



EFFICACY OF MULTIGRAIN PANJIRI WITH IRON AND FOLIC ACID THERAPEUTIC SUPPLEMENTATION IN MANAGEMENT OF ANAEMIA AMONG MALNOURISHED WOMEN

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ABSTRACT:

Efforts have been made since long to control and treat anaemia in malnourished women with the help of therapeutic supplementation. Present study explores this subjects with added supplement of iron and folic acid with multigrain panjiri. The present study was undertaken to assess the efficacy of multigrain panjiri with iron and folic acid therapeutic supplementation in management of anaemia among malnourished women. The sample comprise of 200 malnourished women divided into two groups with equal number of subjects in each group. The selected subjects were divided into two groups i.e. experimental group I and II. Subjects of group I were supplemented with soya multigrain panjiri for three months while subjects from group II were supplemented with soya multigrain panjiri as well as iron and folic acid tablets for same period. Haemoglobin estimation was done by Cyanmet Haemoglobin method. Pre-post estimation of haemoglobin for both the groups was carried out. WHO classification for anaemic grades were used in the present study. Before supplementation deworming done to both the groups. In experimental group I, pre test statistics showing that 2% subjects had severe anaemia, 14% classified as moderately anaemic while 84% were mildly anaemic. The post test frequency distribution for experimental group I shows that none of the subjects had severe anaemia while 2% and 7% came under the category of moderate and mild anaemic. The post test frequency distribution reveals that 91% women subjects had normal haemoglobin levels. In experimental group II, pre test statistics showing that 2% subjects had severe anaemia, 17% classified as moderately anaemic while 81% were mildly anaemic. The post test frequency distribution in experimental group II shows that none of the subjects had severe anaemia while 2% and 3% came under the category of moderate and mild anaemic. The post test frequency distribution reveals that 95% women subjects had normal haemoglobin levels. It was concluded that maximum benefits of soya multigrain supplementation in treatment for anaemia can be achieved by adding iron and folic acid tablets with it.

Keywords: Soya multigrain panjiri, anaemia, therapeutic supplements, WHO classification of Anaemia, Cyanmet Haemoglobin



INTRODUCTION

Anaemia is one of the most common health problems in India. The problem is much more in rural than the urban areas high – risk groups for anaemia are pregnant and lactating females and in children the prevalence of anaemia is disproportionately high in developing countries, due to poverty, inadequate diet, certain diseases, pregnancy/ lactation and poor access to health services. The nutritional anaemia in woman attributes to high MMR, high incidence of low birth weight babies, high perinatal mortality and fetal wastage and consequent high fertility rates. To address the issue of anaemia in malnourished women number of additional dietary supplementation were thought to be useful. Multigrain pangiri is one of them. The soybean in the U.S., also called the soya bean in Europe (*Glycine max*), is a species of legume native to East Asia, widely grown for its edible bean which has numerous uses. The plant is classed as

an oilseed rather than a pulse by the UN Food and Agriculture Organization (FAO). Fat-free (defatted) soybean meal is a significant and cheap source of protein for animal feeds and many packaged meals; soy vegetable oil is another product of processing the soybean crop. For example, soybean products such as textured vegetable protein (TVP) are ingredients in many meat and dairy analogues. Soybeans produce significantly more protein per acre than most other uses of land. Soybeans are an exceptional source of essential nutrients, providing in a 100 gram serving (raw, for reference) high contents of the Daily Value (DV) especially for protein (36% DV), dietary fiber (37%), iron (121%), manganese (120%), phosphorus (101%) and several B vitamins, including folate (94%). High contents also exist for vitamin K, magnesium, zinc and potassium. A 100 gram serving of soybeans supplies 446 calories and 11 grams of polyunsaturated fat (table). Efficacy of soya



multigrain panjiri in management of anaemia has been established by many researchers. In this connection it would be even interesting to assess the role of soya multigrain supplement added with iron and folic acid tablets in management of anaemia in malnourished women.

REVIEW OF LITERATURE

So many researchers namely Rathod and Wasiams (1972), Sukushima (2001), Hyder et al. (2007), Jothilakshmi et al. (2013) Kaur Kawaljeet (2014) carried out studies to explore anaemia as well as benefits of soya bean in terms of women health. But so far effect of supplementation of soyabean multigrain panjiri along with iron and folic tablets have not been assessed in management of anaemia, hence the present study was planned.

OBJECTIVES

The main objective of the present study is to assess the efficacy of multigrain panjiri with iron and folic acid therapeutic supplementation in management

of anaemia among malnourished women.

MATERIALS AND METHODS

Sample

The sample comprise of 200 malnourished women subjects from Raipur Chhattisgarh. The selection of sample was based on WHO classification of anaemia in which haemoglobin values less than 12 are classified as anaemic. The age range of selected subjects was between 19 to 23 years. The selection of sample was done purposively.

Tools

Estimation of haemoglobin – Haemoglobin levels of the samples was estimated by Cyanmet Haemoglobin method. This method is based on Drabkin's cyanide – ferricyanide solution. It consists of potassium cyanide (50mg) potassium ferricyanide (200mg) distilledwater (1 liter). This solution was kept in brown bottle under cold storage. Haemoglobin cyanide and ferricyanide were converted to cyanmet haemoglobin. The absorbance of solution was measured in photoelectric



colorimeter at a wavelength of 540nm. 0.2 ml of blood was transferred with the help of pipette into a test tube containing 5 ml of Drabkins solution. The contents of the tubes were mixed and reading was taken photoelectric colorimeter using 540nm. Haemoglobin level was recorded in gm/dl.

Design

Pre-post randomized group design was preferred to conduct the study.

METHOD and procedure:

- First of all 200 anaemic women subjects were selected out of screened subjects as per criteria established by WHO. Cyanmet Haemoglobin method was used to assess haemoglobin levels of screened subjects.
- The selected subjects were divided into two groups equally.
- Before supplementation deworming done to both the groups.
- An iron rich nutritious soya multi grain panjiri was be prepared for the purpose of supplementation to the

experimental group I. 75 g (one small katorie) of soyamulti grain panjiri was measured on electronic weighing machine and packed for each sample per day

- Similarly additionally iron and folic acid tablets were also given to women subjects belonging to experimental group II along with soya multigrain panjiri.
- On the basis of WHO classification for anaemia, frequency distribution was calculated. The results are presented in table 1.

RESULT AND DISCUSSION:

The pre-post frequency distribution on the basis of WHO classification of anaemia in different study groups is shown in table no. 1.

In experimental group I, pre test statistics showing that 2% subjects had severe anaemia, 14% classified as moderately anaemic while 84% were mildly anaemic. The post test frequency distribution for experimental group I shows that none of the subjects had severe anaemia while 2% and



7% came under the category of moderate and mild anaemic. The post test frequency distribution reveals that 91% women subjects had normal haemoglobin levels. In experimental group II, pre test statistics showing that 2% subjects had severe anaemia, 17% classified as moderately anaemic while 81% were mildly anaemic. The post test frequency distribution in experimental group II shows that none of the subjects had severe anaemia while 2% and 3% came under the category of moderate and mild anaemic. The post test frequency distribution reveals that 95% women subjects had normal haemoglobin levels.

More than half of our body arteries and veins contain red blood cells which supplies oxygen to the tissues. Approximately, 100 million new blood cells are formed in the bone marrow daily. Materials needed to produce the blood cells are iron, vitamins, proteins, especially vitamin B12 and folic acid. Proteins and iron are important to help build haemoglobin in the blood. A

normal healthy person should have about 15 gm of haemoglobin per 100ml of blood, and a blood count of approximately 15 million red cells per millimetre of blood. Soya beans are rich in protein and iron content hence can be used as supplement to increase iron content in anaemic subjects or even to maintain iron content.

Results indicate that supplementation of multigrain panjiri with addition of iron and folic acid tablet is more effective in management of anaemia in malnourished women. This fact is verified by changes in anaemia profile of experimental group I and II. The improvement in haemoglobin levels of subjects belonging to experimental group I was found to be significantly higher as compared to subjects belonging to experimental group I. Hence the results are not surprising.

The similar study conducted by Dr Gurwara and Reena Barai on Impact of soya multigrain panjiri supplementation on haemoglobin level among



women at Raipur. The group-based supplementation helps to improve the haemoglobin level and also health of women. These programmes if continued persistently for longer duration will definitely have significant changes in health status. Such group – based supplementation helps to create awareness among the women regarding the importance of nutrition which will improve the

nutritional status of the entire society and all together will help to achieve our millennium development goals.

CONCLUSION

On the basis of results it may be concluded that maximum benefits of soya multigrain supplementation in treatment for anaemia can be achieved by adding iron and folic acid tablets with it.

Table No. 1:Pre-Post Test Frequency Distribution of Selected Malnourished Women on the Basis of their WHO Classification for Anaemia

Groups↓	Grades of Anaemia	Pre Test (N=100)		Post Test (N=100)	
		Frequency	%	Frequency	%
Experimental Group I	Severe (Hb<7.9 g/dl)	02	2.0	-	-
	Moderate (Hb 8-9.9 g/dl)	14	14.0	02	2.0
	Mild (Hb 10-11.9 g/dl)	84	83.0	07	7.0
	Normal (Hb >12 g/dl)	-	-	91	91.0
	Total	100	100.0	100	100
Experimental Group II	Severe (Hb<7.9 g/dl)	02	2.0	-	-
	Moderate (Hb 8-9.9 g/dl)	17	17.0	02	2.0
	Mild (Hb 10-11.9 g/dl)	81	81.0	03	3.0
	Normal (Hb >12 g/dl)	-	-	95	78.0
	Total	100	100.0	100	100.0



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