A CLINCAL STUDY TO EVALUATE THE EFFICACY OF VIDHARIKAND CHURAN AND BALA CHURAN ON BAL KARSHYA IN CHILDREN W.S.R TO PROTEIN ENERGY MALNUTRITION.

Dr. Aman Kumar[1], Dr. Arjun Gupta[2], Dr. Hem prakash sethi[3]

[1]P.G Scholar, dept. of Balroga, BKAMCH, Moga.

[2]Assistant Professor, dept. of Shalya Tantra, BKAMCH, Moga.

[3]Professor, dept. of Balroga, BKAMCH, Moga.

ABSTRACT

WHO defines malnutrition as "the cellular imbalance between the supply of nutrients and energy and the body's demand for them to ensure growth, maintenance, and specific functions". Malnutrition is a state of deficiency of energy, proteins and other essential vitamins and nutrients in an individual, this article deals with under nutrition and specifically protein energy malnutrition in children. The study was conducted to find out the potency of ayurvedic formulations of *Vidharikand Churan* and *Bala churan* on protein energy malnutrition on childrens. The patients attending the Balroga O.P.D of Babe Ke Ayurvedic Medical College & Hospital, Daudhar, Moga were selected for the present study. All the data obtained was computed and assessed statistically for results.

Keywords: Malnutrition, *Bala Karshya,* cellular imbalance.

Introduction

Malnutrition is a man-made disease which starts in womb and ends in tomb. Total development of children is influenced by genetic, environmental and nutritional factors. During development of the brain, the most important phase neuronal proliferation and migration occurs in the intrauterine period. Hence ,antenatal care & health of the girl child who is the prospective mother are of utmost importance. It is important to link all these factors for prevention and management of nutritional disorders. The developmental perspective which is crucial in infants and young children is a very important dimension of this subject. Thus, the management of malnutrition can be done on the line of principles of *Bala Karshya* treatment. The treatment of *Bala Karshya* empha size on correction of *agni* and nourishment of malnourished tissues. With this milieu, present study was conducted in malnourished children who have symptoms of *Bala Karshya* . After screening of various references available in various *ayurvedic* texts like *Charak Samhita, Suhrut Samhita, Ashtang Sangrah, Ashtang Hridaya* and others, reference from *KashyapSamhita*-the*yoga* of*Abhayghrit*is taken   into consideration.

PEM was found 56%, more per cent of PEM was found in 13-24 month age 64 (66.7%), 120 (54.1%) boys, 122 (55%) non-nuclear family dwellers, in 126 (56.8%) children whose mothers got married<18 years age. About 116 (52.3%) children of illiterate mothers, 158(71.2%) children of birth order >2, 198(89.2%) children who were not given colostrum and 168 (75.7%) who were not given exclusive breast feeding, in 152(68.5%) children with incomplete immunisation, 122 (55%) children with more than 3 episodes of ARI, 142(64%) with >3 episodes of Diarrhoea. 86 (82.7%) children with PEM belonged to Class V, (B.G Prasad classification), statistically significant association of PEM was found with the factors age of child, mother's education, birth order, immunisation status, mother's age at marriage, exclusive breast feeding, history of acute respiratory infection (ARI) and diarrhoea, and socio-economic status.

OBJECTIVE OF STUDY:s

Despite the fact, that many child nutrition programs and health schemes are available, child malnutrition is still prevalent in an emerging world. Hence, there arises a need for a truly satisfactory drug to cure an emerging malnutrition. Keeping this in mind, the present study has been planned.

Material Methods

The drug under trial *Vidharikand Churan* and *Bala churan* is put into clinical evaluation. The patients attending the Balroga O.P.D of Babe Ke Ayurvedic Medical College & Hospital, Daudhar, Moga were selected for the present study. To facilitate easy diagnose, a special research performa was prepared. Required investigations were also done before and after completion of research work. All the data obtained was computed and assessed statistically for results. It includes discussion which deals with analysis of observation and results of the study along with probable mode of action of the drug.

Grouping of patients

The cases registered for the study were randomly divided into two groups. Group Acomprising of 22 and Group B of 18 patients. 7 patients of group A and 3 patients ofgroup B discontinued.

- **Age Group :** Children between 2-5 years were selected for the study.

- **Group A**- In this group "*vidharikand churan''*was administered to the patients.

- **Group B** -This group of patients were given *Bala churan.*

A. InclusionCriteria

- Patient or parents/guardian of the patient willing for the trial.
- Children between the age group 2-5years will be included in the study irrespective of sex, caste, religion, socioeconomic status and food habits.
- Shosh along with two more *lakshana's* as described will be selected.

B. ExclusionCriteria

- Patient or parent/guardian of the patient not willing for the trial.
- Patients above 5years of age.
- Patients associated with-
  - Temperature$>1OO^0F$
  - Secondary malnutrition
  - Congenital diseases
  - Inborn errors of metabolism
  - Children suffering from severe/ acute or chronic infections
  - Children whose expected weight forage$>80\%$ and<60

Assessment Criteria

For assessment of the efficacy of the trial therapy, following parameters were adopted-

1. Clinical (subjective parameters and objective parameters)

Subjective parameters : It includes assessment of clinical features of *Balashosha*.

Clinical features:

1. Shosh

2. Aruchi

3. Jwar

4. Pratishyaya

5. Kasa

6. MukhSnigdhata

7. MukhShwetata

8. Netra Snigdhata

9. NetraShwetata

A. Blood Investigations-

1. Hb
2. TLC
3. DLC
4. ESR
5. RBCCount
6. SerumCholesterol
7. Serumalbumin/globulinratio

B. Urine routine

C. Serum protein

Follow-up and monitoring-

First follow up on 15th day of treatment, 2nd follow up on 30th day of treatment and 3rdfollow up on 45th day of treatment. Clinical scoring of clinical features and recording of anthropometric parameters with any other complaint or adverse effects was recorded in history sheet Performa on every visit.

RESULTS:

TableNo.1. Showing Statistical Analysis of all parameters in Group A

Features	BT	AT	% Improvement	Difference	S.D.	S.E.	tvalue	p value	Interpretation
Weight	12.66±3.48	13.77±3.49	8.74	1.11	0.12	0.03	32.12	<0.001	HighlySignificant
Height	93.49±11.46	93.75±11.68	0.28	0.26	0.89	0.23	1.15	>0.05	NotSignificant
HeadCircumference	49.53±1.68	49.53±1.68	0	0	0.00	0	0	>0.05	NotSignificant
ChestCircumference	48.44±2.74	49.72±2.50	2.65	1.28	0.50	0.13	10.14	<0.001	HighlySignificant
Mid ArmCircumference	15.06±1.18	15.49±1.08	2.88	0.43	0.15	0.04	10.01	<0.001	HighlySignificant
BMI	14.25±0.71	15.48±0.49	8.67	1.23	0.46	0.12	10.25	<0.001	HighlySignificant
Hb%	10.14±0.46	10.64±0.43	4.93	0.5	0.23	0.06	8.66	<0.001	HighlySignificant
TLC	7990±929.71	8068.7±982.5	0.98	78.67	191	49.31	1.6	>0.05	NotSignificant
ESR	23.93±5.11	21.20±3.63	11.42	-2.73	3.06	0.79	-3.46	<0.05	Significant
RBC	3.99±0.41	4.24±0.38	6.35	0.25	0.15	0.04	6.14	<0.001	HighlySignificant
Iron	0.03±0.01	0.06±0.02	75	0.03	0.00	0	5.39	<0.001	HighlySignificant
TotalCholesterol	88.27±12.46	103.27±7.29	16.99	15	8.40	2.17	6.92	<0.001	HighlySignificant
A/GRatio	1.57±0.06	1.58±0.06	0.47	0.01	0.00	0	1.85	>0.05	NotSignificant
Urine forProtein	2.13±0.52	0.27±0.59	87.5	-1.86	0.50	0.13	-14	<0.001	HighlySignificant
Arochaka	2.20±0.56	0.20±0.56	90.91	-2	0.54	0.14	-14.49	<0.001	HighlySignificant
Jwara	1.33±0.98	00±00	100	-1.33	0.97	0.25	-5.29	<0.001	HighlySignificant
Pratishyaya	1.60±1.06	00±00	100	-1.6	1.05	0.27	-5.87	<0.001	HighlySignificant
Kasa	1.87±0.92	0.07±0.26	96.43	-1.8	0.85	0.22	-8.09	<0.001	HighlySignificant
Shosha	2.33±0.62	0.20±0.56	91.43	-2.13	0.66	0.17	-12.91	<0.001	HighlySignificant
MukhaSnigdhata	0.20±0.56	00±00	100	-0.2	0.54	0.14	-1.38	>0.05	NotSignificant
MukhaShwetata	1.87±0.74	0.07±0.26	96.43	-1.8	0.66	0.17	-10.31	<0.001	HighlySignificant
NetraSnigdhata	0.40±0.91	00±00	100	-0.4	0.93	0.24	-1.7	>0.05	NotSignificant
Netra Shwetata	1.93±0.70	0.07±0.26	96.55	-1.86	0.66	0.17	-11.3	<0.001	HighlySignificant

TableNo. 2: Showing statistical analysis of all parameters in Group B

Features	BT	AT	% Improvement	Difference	S.D.	S.E.	tvalue	pvalue	Interpretation
Weight	11.93±2.45	12.12±2.45	1.59	0.19	0.12	0.03	7.25	<0.001	HighlySignificant
Height	92.19±9.89	92.21±9.90	0.02	0.02	0.04	0.01	1.87	>0.05	NotSignificant
HeadCircumference	49.30±1.75	49.31±1.74	0.01	0.01	0.04	0.01	1	>0.05	NotSignificant
ChestCircumference	48.09±2.34	48.47±2.13	0.79	0.38	0.39	0.1	3.81	<0.05	Significant
Mid ArmCircumference	14.97±1.00	15.20±0.98	1.56	0.23	0.12	0.03	9.26	<0.001	HighlySignificant
BMI	13.95±0.95	14.18±1.04	1.67	0.23	0.15	0.04	5.53	<0.001	HighlySignificant
Hb%	10.07±0.67	10.29±0.64	2.19	0.22	0.15	0.04	5.98	<0.001	HighlySignificant
TLC	7866.7±994	7731±1212	1.72	135.33	745.82	192.57	0.7	>0.05	NotSignificant
ESR	23.40±4.69	21.68±3.80	7.35	-1.72	2.59	0.67	-2.58	<0.05	Significant
RBC	4.05±0.39	4.25±0.37	5.11	0.2	0.12	0.03	7.28	<0.001	HighlySignificant
Iron	0.03±0.01	0.04±0.01	23.91	0.01	0.00	0	3.21	<0.05	Significant
TotalCholesterol	86.67±16.00	102.47±15.95	18.23	15.8	8.13	2.1	7.54	<0.001	HighlySignificant
A/GRatio	1.58±0.09	1.59±0.09	0.34	0.01	0.00	0	2.09	<0.05	NotSignificant
Urine ForProtein	2.13±0.74	1.00±0.76	53.13	-1.13	0.85	0.22	-5.26	<0.001	HighlySignificant
Arochaka	1.80±1.01	0.67±1.05	62.96	-1.13	1.01	0.26	-4.43	<0.001	HighlySignificant
Jwara	1.27±0.96	0.20±0.56	84.21	1.07	1.47	0.38	-3.76	<0.05	Significant
Pratishyaya	1.40±1.06	00±00	-1.4	100	1.05	0.27	-5.14	<0.001	HighlySignificant
Kasa	1.27±0.88	00±00	100	-1.27	0.89	0.23	-5.55	<0.001	HighlySignificant
Shosha	2.07±0.80	1.13±1.25	45.16	-0.94	0.81	0.21	-4.53	<0.001	HighlySignificant
MukhaSnigdhata	0.33±0.72	00±00	100	-0.33	0.74	0.19	-1.78	>0.05	NotSignificant
MukhaShwetata	1.87±0.83	0.53±1.13	71.43	-1.34	0.97	0.25	-5.29	<0.001	HighlySignificant
NetraSnigdhata	0.33±0.62	00±00	100	-0.33	0.62	0.16	-2.09	>0.05	NotSignificant
NetraShwetata	1.67±0.90	0.73±1.28	56	-0.94	1.05	0.27	-3.5	<0.05	Significant

Table No. 1 & 2 Shows that on evaluating pre and post treatment distribution of grade of malnutrition, data shows that in Group A, 75% children of Grade I have weight in normal range for their age whereas in Group B, 0 % of patient have weight in normal range. In Group A, 25% children of Grade I remained in Grade-I, 100% of children of Grade-II shifted to Grade-I whereas in Group B, 100% of children of Grade-I remained in Grade-I and 16.67% of children of Grade-II shifted in Grade-I. In Group A, 100% of children of Grade-III shifted to Grade-II whereas in Group B,83.33% of children of Grade-II remained in Grade-II and 66.67% of children ofGrade-III children shifted to Grade-II in Group B. No patient of Grade-III remained inGrade-III after treatment in Group A and 33.33% children of grade III remained inGrade-III in Group B. No children of Grade-IV were present either before or after treatment in both the Groups.

CONCLUSION

The quest for knowledge and research still continues but this research can be considered as milestones in the management of PEM in childrens. The present study shows that there is highly significant improvement in subjective as well as objective parameters of patients of Group-A treated with Vidharikand churan and significant improvement in subjective as well as objective parameters of patients of Group-B treated with Bala Churan.

From whole statistical analysis we can conclude that the total effect of both formulation have provide significant improvement on subjective and objective parameters. Total mean score was reduced from severe to moderate after treatment. So we hope that with increasing duration of treatment upto 3-6 months for both formulations, we may get more fruitfull results. Although the results are good in treating PEM but further study with longer duration may lead to arrive at definitive conclusion.

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