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Research Article

A CLINICAL EVALUATION OF *PANCHAGAVYA GHRITA* IN *BAL APASMARA* (EPILEPSY IN PAEDIATRIC AGE GROUP)

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ABSTRACT

Background: Epilepsy is defined as the primary disorder of the brain due to an abnormal and excessive neuronal activity involving cerebral grey matter, resulting in a seizure.

Objective: The objective was to do a clinical evaluation of *Panchagavya ghrita* in *Bal apasmara* (epilepsy in paediatric age group).

Materials and Methods: It is a randomized open interventional parallel efficacy drug trial. A total number of 60 patients were selected from the age group of 4 years to 16 years of age. All the patients were recently diagnosed with Idiopathic type of epilepsy and were not on any kind of medication, before the start of the study. The selected patients were randomly divided into two groups – The patients in Group I (n = 30) were given *Panchagavya ghrita* and patients in Group II (n = 30) were kept on Tab. Tegretol for the study. Both the groups were studied for 12 months to see the efficacy of the drug.

Results: Group I showed Statistically significant results in Frequency of convulsions, Duration of convulsion and *Smritinasha* (Amnesia). Where as in Group II highly significant results were observed in Frequency of convulsions and duration of convulsion; but not significant results were observed in *Smritinasha* (Amnesia).

Conclusion: *Panchagavya ghrita* has shown promising results in the management of *Bal - apasmara* (Epilepsy in paediatric age group) without any complications and side-effects.

INTRODUCTION

The incidence and prevalence of epilepsy varies in different countries.[2-5] It is one of the most commonly found neurological disorder in India. India is home to nearly 10 million people suffering from Epilepsy (Prevalence of about 1%).[6] The incidence is higher in the rural (1.9%) than in the urban (0.6%) part of India.[7-8] Epilepsy is a disorder of the brain which is characterized by an enduring predisposition to generate seizures and by it's neurological, cognitive, psychological and social consequences. Epilepsy is defined by international League Against Epilepsy (ILAE; 1993) as a condition characterized by recurrent (two or more) epileptic seizures, unprovoked by any immediate indentified cause.[9]

In Ayurveda, *Apasmara* has been described in many classics.[10-13]

Paediatrics has changed enormously worldwide in the last three decades. Spectrum of infectious diseases is receding and major advances in the high technology medicine. are, now curing children. Though modern science has developed leaps and bounds, the horror of *Apasmara* (Epilepsy) is still among the sufferers as well as among the medical fraternity. The word *Apasmara* (Epilepsy) is a social stigma. Even the law of India prevents him or her to marry, to drive a car. As per the provisions laid down under "Hindu Marriage Act-1955" the sub. Clause (c) of sub. Section (ii) of section 5; a man or woman suffering from epilepsy cannot marry. This can also be treated as a ground for divorce. After understanding the grievance of this disease, it becomes a prime duty of a student of Ayurveda, Like us, to study the disorder and clinically prove the efficiency of a time-tested drug like "*Panchagavya Ghrita*". For paediatric age group.

Acharyas have considered "*Graha*" as the main culprit, for the ailments. Acharya Vagbhata have mentioned "*Skanda-Apasmara*".[14] While describing the signs and symptoms of "*Skanda-apasmara*", Acharya Vagbhata says; the child becomes unconscious repeatedly, eye movements are abnormal, frothing is present, becomes febrile, smells like fresh blood and becomes insomnic. There is a typical pyogenic smell to his/her body.[14] Some scholars of Ayurveda compare this ailment with Epilepsy. But signs like, pyogenic or Blood like odour of body differs this ailment from what has been described as Epilepsy in modern literature. For this clinical work, patients are diagnosed as "*Apasmara*" and treated accordingly. The description of *Apasmara*; including etiological background, prodromal signs and symptoms, cardinal signs; go very close to the description of Epilepsy. So, for clinical evaluation of *Panchagavya Ghrita, Apasmara* is compared with Epilepsy in this present study. This research work was focused only on the patients from paediatric age group. So, for this purpose this ailment was termed as "*Bal-Apasmara*."

MATERIALS AND METHODS

Study design: It is a randomized open interventional parallel efficacy drug trial. For this study total 60 patients were taken from OPD of *Pakwasa Samnvaya Rugnalaya*, Nagpur.

Selection of cases

Inclusion Criteria

- Patients having clinical manifestation of Epilepsy were thoroughly screened and selected for the study.
- Patients were selected from the age group of 4 years to 14 years of age.
- Patients recently diagnosed as Epileptics, i.e., not more than 6 months old case; were selected for this study.
- Patients of idiopathic type of Epileptics were selected.
- The diagnostic criteria of epilepsy was in accordance with the symptomatology described both in Ayurvedic as well as Modern literature, duly supported by necessary laboratory investigations; including EEG and CT scan.

Exclusion Criteria

- Patients having organic or focal epilepsy were rejected.
- Patients presenting other complications like Mental Retardation, Meningitis, Tuberculosis, Cerebral Palsy etc. were rejected.
- Patients not regular in the treatment were rejected.

Trial drug

A classical preparation of Medicated Ghee called as "*Panchagavya Ghrita*" or "*Laghu Panchagavya Ghrita*" was selected for the study. The reference for this drug is taken from Charak Samhita.[15]

Contents of *Panchagavya Ghrita*

- *Gau – Shakrud Rasa* (Fresh cow-dung juice)
- *Gau–Dadhi* (Cow milk Curd)
- *Gau – Kshira* (Fresh cow milk)
- *Gau – mutra* (Fresh cow urine)
- *Gau –ghrita* (Cow ghee)

All the five ingredients were taken in equal proportion. The *Panchagavya Ghrita* was prepared according to *Ghrita Paka Vidhi*.

Dose: The minimum advised dose was 5ml/day and maximum dose was 20ml/day. The *Ghrita* was advised before and after meal twice a day for 12 months. For *Anupana koshnajala* was advised for all the patients.

Grouping of Patients

All the 60 Patients, selected for the study were divided into two groups namely, Group I and Group II. The Group I and Group II were selected by simple random sampling technique.

Group I (on *Panchagavya ghrita*)

A total of 30 Patients were in this group. They were given *Panchagavya Ghrita* along with luke warm water Before and After meal; twice a day.

Group II (on Tab. Tegretol)

A total of 30 Patients were in this group. The Patients were advised Tab. Tegretol 1 OD for the period of 12 months.

Criteria of assessment

For the assessment of results four symptoms were kept as parameters. Out of these four parameters, two are subjective and two are objective.

Subjective Parameters

1. *Smritinasha* (Amnesia)
2. *Avasthikam Tamaha Pravesha* (Blackening in front of eyes)

Objective Parameters

1. Frequency of Convulsions
2. Duration of Convulsion

All the parameters were graded and the observations found were expressed accordingly. The gradation of parameters are as below:

I. *Smritinasha* (Amnesia)

3 = Total *Smritinasha* to the event.

2 = Partial *Smritinasha* to the event; recalls few details about the event.

1 = Partial *Smritinasha* to the event but recalls when thinks about the event.

0 = Recalls the event without thinking about it.

II. *Avasthikam Tamaha Pravesha* (Blackening in front of eyes)

1 = Present

0 = Absent

III. Frequency of Convulsions

3= Daily one, two, three or more than three attacks.

2 = Weekly one, two, three or more than three attacks.

1 = Monthly one, two, three or more than three attacks.

0 = Absence of attacks.

IV. Duration of Convulsion

3 = 15 minutes or more

2 = 10 minutes or more

1 = 5 minutes or more

0 = Absence of convulsion

The observations found on the basis of gradation of these four parameters were recorded as results. The result was analysed by the parameters given below:

I. Relieved = All the four symptoms are controlled.

II. Improved = Out of four any three symptoms are controlled.

III. Moderate = Out of four any two or one symptom is controlled.

IV. No Change = None of the symptoms are controlled.

V. Worsened = Any of the four symptoms intensifies.

Follow ups

Both the groups were studied for 12 months, during which patients were observed and observations were recorded after the interval of 1 month upto, 12 months. Patients from both the Groups were advised follow-ups after 1 month; after the completion of 12 months of treatment.

Statistical analysis

All the observations obtained were analysed statistically and the inference was drawn according to the Mean, Median, SD, SEM and P Value of the parameters. Test applied to all four symptoms is one way ANOVA, i.e., Kruskal wallies test with Dunn's multiple comparison test. It is a non parametric test, as data does not follow normal distribution or Gaussion curve. P value summary was taken by comparing with baseline before treatment values.(Abbreviations: SD = Standard deviation, SE = Standard Eror, P = Actual Probability Value, n = number of observations).

OBSERVATIONS AND RESULTS

After the study; the observations found in both the groups were calculated statistically to find out the significance of result.

Table 1: Showing the distribution of cases according to the result obtained, in Group I

Result	No. of cases
Relieved	14
Improved	2
Moderate	3
No change	11
Worsened	0

Table 2: Showing the distribution of cases according to the result obtained, in Group II

Result	No. of cases
Relieved	0
Improved	10
Moderate	11
No change	9
Worsened	0

It is observed that in Group I, 14 patients were relieved according to the parameters of this study; giving an impressive result of 46.66%. 2 patients were improved, 3 patients showed moderate results and 11 patients had no change in their status. No patients showed adverse result to fall in the category named worsened.

In Group II, no patient was relieved. 11 patients showed moderate results and 10 patients showed improved results. 9 patients had no change in their status.

Table 3: Effect of treatment on clinical symptoms

Clinical signs and symptoms		Mean I S. D.		P
		B T	A T	
Smrutinasha	I	2.53 ± 0.50	1.30 ± 0.70	< 0.001
	II	2.33 ± 0.49	2.16 ± 0.71	< 0.05
AvasthikamTamah Pravesha	I	1.00± 0	0.73± 0.44	> 0.05
	II	1.00± 0	0.83± 0.37	> 0.05
Frequency of convulsions	I	2.33 ± 0.47	1.13 ± 0.73	< 0.001
	II	2.4 ± 0.49	1.10 ± 0.71	< 0.001
Duration of convulsion	I	2.33 ± 0.60	1.13 ± 0.77	< 0.001
	II	2.30 ± 0.46	1.30 ± 0.83	< 0.001

In Group I, *Smritinasha* showed 50% relief, *Avasthikam Tamah Pravesh* showed 26.66%, Frequency of convulsion showed 51.42% relief and Duration of convulsion showed 50% relief. *Smritinasha* started

showing significant result in 8th month of treatment and showed highly significant result in 9th month. *Avasthikam Tamah Pravesha* exhibited non significant result till 12th month of treatment. Frequency of convulsions was reduced to highly significant level at the 10th month of medication. Duration of convulsion showed highly significant result at 10th month of the study.

In Group II, *Smritinasha* showed 7.14% relief, *Avasthikam Tamah Pravesha* showed 16.66% relief. Frequency of convulsions showed 52.77% relief and Duration of convulsion showed 42.02% relief. Frequency of convulsion showed highly significant result at 9th month of treatment. Duration of convulsion started showing significant result at 9th month and showed highly significant result at 10th month treatment.

DISCUSSION

In the present study the incidence of *Apasmara* is found to be comparatively high in the age group of 10 to 12 years with 46.66%. Out of total 60 patients 65% patients belong to poor economic class of society. This is interesting to note that unhygienic food, unclean environment and pirated surrounding does have its effect on personality of a person.[16] The disease like *Apasmara*, where these factors are important, this observation should be critically studied.

While studying the family history of all the 60 patients; only 15 patients were reported to have significant family history. Out of these 15 patients; 4 patients were having family history of Epilepsy and other 3 patients were having family history of Tuberculosis.

The observations made on the basis of premorbid personality traits shows that irritable, bad tempered, aggressive, moody, fearing, sleeplessness were the dominant traits in the present study. One patient is found to exhibit many traits.

Nearly 60% patients were complaining of *Krimi*. The worm infestation was a long standing problem in those Patients. So, it would be interesting to study the correlation between *Apasmara* and *krimi*. Out of 60; 43 Patients were complaining of *Vibhatsacheshta* as the major hazard. Remaining 17 patients were not having any generalized tonic-clonic phases. There were partial seizures prominently in those 17 patients. Incontinence of urine was found in only 18 patients out of total 60 patients. This symptom was found high in age group of 7 to 9 years and incidence was high in males.

Probable Mode of Action of *Panchagavya Ghrita*

Before going for action of trial drug, first in short understand the *Samprapti* (Disease pathogenesis) of *Apasmra*. Due to *Doshadushtikara* diet and *Manasdushtikara* reasons, the bodily *Doshas* and Mind gets vitiated. This causes *Jnyanendriyavikriti* (Sensory derangement) and *Karmendriya Vikriti* (Motor function derangement) in person. The vitiated *Dosha* remains accumulated in body and mind. Whenever the diseased individual comes in contact with triggering factor, these accumulated vitiated *Dosha* gets lodged in mind resulting in convulsion.[17] *Vatadosha*, *Manovahasrotas, Sanjnavahasrotas* and mind are the major components of the pathogenesis. *Apasmara* is a very deeply rooted disease, hence *Rasayana* Therapy is advised by Acharyas.[18] Cow milk and cow ghee in particular possess the property of *Rasayana.*[19] Cow dung has a special quality; *Rakshoghna* as a *Prabhava. Gau-Dadhi* (cow curd) and *Gau-mutra* (cow urine) are excellent *Vataghna.* [20-21]

Panchagavya Ghrita exhibits *Rasayana, Rakshoghna, Vataghna, Medhya, Smrutikara* properties. All the components of *Panchagavya Ghrita*, especially cow urine is very rich in volatile free acids which are very potent antioxidant agents.[22-23] There are many evidences to suggest the role of oxidants in the causation of epilepsy.[24-25] So, when these factors are considered together it can be said that by the virtue of its anti oxidant action *Panchagavya Ghrita* offers protection against convulsions. [26]

CONCLUSION

All the components of *Panchagavya Ghrita* can be easily available throughout the country. Preparation of the drug does not require great skill; making it easily accessible to anyone.

Panchagavya Ghrita showed promising results in controlling frequency of convulsions and Duration of convulsions. It also showed significant result in *Avasthikam Tamah Pravesha. Panchagavya Ghrita* can be given for a long duration of time in therapeutic dosage without the fear of any side-effects.

Tab. Tegretol reduces Frequency of convulsions and Duration of convulsion considerably but produces side effects like dizziness and nausea. Whereas, *Panchagavya ghrita* increases alertness and activeness and even works as an *Agnideepna* (Improving metabolic fire) medicine.

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