

**LITERATURE REVIEW ON SIDDHA MEDICINE FOR THE MANAGEMENT OF
'MAANTHASANNI' (AUTISM SPECTRUM DISORDER) WITH UTHAAMANI NEI- A
DRUG REVIEW****Dr. M. Roshan*¹, Dr. P. Arulmozhi P.², Dr. M. Meenakshi Sundaram³, Dr. R. Meenakumari⁴**¹PG scholar, Department of Kuzhandhai Maruthuvam, National Institute of Siddha, Chennai 47, Tamil Nadu, India.²Associate Professor, Department of Kuzhandhai Maruthuvam, National Institute of Siddha, Chennai 47, Tamil Nadu, India.³Professor, Head of the Department, Department of Kuzhandhai Maruthuvam, National Institute of Siddha, Chennai 47, Tamil Nadu, India.⁴Director, National Institute of Siddha, Chennai-47 Tamil Nadu, India.***Corresponding Author: Dr. M. Roshan**

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ABSTRACT

Siddha medical system lies in its holistic approach for a healthy living. Several classical siddha books described about Maanthasanni in children, was developed due to the deranged three dhodam. Autism Spectrum Disorder (ASD) called as Maanthasanni in siddha. Autism a grand challenge in global mental health to be dealt with on a priority basis. Similar to the western world, there has been an increase in the prevalence of autism in India over the years. Recent estimated prevalence of ASD in India ranges from 0.15% to 1.01% in various studies. SD results from multifaceted deficits and manifest differently in every individual. The children of ASD, with or without language impairments and are characterized by some degree of difficulty with social interaction and communication. In siddha system ASD is correlated with Maanthasanni and it can be effectively managed with Uthaamani Nei. Most of the ingredients of Uthaamani Nei having the potency of anti-oxidant activity, Immunomodulatory, Hepatoprotective and anti-convulsant activity. Hence this article gives an insight on the efficacy of the drug for Maanthasanni (ASD) based on review of various literatures and scientific studies.

KEYWORDS: Autistic Spectrum Disorder, Siddha system, Uthaamani Nei, Maanthasanni.**INTRODUCTION**

The strength of the Siddha medical system lies in its holistic approach for a healthy living. The healing science involves the physical, mental, social and spiritual well-being by adapting simple lifestyle practices, dietary regimen, safe and effective drugs. It focusses on the preventive, promotive and rejuvenative methods for maintaining good health. Siddha system was based on the theory of *tridosham*. When the normal equilibrium of three humors (*Vatham, Pitham and Kabam*) is disturbed, disease occur.

Mantham was caused by improper follow of diet restriction of the mother during the breast feeding period causes *maanatham* in children, during 1 to 3years. This condition develops and leads to *Manthasanni* in later life, due to the deranged three *dhodam*.^[1]

ASD are called as *Maanthasanni* in siddha. These clinical features are closely related with Autistic Spectrum Disorder (ASD).^[2] Autism is a grand challenge in global mental health to be dealt with on a priority

basis. ASD result from multifaceted deficits and manifest differently in every individual. The children with characteristic symptoms of ASD, with or without language impairments and some degree of difficulty with social interaction and communication.^[3] The abilities and needs of people with autism vary and can evolve over time. While some people with autism can live independently, others have severe disabilities and require life-long care and support.^[4]

Similar to the western world, there has been an increase in the prevalence of autism in India over the years. Once considered rare, now become one of the more common developmental disabilities. Recent estimated prevalence of ASD in India ranges from 0.15% to 1.01% in various studies.^[5] Raising a child with ASD puts a tremendous strain on the parents and care givers due to increased responsibility and social stigma.

Children with ASD have excessive ROS production and decreased antioxidant capacity and mitochondrial dysfunction and had multiple comorbidity conditions,

such as depression, Anxiety, ADHD, Epilepsy and Autoimmune dysregulation. These co- occurring conditions have a significant effect on the health and quality of life for children. A connection of oxygen radicals and immune dysfunction may exist.^[6]

Although drug therapy may not cure ASD but , evidence does show that it helps to manage problems. Hence, its essential need to find out traditional therapy for the children with ASD.

The purpose of the review aims to investigate the Siddha formulation *Uthaamani Nei* for the management of *Maanthasanni* (ASD) and their associated symptoms. *Uthaamani nei*, a polyherbal preparation mentioned in the text book of – Balavagadam. Most of the ingredients in the formulation having the potency of anti-oxidant activity, Immunomodulatory, Hepatoprotective, Neuroprotective and anti-convulsant. It may helpful to the children with ASD and it is safe to treat *Maanthasanni*(ASD) with this efficacious medicine.

Drug Details

Trial drug: Uthaamani Nei^[1]

Preparation Of the Drug

Ingredients

1. *Omam (Carum copticum)*-10 varagan(40grams)

2. *Uthaamani elai (Pergularia daemia)*-*Ipidi*(10grams)
3. *Vettrilai kaambu(Piper betle)*-*Ipidi*(10grams)
4. *Thol seevina Sukku (Zingiber officinale)*-1 varagan(4grams)
5. *Sutta Vasambu(Acorus calamus)*- 1 varagan(4grams)
6. *Vellai poondu(Allium sativum)*- 1 varagan(4grams)
7. *Pasu Nei (Cows Ghee)*-1 *padi* (1.3litres)

PURIFICATION OF RAW DRUGS

All the drugs mentioned here, were purified as per the Siddha literature^[7]

Method of preparation

The purified drugs are taken and grinded with hot water and then mixed with cows' ghee. The above product was heated and stored in air tight container

Dosage^[8]

For children 3 to 5 years-8ml/twice a day, 6 to 9 years-10ml/twice a day, 10 to 12years-12ml/twice a day

Indication: Maanthasanni

Duration: 1 Mandalam (48 days).

Adjuvant: Food

Scientific Review

Plants	Botanical name	Parts used	Scientific Review
Omam	<i>Trachyspermum ammi</i>	Dried Seeds	Effects of ajwain extract on hexachlorocyclohexane (HCH)-induced oxidative stress and toxicity in rats were investigated. Pre-feeding of ajwain extract resulted in increased GSH, GSHperoxidase, G-6-PDH, SOD, catalase, glutathione S-transferase (GST) activities and decreased hepatic levels of lipid peroxides. It was concluded that HCH administration resulted in hepatic free radical stress, causing toxicity, which could be reduced by the dietary ajwain extract. ^[9] The DPPH radical scavenging assay and ferric reducing antioxidant power assay along with the protection against oxidative DNA damage. The results revealed that acetone extract of ajwain seeds possessed comparatively high number of total phenols whereas methanol seed extract was found to have highest number of total flavonoids. the study suggested that ajwain seed extracts could contribute a highly significant bio-resource of antioxidants ^[10]
Uthaamani	<i>Pergularia daemia</i>	Fresh Leaf	The formation of nitric oxide radicals was effectively decreased by the presence of hydrogen donating particles in <i>P. daemia</i> . ^[11] <i>P. daemia</i> exhibited antioxidant activity which may be attributed to the presence of polyphenolic and other phytochemical constituents and the presence of flavonoids were responsible for hepatoprotection, invitro evaluation of hepatoprotective activity. ^[12]

Vettrilai kaambu	<i>Piper betle</i>	Fresh Leaf	<p>Methanolic extract of Piper betle presented the highest antioxidant properties by strongly inhibiting 50% of DPPH radicals at low concentration. The antioxidant properties owned by Piper betle extract are believed due to the phenol and flavonoid contents of the leaves^[13]</p> <p>The brain of ethanol-treated rats exhibited increased levels of lipids, lipid peroxidation and disturbances in antioxidant defenses. Study showed neuroprotective effects of P betle in experimentally induced alcohol toxicity. Study evaluated the immunomodulatory effect of an ethanol extract of leaf of Piper betle.^[14,15]</p>
Vellai poondu	<i>Allium sativum</i>	Tuber	<p>Allicin, DADS, and DATS -Modulation of ROS, increasing glutathione and cellular antioxidant enzymes</p> <p>Alliin has Controlling ROS generation and preventing mitogen-activated protein kinase (MAPK)</p> <p>DAS was Suppressing the enzymatic activity of cytochrome P450-2E1, reducing the generation of reactive oxygen and nitrogen species^[16,17]</p>
Chukku	<i>Zingiber officinale</i>	Dried Rhizome	<p>Neuroprotective Properties due to the presence of polyphenolic compounds, ginger has potential to be a neuroprotective agent that can reduce the neurotoxic effect of MSG by altering neurotransmitter levels and suppressing 8-hydroxy-2'-deoxyguanosine (8-OHdg) and amyloid accumulation and also reported that ginger improves the histological features of the brain and attributed this effect to the antioxidant properties of ginger.^[18]</p> <p>Blood Brain Barrier permeability- Gingerol, shogaol were found to be able to penetrate the BBB via passive diffusion, suggesting them to contribute to the positive effects of ginger extracts in the central nervous system and Potential cognitive enhancer.^[19]</p>
Sutta Vasambu	<i>Acorus calamus</i>	Dried Rhizome	<p>Acetone rhizome extract of Acorus calamus had maximum amount of proanthocyanidins, polyphenolics and flavonoids which is directly related to their dose dependent antioxidant activity. Active research has been driven in recent years on plant-based components due to their biologically beneficial effects emanating from antioxidant activities of phenolic phytochemicals. Thus, an active molecule present in the acetone extract of Acorus calamus rhizome having both antioxidant and disease preventive property (anti-inflammatory activity, diabetes, CVD etc) may be useful in targeting the free radical mediated diseases.^[20]</p> <p>Anticonvulsant action against electroshock induced experimental models^[21]</p>

Ghee	Family	Properties	Constituents	Scientific review
Cows Ghee	<i>Bos taurus</i>	<p>Consumption of kaaraam pasu ghee improves the sharpness of vision. It cures the diseases of eyebrow, forehead and head.</p> <p>Properties of cow's ghee: Cow's ghee cures anopsia, dryness, vomiting, derangement of pitha and vatha, gonorrhoea, gastritis, hiccup, body heat, chronic cough, gastric ulcer, dryness of the body, vomiting</p>	<p>Free fatty acids, phospholipids, sterols, sterol, esters, fat-soluble vitamins, carbonyls, hydrocarbons, carotenoids (only in milk fat derived from cow). Casein and traces of calcium, phosphorus, iron conjugated linoleic acids^[23]</p>	<p>Cow ghee is effective in crossing the Blood Brain Barrier, due to which it is helpful in treating mental disorders. The regular consumption of cow ghee is known to enhance functions of the brain, such as memory, wisdom, and intellect. (Source: American Journal of Drug Delivery & Therapeutics). Recent research has clearly demonstrated the importance of essential fatty acids [EFAs] for normal brain function and stabilization of moods.^[24] According to Siddha, not</p>

		sensation, fever due to bony origin, anorectal diseases and abnormal peristaltic movement. ^[22]		only does ghee improve memory and strengthen the brain and nervous system but it's thought to improve digestion, promote longevity, and even help to protect the body from various diseases.
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CONCLUSION

The above formulation *Uthaamani nei* is effectively used for the management of Maanthasanni(ASD) and its co-morbid conditions. Besides, all the ingredients of the plants have Antioxidant, Immunomodulatory, Hepatoprotective and Antiepileptic action and it is significant improving the health and quality of life and hence used for the Management of Maanthasanni.

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