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Research Article

CLINICAL STUDY OF *LAGHUPANCHMOOLA SADHIT* COW'S MILK IN COW'S MILK PROTEIN ALLERGY

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KEYWORDS: *Tridoshahara, Paacana, Balya,* CMPA,, *Laghupanchmoola,* Cow's Milk Protein Allergy.

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ABSTRACT

In Ayurveda classics it is pointed out that cow's milk have *Vamaka, Virechaka, Sarama* and *Abhisyandi* properties. In classics, it has been mentioned that cow milk should always be processed with *Laghupanchmoola* before it is consumed.

Aims and Objectives of the study: To study Aetiopathogensis of cow milk protein allergy and to evaluate the efficacy of *Laghupanchmoola sadhit* cow milk in CMPA.

Material & Methods: To fulfill the above Aims and Objectives: Total 35 patients were selected between the age group of 0-3 years of age with symptoms of CMPA. Hb%, complete history and elimination-challenge test were used for evaluation of the patients. *Laghupanchmoola* granules dose depend upon age and duration of trial was 60 days.

Results: After analyzing the data statistically in 30 patients, statistically highly significant improvements were found in diarrhea, abdominal pain, respiratory difficulty and vomiting. Significant improvements were found in dermatitis. No improvement was found in anemia and nausea. Statistically highly significant improvement was found in weight, height, mid arm circumference, chest circumference and head circumference. After full observation of treatment modules, it was found that: Number of patient with complete improvement was 0, Number of patient unchanged was 2 (6.5%)**,** Mild improvement was observed in 05 patients (16.6%), and Moderate improvement was observed in 21 patients (70%), where marked improvement was observed in 2 patients (6.7%).

Conclusion: *Laghupanchmoola* proved quite effective in managing the patients of CMPA due to its *Tridoṣahar, Deepana, Aamdoshanasaka, Balya* and *Brahmanna* properties.

INTRODUCTION

This review summarizes current evidence and recommendations regarding cow milk protein allergy (CMPA), the most common food allergy in young children, for the parents with incidence estimated as 2% to 7.5% in the first year of life. CMPA is classically categorized into immune-globulin E (IgE) and non-IgE- mediated. Treatment is avoidance of cow's milk (CM) in the child's or mother's diet, if exclusively breast-feeding.

Food is one of the basic needs of human life. The nutritional problems of childhood differ from adults. Nutrition provides growth and development of child and also increases immunity. Growth increase in highest rate during childhood period, thus proper nutrition is required during this period. Therefore, it is very essential to take proper care of child for nutrition. Ayurveda also mentioned *Ahara* in *"Trayopastambha"* first. According to *Sushruta* food is the sustainers of living beings and also the

cause for their strength, complexion and vigor.[1] For proper maintenance of health and to get maximum benefits of diet, one should take it in proper quantity that depends upon the digestive fire. Ayurveda have classified the childhood period on the basis of their food requirements.[2]

- ***Kshirpa*** (milk is main diet) upto one year
- ***Kshirannada*** (milk and cereals both) from 1-2 years
- ***Annada*** (cereals are main diet) two years onwards.

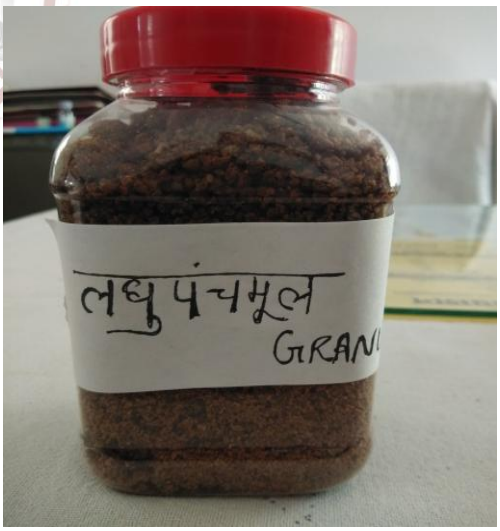
This indicates the immaturity of their *Annavahashrotas* according to the age. It is well accepted fact that breast milk is complete nutrition for child, but now days due to lactation failure cow milk is the first choice for an infant and now days it causes allergy in early childhood.

Conceptual Contrive: The disease cow milk protein allergy is highly prevalent disease but there is no explanation in Ayurvedic classics. In *Kashypa Samhita* it is mentioned that cow's milk has *Virechaka* property.[3] *Acharya Vaghbhatta* mentioned that cow's milk have *Saram* property[4]. The complete description of allergy in Ayurveda can be traced under the title of *Satmya*. *Satmya* indicates that what is suitable for a person.

Samprapti ghatak

Dosha	*Tridosha* (*Kapha Pradhana Vata Pitta Anubandhit*)
Dushya	*Rasa & Rakta Dhatu*
Shrotas	*Rasavaha, Raktavaha Annavaha, Pranavaha, Purishavaha.*
Dusti	*Atipravritti, Vimargagaman*
Agni	*Mandagni*
Adhisthan	*Aamasaya & Pakvashaya*

Drugs (*Laghupanchmoola*) used in treatment modules with their *Rasapanchaka*, *Doshakarma*, chemical composition, active constitute and mode of action. For the successful assessment of effects of a treatment, it becomes of prime importance that the selected mode of drug dosage is more acceptable in children, this depend upon appearance, smell and taste of the drug. Keeping all this points in mind a granules form of drug dosage was selected for this work. Granules make the dose fixation easier and it will easily accept with milk. Drug dose calculated by piloted study and depended on age.



Material and method- The clinical study was carried out in 35 patients, the general observations of these 35 patients were described with due importance in this section.

Inclusion Criteria

- Age – Birth to 3 years.
- Mild or moderate CMPA.

Exclusion criteria

- Age – above 3 years.
- Immediate or IgE mediated cow milk protein allergy.
- Severe Diarrhoea, vomiting.
- Patient associated with congenital anomalies, septal defects, cerebral palsy, nephrotic syndrome, metabolic syndrome etc.
- Patient's with systemic infection.
- Hb% less than 7 gm/dl.

Subjective Assessment

Symptoms	Grade 3	Grade 2	Grade 1	Grade 0
Diarrhea	Watery Stool passes 8-10 times/day activities severely affected	Watery Stool passes 5-7 times/day activities moderate affected	Watery Stool passes 3-4 time/day activities mild affected	No symptoms/ Complains
Abdominal pain	Severe & very severe pain	Quiet severe pain	Not severe pain	No pain
Anaemia	Hb% <7gm/dl	Hb% 8-9gm/dl	Hb% 10-11gm/dl	Hb% 12gm/dl
Respiratory difficulty	persistence difficulty lasting for more than 1 week	Frequent difficulty lasting for less than 1 week	Occasional H/O respiratory difficulty	No symptoms/ complains
Dermatitis	Whole body papular eruption	Localized papular eruption	Few papular eruption	No symptoms/ complains
Nausea	Crying and vomit on every feed	Reluctant with frequent vomiting	Reluctant to feed with occasional vomiting	Normal diet intake with interest
Vomiting	Vomit 8-10 times/day	Vomit 5-7 times/ day	Vomit 3-4 times/ day	No symptoms/ complains

Objective Assessment

- Weight
- Height
- Head circumference
- Chest circumference
- Mid upper arm circumference

Investigation

- Hb%
- The gold standard for diagnosis of food allergy is elimination and challenge test.

Out of 35 patients 30 patients were completed the course of treatment they were administered *Laghupanchmoola* granules with cow's milk, duration of the treatment was 2 months, and subjective and objective improvement in patients were explained in clinical study. All the results were analyzed by statistical methods and were methodically present in this section.

The observation and results obtained during study are as follow:

- Maximum patients i.e. 54.28% were belong to 0-1 year age group and 57.14% were males. Majority of the patients i.e. 60% were having diarrhea, 80% were taking *Madhura Rasa* in their diet, Maximum i.e. 82.9% patients were having vegetarian diet. Addiction of bottle feeding was found mostly i.e., 80% patients. 68.6% patients were having reduced sleep pattern and maximum patient's i.e., 54.3% were having *Mandagni*.
- *Dashvidha pariksa* biostatics revealed that maximum number of patient were having *Kapha pradhana vata pitta anubandhit prakiriti* i.e.34.3%, *Tridosha vikriti* i.e. 45.7%, *Madhyam Sara* 45.7%, *Madhyam Samhanana* i.e. 45.7%, *madhur rasa satmya* 80%, *Avara Satva* 48.6%, *madyam Aaharshakti* 54.2%, and *madhyam vyayamshakti* 42.9%.
- *Pradhana Laksana* observed in patient i.e. diarrhea 60%, respiratory difficulty and dermatitis were complained by 54.3% of patients, 51.4% of patients were having complained of vomiting. Anaemia was complained by 48.6% patients, abdominal pain was complained by 40% patients, 28.6% of patients were having complained of nausea.

RESULTS

Table 1: Showing Improvement in Subjective Criteria

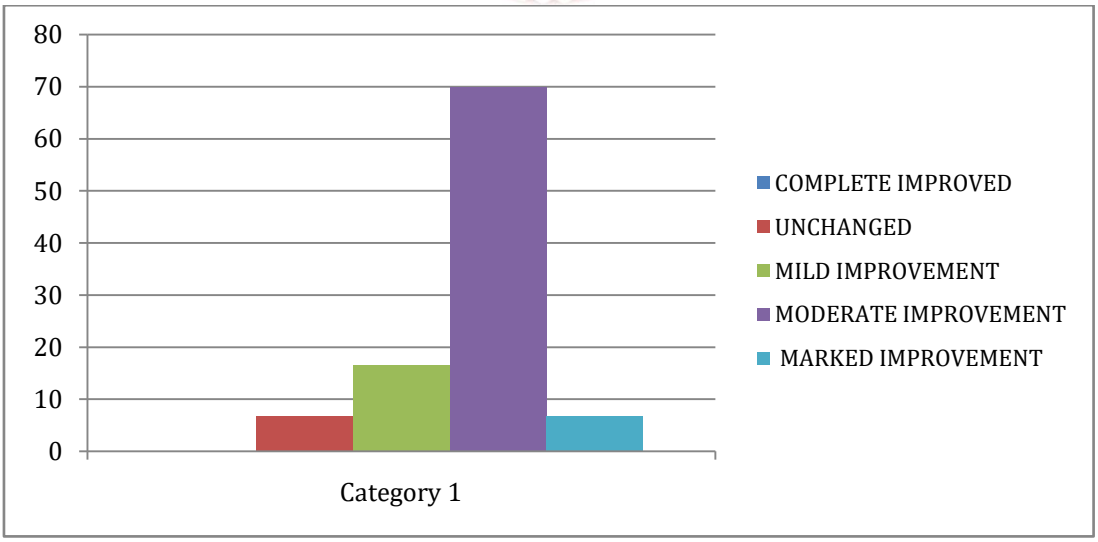
Symptoms	Mean Score		D	Relief %	W	P	Significance
	B.T	A.T					
Diarrhea	1.65	0.05	1.6	96.9	-210	<0.001	**HS**
Respiratory difficulty	1.59	0.24	1.35	84.9	-153.0	<0.001	**HS**
Dermatitis	1.83	1.28	0.55	30	-21.00	0.031	**S**
Vomiting	1.38	0.063	1.32	94.2	-136.00	<0.001	**HS**
Abdominal pain	1.23	0.077	1.15	93.5	-78	<0.001	**HS**
Nausea	1.11	0.56	0.55	49.55	-15.00	0.063	**NS**

TABLE – Showing Improvement in Objective Criteria:

	Mean score		D	Relief %	S.D	S.E	't'	P	Significance
	B.T	A.T							
Weight	7.93	9.7	1.77	22.3	0.56	0.10	-17.0	<0.001	**HS**
Height	70.2	73.2	3	4.3	2.17	0.39	-7.4	<0.001	**HS**
H.C.	44.2	45.4	1.2	2.7	1.00	0.18	-6.39	<0.001	**HS**
C.C.	45.1	46.6	1.5	3.3	0.91	0.16	-8.89	<0.001	**HS**
M.U.A.	15.1	15.8	0.7	4.6	0.35	0.064	-11.1	<0.001	**HS**
Anemia	1.5	1.44	0.06	4	0.25	0.62	1.00	0.333	**NS**

Overall Effect of Treatment Module: Overall Effect of Treatment Module

- Number of patient complete improvement was 0.
- Number of patient unchanged was 2 (6.7%).
- Mild improvement was observed in 5 patients (16.6%).
- Moderate improvement was observed in 21 patients (70%).
- Where marked improvement was observed in 2 patients (6.7%).



DISCUSSION

Incidence of the disease is more in male then female because of genetic predisposition. Prevalence is more between the 0-3 year age groups because of immature immune system. More occur in urban area because urbanization directly affect our immune system and cause allergic diseases. A child who can't digest cow milk protein means that cow milk is *Asatmya* for that children and lead to *Aam* production by *Agnimandhyata*. Then this *Aam* travels to different *Shrotas* and cause different symptoms like diarrhea, vomiting, abdominal pain etc. In Present study we found that

CMPA is a *Tridoshaj vyadhi* (*Kapha pradhana vata pitta anubandhit*), *Dushya* are *Rasa* and *Rakta dhatu. Raktavaha, Purishavaha, Prannavaha, Annavaha srotas dushi* occur in cow milk protein allergy. CMPA is *Doshabala* and *Mandagnijanya vyadhi* so its management is done by *Deepana, Paachana* and *Doshashaman*. It has been suggested that infant have milk allergies because milk is usually the first source of foreign antigen that they ingest in large quantity and the infant intestinal system is insufficiently develop to digest and immunologically react to milk protein. So we give infant to drug which improve baby digestion as well as immunity. *Laghupanchmoola* is *Deepana* as well as *Brahmnana* and *Vrisya* (Immunomodulator). Region of improvement in CMPA symptoms, because it is *Mandagnijanya Vyadi* and *Laghupanch-moola* being *Laghu Guna, so* enhances the *Jatharagni* as well as *Dhatwagni*. *Tikta rasa* of that drug play *Aamdoshanasaka* role, *Tridoshashamaka* property pacified *Tridosha*. *Brimhanna* and *Rasayana* properties of *Laghupanchmoola* nourish all *Dhatu* and improve failure to thrive condition in children. Another region is that, contains of *Laghupanchmoola* have anti-inflammatory, analgesic, anti-diarrheal, bronchodilator and Immunomodulator properties that they work against inflammation and improve immunity.

CONCLUSION

On the basis of above mentioned literary review, clinical study, observation, results, and discussion, the final conclusion of the present work are in diarrhea, abdominal pain, respiratory difficulty, vomiting has highly significant results were observed. In dermatitis significant result was observed in this study. In anemia and nausea there were not apparent change observed. An increase in weight, height has been observed in the present study, it is due to combined effect of drug and their growing period because all the patients belongs to the age group of 0-3 years. Number of patients complete improvement was 0, Number of patients unchanged was 2 (6.7%), mild improvement was observed in 5 patients (16.6%) and moderate improvement was observed in 21 patients (70%), where marked improvement was observed in 2 patients (6.7%). It was concluded that *Laghupanchmoola Sadhit* cow's milk is useful in the management of cow milk protein allergy and there was no side effect seen on any patient of the trial drug.

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