



Research Article

THE EFFICACY OF *DHANYA PANCHAK KWATHA* IN ACUTE DIARRHEA IN CHILDREN

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ABSTRACT

Diarrhea is the major health problem in developing countries. It kills more than 1 million children annually. According to Ayurveda due to intake of *Aama* producing *Nidana*, *Vata* gets vitiated because of malfunctioning of *Samana- apana vata* leading to *Jatharagni mandya* and *Shunyata of Koshtha* (mal absorption in large intestine) causes the increase in *Dravata* of stool in *Pakvashya* and result in *Atisara*. so *Aama* and *Vata* are the major factor in etiopathogenesis of diarrhea. So *Deepan* and *Pachan* medicines are required to break the *Samprapti* of *Atishara*. in addition to above *Grahi dravyas* are also indicted to maintain the consistency of stool. As per above principle *Dhanya panchak kwatha* in group A and *Balachaturabhadra* in group B was selected to study. *Balchaturbhadra churna* has been indicated by *Bhaishajyaratnavali* in *Balatisara Chikitsa*. 60 children aged 2 to 10 years were selected in 2 groups. Group A children were treated with *Dhanyapanchak kwatha* and group B children were treated with *Balachaturbhadra churna* with lukewarm water for 7 days in dose of 300 mg per kg and 100 mg per kg respectively. Frequency of stools, thirst, skin pinch and consistency of stools were the main criteria to assess the result of medicines.

Though the results were observed significant in both Groups in all parameters but the *Dhanya Panchak Kwatha* proved superior in reducing frequency of stool and improvement in stool consistency. Whereas Comparatively better results observed in thirst and skin turgor. Study proves the significance of *Grahi dravya* and Intake of lukewarm water in *Atisara*.

KEYWORDS: *Dhanya Panchak Kwatha*, *Balachaturabhadra*, Acute Diarrhea.

INTRODUCTION

Diarrhea is the major health problem in developing countries. It kills more than 1 million children annually. Diarrhea disease cause a heavy economic burden on health services and the main consequence of diarrhea in children are dehydration and malnutrition. According to Ayurveda due to intake of *Aam* producing *Nidan*, *Vata* gets vitiated because of malfunctioning of *Saman- Apan vata* leading to *Jathragni mandya* and *Shunyata of Koshtha* (mal absorption in large intestine) causing the increased *Dravata* of stool in *Pakvashaya* result in *Atisara*^[1]. So *Aama* and *Vata* are the major factor in etiopathogenesis of diarrhea. Acute diarrhea is defined as history of at least 3 loose or watery or unformed stool in a minimum period of 24 hours and usually lasting for the period of at least 7 days^[2]. In developing countries, it is mostly infectious in origin in children and is very often self limiting.

ORS forms mainstay in treatment of diarrhea but ORS does not reduce frequency and volume of stools or the duration of diarrhea. Therefore an effective anti diarrhea treatment to prevent dehydration by reducing the frequency and duration of diarrhea would be beneficial.

Aims and objective

To access the effect of *Dhanya Panchak kwatha* on the frequency, severity and duration of acute diarrhea

in children and establish a cost effective remedy for diarrhea.

Materials and methods

Study design

Total 60 Children aged between 2years to 10 years suffering from acute diarrhea were enrolled at random allocation from OPD, A & U Tibbia College, Karol bagh, New Delhi during March 2010 to March 2011. Total patients were divided in two groups as.

- (1) Group A
- (2) Group B

In group A 30 patients were treated with *Dhanya Panchak Kwath* and In group B 30 patients were treated with *Bal Chaturbhadra* with lukewarm water for 7 days and patient were followed up day to day and 3 consecutive follow ups were recorded on 1st, 3rd and 5th day.

Inclusion criteria

- Age 2 to 10 years
- Acute diarrhea
- Diarrheal duration less than 2 days
- No sign of severe dehydration

Exclusion criteria

- Children less than 2 years and above 10 years age
- Chronic and bloody diarrhea
- Children with severe diarrhea and dehydration
- Children with severe malnutrition
- Children with any other significant systematic illness

Assessment criteria (before and after)^[3]

- Frequency of stool per day
- Thirst (*Trishna*)
- Skin turgor (*Rukshtha*)
- Consistency of stool

Assessment Parameters

Observation	Criteria	Result
Frequency of stool (<i>Bahudrava saranan</i>)	Single loose motion per day	0
	2-3 loose motions per day	1
	4-6 loose motions per day	2
	7 or more loose motions per day	3
Thirst (<i>Trishna</i>)	Drink normally	0
	Drink vigorously	1
	Drink poorly	2
	Not drinking	3
Skin turgor	Goes back quickly	0
	Goes back slowly	1
	Goes back very slowly	2
	Remain in pinch	3
Consistency of stool	<i>Prakrit</i> (normal)	0
	<i>Alpadrava</i> (mild liquid)	1
	<i>Alpa baddha</i> (unformed)	2
	<i>Drava/Jalavat</i> (watery)	3

Drug Review

Ingredients of *Dhanya Panchak kwath*^[4] (from Bhaishajya Ratnavali)

1.*Dhanyaka* 2.*Shunthi* 3.*Mustaka* 4.*Netrabala* 5.*Bilva*

All are in equal parts

Ingredients of *Bal Chaturbhadra*^[5] (from Bhaishajya Ratnavali).

1.*Mustaka* 2. *Pippali* 3.*Ativisha* 4.*Karkat Shringi*

All are in equal parts

MANAGEMENT OF PATIENTS

Route of administration – orally

Time of administration – 8 hourly

Dose of medicine- *Dhanya panchak kwatha*- 300MG of body wt. /day in 3 divided dose.

(this is qty. of *Kalka*, *Kwath* should be prepare with 8 times water and reduced to 1/4).

RESULT OF DRUG IN BOTH GROUPS

Balchaturbhadra churna - 100 MG of body wt. /day in 3 divided dose with lukewarm water.

OBSERVATION

1. Total 73 patients were registered for the study out of which 35 patients were taken in group A and 38 were taken in group B out of which 5 from group A and 8 from group B were excluded from study due to discontinuation of treatment.
2. As per sex wise distribution the maximum number of diarrheal episodes recorded in male patients was 60 % while the incidence in female was 40%.
3. According to Socio economic status, 60 % of patients were from poor class while 40% from middle class family.
4. Food habit wise distribution shows that the maximum 65% patients were vegetarian and another 35% were mixed type of food.

Table 1: Showing effect of drug in frequency of stool

Frequency of stool	BT		AT		% Relief	Z Value	P value
	mean	Sd	mean	sd			
Group A	2.5	0.509	1.07	0.907	57.2	4.453	<0.001
Group B	2.53	0.507	1.60	0.81	33.2	4.064	<0.001

Table 2: Showing effect of drug on thirst

Thirst	BT		AT		% relief	Z Value	P value
	mean	Sd	mean	sd			
Group A	1.21	0.418	0.4737	0.5130	60.88	2.889	<0.002
Group B	1.11	0.323	0.28	0.461	74.77	3.419	<0.001

Table 3: Showing effect of drug on skin pinch (skin turgor)

skin pinch	BT		AT		% relief	Z Value	P value
	mean	sd	mean	sd			
Group A	1.08	0.289	0.5	0.522	51.66	2.33	.0313
Group B	1.091	0.0301	0.181	0.4045	83.35	3.16	0.002

Table 4: Showing effect of drug on consistency of stool

Consistency of stool	BT		AT		% relief	Z Value	P value
	mean	sd	mean	sd			
Group A	2.47	0.507	1.17	1.020	52.63	4.07	<0.001
Group B	2.467	0.507	1.77	0.679	31.09	4.001	<0.001

- Effect of drug on frequency of stool-** The mean of frequency of stools before treatment was 2.5 then it reduced to 1.07 after treatment in group A. In group B mean before treatment was 2.5 and it reduced to 1.60. The statistical analysis shows that z value is 4.453 and 4.064 for group A and group B respectively and the p value is <0.001 for both groups which shows highly significance result on frequency of stools in both groups.
- Effect of drug on thirst** – The mean of frequency of *Trishna* before treatment was 1.21 then it reduced to 0.4737 After treatment in group A. In group B mean before treatment is 1.11 and it reduced to 0.28. The Statistical analysis shows that z value is 2.889 and 3.419 for group A and group B respectively and the p Value is <0.001 for both groups which shows highly significance result on *Trishna* in both groups.
- Effect of drug on skin turgor (*Rukshta*)** – The mean of frequency of *Rukshta* before treatment was 1.08 then it reduced to 0.05 after treatment in group A. In group B mean before treatment was 1.091 and it reduced to 0.181. The statistical analysis shows that z value is 2.333 and 3.16 for group A and group B respectively and the p value is 0.313 for group A and 0.002 for group B which shows significance result on *Rukshta*.
- Effect of drug on consistency of stool** – The mean of frequency of consistency of stool before treatment was 2.47 then it reduced to 1.17 after treatment in group A. In group B mean before treatment was 2.467 and it reduced to 1.77. The statistical analysis shows that z value is 4.07 and 4.001 in group A and B respectively and the p value is <0.001 for both group A and group B which shows significance result on consistency of stool.
- Socio economic wise distribution shows the morbidity more in poor and middle class perhaps this may be due to location of hospital.
- In this study we found majority of patients vegetarian. This may be due to the eating unwashed, unclean and un properly cooked green and leafy vegetables.
- IN frequency of stool we found 58% and 34% result in group A & B respectively. Though both groups shows significant results but group a having high significance. The symptoms caused by *Aama* resulting *Dushti* of *Apa dhatu*. Then vitiation of *Vata* and *Kapha* occurs. The *Dhanya panchak kwatha* contents drug have *Agni vardhak*, *Vatakaphahara* and *Grahi* property. So it reveals that *Bilva* which is *Grahi* in nature and *Kwath kalpana* is more effective in diarrhea.
- As per thirst the result was obtained 60% & 74% in group A & B respectively. Though in both groups shows significant result but group B have better, that indicates the utility of intake of lukewarm water in acute diarrhea.
- In skin turgor the result was obtained 51% & 83% in group A & B respectively. In both groups shows significant result. But better results in group B which proves the effect of Luke warm water in maintaining rehydration state of body with medicine.
- As per consistency of stool the result was obtained 54% & 32% in group A & B respectively. Both groups show significant results as the content of formulation has *Deepan*, *Pachan* and *Grahi* properties.

CONCLUSION

The effect of therapy on both groups had statistically shown significant. Both drugs were effective in thirst and skin turgor whereas *Dhanya panchak kwatha* have better results in frequency and consistency than group B.

DISCUSSION

- In sex wise classification we found 60% male while 40% female patients. in this regard no conclusion can be made in small size study.

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