katu, tikta, kashaya	Laghu, ruksha sara	Sheeta	Madhura	Rasayana tridoshahara
3	Vibhitaki	Kashaya	Laghu ruksha, sara	Ushna	Madhura	Kaphapittahara
4	Vishala	Tikta	Laghu sara	Ushna	Katu	Pitta kapha hara
5	Bhadraila	Katu	Laghu ushna	Ushna	Katu	Deepana kapha pitta hara
6	Devadaru	Tikta	Laghu snigdha	Ushna	Katu	Kapha pitta hara
7	Elavaluka	Kashaya	Laghu	Seetha	Katu	Kapha pitta hara
8	Sariba	Madhura	Snigdha guru	Seetha	Madhura	Deepana, tridoshahara
9	Krishna sariba	Madhura	Snigdha guru	Seetha	Madhura	Deepana, tridoshahara
10	Haridra	Katu tikta	Laghu ruksha	Ushna	Katu	Kapha pitta hara
11	Daruharidra	Katu tikta	Laghu ruksha	Ushna	Katu	Kapha pitta hara
12	Prishniparni	Madhura	Laghu sara	Ushna	Madhura	Tridoshahara
13	Shalaparni	Tikta madhura	Guru	Ushna	Madhura	Tridoshahara, rasayana, brimhana
14	Priyangu	Tikta kashaya	Guru ruksha	Seetha	Katu	Vatapittahara, bhranti, moha
15	Nata	Madhura	Laghu snigdha	Ushna	Katu	Tridoshahara
16	Brihati	Katu tikta	Laghu	Ushna	Katu	Kapha vatahara
17	Kushta	Katu madhura tikta	Laghu	Ushna	Katu	Vatakaphahara
18	Manjishta	Madhura tikta kashaya	Guru	Ushna	Katu	Kapharaktahara
19	Nagakesara	Kashaya	Laghu ruksha	Ushna	Katu	Kaphapitta hara
20	Dadima	Madhura kashaya	Laghu snigdha	Ushna	Amla	Tridoshahara, tarpana, medhavaham
21	Vella	Katu	Teekshna ruksha laghu	Ushna	Katu	Deepana, kapha vata hara
22	Talisapatra	Tikta madhura	Laghu teekshna	Ushna	Katu	Kapha vata hara, deepana
23	Ela	Katu	Laghu	Seetha	Madhura	Vata hara
24	Malatimukula	Tikta kashaya	Laghu	Ushna	Katu	Anila rakta hara
25	Utpala	Madhura	Guru ruksha	Seetha	Madhura	Kaphapittahara
26	Danti	Katu	Laghu sara teekshna	Ushna	Katu	Deepan, pittakaphahara
27	Padmaka	Kashaya tikta	Laghu	Seetha	Katu	Kapha pitta hara
28	Hima	Tikta	Ruksha laghu	Seetha	Katu	Kapha pitta hara
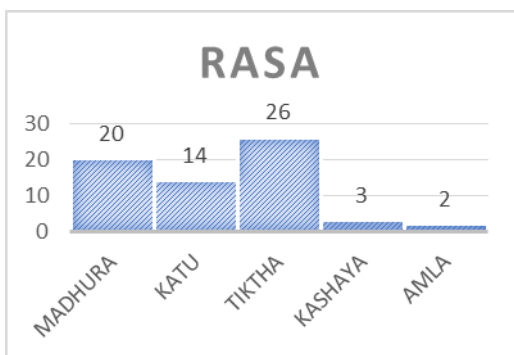
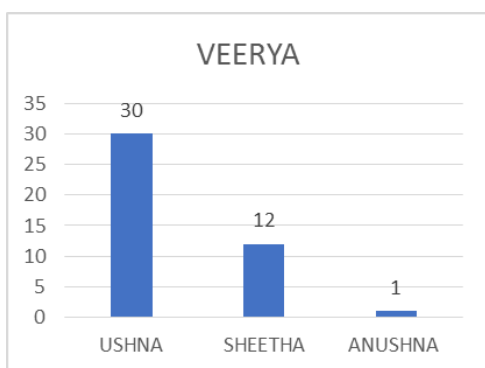**Figure 1: Rasa**
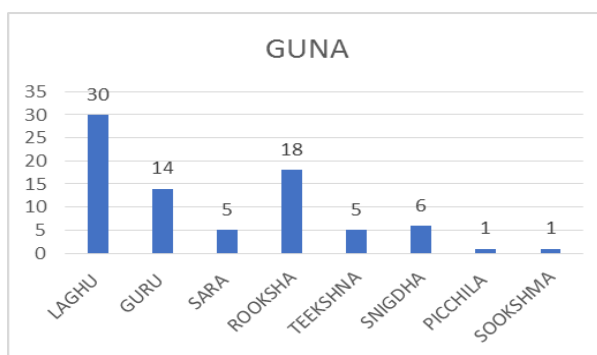
Figure 2: Guna
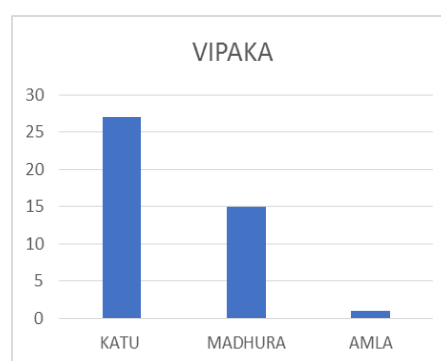

Figure 3: Veerya.
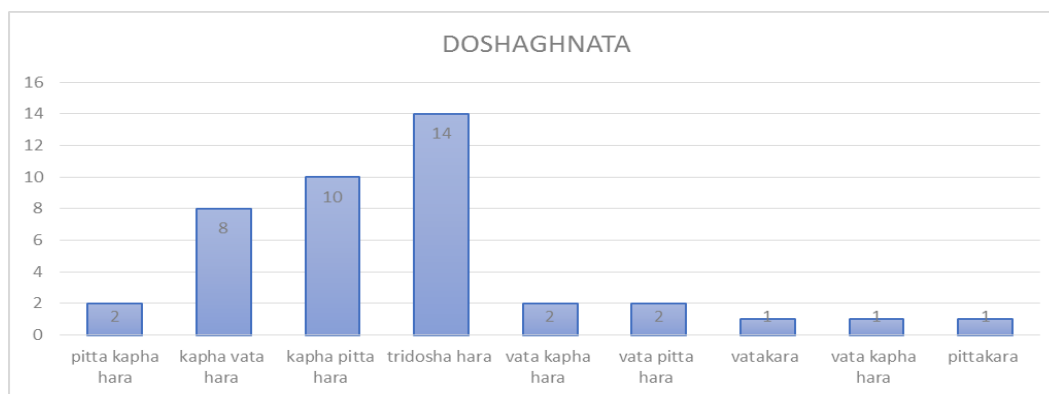

Figure 4: Vipaka.

Figure 5: Doshagnatha of Various Ingredients of Swalpa Chetasa Gritha.

The Rasa, Guna, Veerya, Vipaka, and Doshaghnata of swalpa chetasa gritha are well depicted.

Out of 43 herbs, there is a predominance of Tikta, Madhura, Katu, and Kashaya Rasa, whereas Amla Rasa was found in very minor percentage.

However, Lavana Rasa was absent in all herbs of Swalpa chetasa gritha.

Among guna of swalpa chetasa gritha herbs, majority herbs are laghu, ruksha, snigdha, tikshna, and guru in nature.

In terms of veerya Of herbs of swalpa chetasa gritha majority are ushna veerya.

The overall vipaka of swalpa chetasa gritha herbs is majorly katu and Madhura in vipaka.

However, only one herb is found to be Amla, Vipaka in nature.

The doshaghnatha of this gritha is predominantly, tridoshahara in nature.

Considering all these factors, the gritha becomes effective in the treatment of Childhood Autism which can be considered as Vata- pitta pradhanaja Unmada.

Research
Many drugs are scientifically proved in insanity or conditions of the brain which are very close to it like,
- Terminalia chebula in Alzheimer's disease
- Emblica officinalis in insanity
- Cedrus deodara (Roxb. ex D.Don) G.Don as anxiolytic neuroleptic and anticonvulsant**,** modulate cerebral blood flow
- Curcuma longa L in major depression,
- Pseudarthria viscida as neuro-protective
- Valeriana wallichii as anti depressant, improves sleep and neuro-protective
- Rubia cordifolia as having anti stress and nootropic action
- Punica granatum as Antidepressant and having Anti-Anxiety Effect
- Embelia ribes having antidepressant-like activity
- Elettaria cardamomum having Antidepressant and Anti-Anxiety Effect
- Jasminum sambac having anti stress effect
- Santalum album is sedative and neuro protective[10]

DISCUSSION
Role of Ghrita
Among all the Snigdha (unctuous) substances, Ghrita is considered as best in Ayurveda.

It is one of the Nitya Rasayanas mentioned in Ayurveda.

The most peculiar property of Ghrita is that it imbibes the property of the drug added to it providing a synergetic action in combination.

The most important cause of Unmada is described as Heena satwa of an individual. They will be mentally weak. Their Ojas will be affected. This depletion can be compensated by Ghrita.

Inauspicious things like disrespecting elders are one cause of Unmada. Ghrita has the property of destroying inauspiciousness and giving protection.

Vata dosha is the controller of the mind and Medha is the property of Pitta. So normalcy of Pitta and Vata are major concerns in the treatment of psychiatric illness like Unmada which can be done by the Vatapitta hara property of Ghrita.

The influential factors of drug distribution in blood are mainly difference in blood flow, lipid solubility and ionization.

An aqueous soluble drug is usually absorbed in extra cellular spaces. They do not diffuse to CSF and other body cavities, whereas lipid soluble drugs are readily available to extra and intra cellular spaces.

Blood brain barrier (BBB) has a lipophilic molecular structure. This makes the lipids and lipid soluble drugs pass easily through BBB. So the drugs which are given

in the form of ghee which are lipids rapidly absorbed in the target areas of central nervous system.

Traditionally prepared ghee contains DHA, an omega 3 long chain poly unsaturated fatty acid. This is seen in high concentration in brain cells too.

Moreover, studies have shown that DHA have positive outcome in cognitive decline. Ghee is known to have antioxidant property which acts upon the degenerative brain cells and repair them. It also acts in normalizing the chemical changes in brain by balancing the neurotransmitters.

By applying loka-purusha samya vada, it can be said Mastishka (brain) which resembles molten ghee can be supplemented with clarified butter in various therapies.[7]

CONCLUSION

Analysis of mode of action leads us to the inference that Swalpa Chetasa ghrita may be more effective in the management of vata-pitta pradhana Unamada (Childhood Autism), characterised by hyperactivity, decreased eye contact, delayed speech, restricted and repetitive behaviours.

REFERENCES

1. Editor, Sen Vinodlal. Unmadarogadhikrah. Pandey Gyanender (ed). BhaishajyaRathnavali, 1st ed. Chowkhambha Sanskrit Series Office: 2008.vol 3rd p.587.
2. IAP Textbook of Pediatrics Fifth Edition chapter 6.16 Cerebral Palsy, Mental Retardation and Autism by MS Mahadeviah pg 410.
3. Autism | Definition, Symptoms, Neuropathology, & Diagnosis Britannica [Internet]. 2024 [cited 2024 Feb 7]. Available from: https://www.britannica.com/science/autism.
4. Ramachandran SK. Understanding and Management of Autism Spectrum Disorders-An Ayurvedic Perspective. InSouvenir-International seminar on Kaumarabhritya -updates, scopes and challenges. Jamnagar; Department of Kaumarabhritya., 2016; 29–41.
5. Charaka samhitha, nidana sthana 7th chapter-unamada nidanam.
6. Sushrutha samhitha, Uttara tantra, 62nd chapter, unmada prathisheda adhyaya.
7. Ashtanga hrudaya- Uttara sthana, 6th chapter-unmada prathisheda adhyaya.
8. Sinimol. T. P. Probable Mode of Action of Kalyanaka Ghrita in Unmada (Insanity) Based on Analysis of Rasa Panchaka of Ingredients- A Review. International Journal of Ayurveda and Pharma Research, 2019; 7(2): 19-30.
9. Autism | Definition, Symptoms, Neuropathology, & Diagnosis Britannica [Internet]. 2024 [cited 2024 Feb 7]. Available from: https://www.britannica.com/science/autism.