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

Sujata Sharma1*, Avdesh Dangwal1, Reena Pandey2, N. Sujatha3

*MD Scholar, 1Professor, Dept. of Kaumarbhritiya, Rishikul Campus, UAU, Haridwar, India.
2Associate Professor, Dept. of Kaumarbhritiya, Patanjali Bhartiya Ayurveda Evam Anusandhan Sansthan Haridwar, India.

KEYWORDS: Tridosahara, Paacana, Balya, CMPA, Laghupanchmoola, Cow’s Milk Protein Allergy.

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 Aetiopathogenesis 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           | Tridosh (Kapha Pradhana Vata Pitta Anubandhit) |
|-----------------|-------------------------------------------------|
| Dushya          | Rasa & Rakta Dhatus                              |
| Shrotas         | Rasavaha, Raktavaha Annvaha, Pranavaha, Purishavaha. |
| Dusti           | Atipravritti, Vimargaman                         |
| Agni            | Mandagni                                        |
| Adhistan        | Aamasaya & Pakvashaya                           |

Drugs (*Laghupanchmoolo*) used in treatment modules with their *Rasapanchaka, Doshakarma*, chemical composition, active constitue 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 mildly affected              | No symptoms/complains                |
| Abdominal pain    | Severe & very severe pain                                               | Quiet severe pain                                                       | Not severe pain                                                         | No pain                              |
| Anaemia           | Hb% <7 gm/dl                                                            | Hb% 8-9 gm/dl                                                           | Hb% 10-11 gm/dl                                                         | Hb% 12 gm/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  | -21.0| 0.031 S      |
| Vomiting         | 1.38       | 0.063| 1.32    | 94.2| -136.0| <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| 0.06     | 4   | 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 Rakt 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 Laghupanchmoola being Laghu Gun a, so enhances the Jatharagni as well as Dhatwagni. Tikta rasa of that drug play Aamoshanasaka 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.

REFERENCES

1. Sushruta Samhita- Text with English Translation By Kaviraj Kunjalal Bhishagratna Prologued & Edited by Dr.Jyotir Mitra Publication by Chaukhambha Sanskrit Series Office, Varanasi Vol. 1 third edition printed in 2005 & Vol. 2 third edition printed in 2007 Chapter 38,p-146.
2. Sushruta Samhita- Text with English Translation By Kaviraj Kunjalal Bhishagratna Prologued & Edited by Dr.Jyotir Mitra Publication by Chaukhambha Sanskrit Series Office, Varanasi Vol. 1 third edition printed in 2005 & Vol. 2 third edition printed in 2007, p-146.
3. Kashyap Samhita- vridhjivakiyatantra, Vatsyanprati sanskrit, Vidhyotini Hindi vyakhya, vyakhyaakruta by pandit Hemrajsharma and shri satyapalbhishagacharya, published khila sthan chapter no 22.
4. Astanga Hridaya of Srimad Vagbhata Edited with Nirmala Hindi Commentary along with special deliberation by Dr.Brahmanand Tripathi Publication by Chaukhambha Sanskrit Pratisthan, Delhi reprinted in 2007 sutra sthan page no 54.

Cite this article as:
Sujata Sharma, Avdesh Dangwal, Reena Pandey, N. Sujatha. Clinical Study of Laghupanchmoola Sadhit Cows Milk in Cows Milk Protein Allergy. AYUSHDHARA, 2020;7(2): 2586-2590.

Source of support: Nil, Conflict of interest: None Declared