

ROLE OF AMALAKI (*Emblica officinalis*) CHURNA IN IRON DEFICIENCY ANEMIA IN PREGNANT WOMEN

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Abstract

Iron deficiency anemia is prevalent in tropical countries among women of child bearing age, because demand of Iron during pregnancy is markedly increased and simultaneously pregnancy depresses the erythropoietic function of bone marrow. 4 – 16 % maternal mortality is due to anemia. Pregnant women require about 2 – 4.8 mg Iron every day and she must consume 20 – 48 mg of dietary Iron everyday whereas normal vegetarian diet doesn't supply more than 10 – 15 mg. Normally 60 – 120 mg elemental Iron is supplemented once in a day only from 16 weeks of pregnancy in form of Iron pills which causes multiple side effects, but if the Amalaki (*Emblica officinalis*) churna is added with these Iron pills it increases its absorption and reduces the side effects. Pregnant women with iron deficiency anemia when treated with the combination of iron tab with Amalaki Churna for 45 days showed good response.

Key Words: Amalaki Churna; Anemia; Pregnancy; Iron tablet.

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INTRODUCTION

Anaemia in pregnancy is common and it is most often caused by iron deficiency. In India, incidence of anemia in pregnancy has been noted to be as high as 40 – 80% and about 4 – 16% of maternal deaths are due to anemia. It also increases maternal morbidity, fetal, neonatal mortality and morbidity significantly.^[1] Iron is a mineral that everyone needs. Pregnant women needs more iron for a variety of reasons. The biggest reason is that iron help to make new blood cell to carry the oxygen and nutrients to the fetus during pregnancy. A pregnant woman repair about 2 to 4.8 mg iron every day, through the dietary source consumed 20 – 48 mg of dietary iron. This is practically not possible in India, because an average vegetarian diet does not contain more than 10 – 15 mg or iron. Indian diet consists of cereals and cereal contains phytic acid, phytate reduce iron absorption.^[2] So to cure anemia, iron pills are given as supplement, but iron pills are not the answer for everyone because it can cause diarrhoea, constipation, stomach upset and are not readily absorbed as the iron from food.^[3] If the Amalaki (*Embllica officinalis*)^[4] Churna is added with iron tablet it enhances the action of iron by increasing its absorption and lowering the adverse effect iron tablet.

The main aims and Objectives of the study were to assess the comparative efficacy of Amalaki Churna in the management of iron deficiency anemia in pregnant women and to reduce the adverse effect of iron tablet.

MATERIAL AND METHODS

The clinical study was conducted on 60 pregnant females attending O.P.D & I.P.D. at MSM Institute of Ayurveda, Khanpur kalan, District. Sonipat, Haryana. The women selected were in the age group of 20 – 40 yrs having 16 week or above pregnancy. A detailed history of pregnant females including age, socio-economic status, parity, marital

status, menstrual history etc were taken along with haematological examination. Clinically diagnosed and confirmed patient (pregnant women) of anemia (iron deficiency) were selected and divided into two groups:

Group A: (Control group)

30 registered pregnant female of anemia were recommended with iron tablet 1 mg / kg body weight once a day for 45 days.

Group B: (Trial group)

30 pregnant women were administered Amalaki Churna 3 – 5 g (according to body weight) with iron tablet 1 mg / kg body weight once a day orally with lukewarm water for 45 days.

Drug Preparation

Amalaki Churna has been prepared from dry fruit pulp of Amalaki through grinding in the Pharmacy of MSM institute of Ayurveda, Khanpur kalan.

Inclusion criteria

1. Female having 16 – 28 weeks of pregnancy in the age group of 20-40 yrs.
2. Female suffering from iron deficiency anemia.

Exclusion criteria

1. Female having less than 16 weeks of pregnancy.
2. Female below 20 or above 40yrs.
3. Anemia due to other cause.
4. Female having chronic disease.

Statistical analysis

Statistical analysis was done through student's "t" test. P<0.001 was considered as highly significant.

Table 1: Grading pattern for assessment criteria

Sl. No.	Presenting Clinical Features	Grade	Severity
1.	Palpitation (Harddrav)	0	No palpitation on usual activity
		1	Occasional palpitation on heavy exertion.
		2	Palpitation on heavy exertion.
		3	Palpitation on light exertion.
		4	Palpitation during rest.
2.	Klama (Fatigue)	0	No fatigue
		1	Occasional feeling of fatigue on heavy activity.
		2	Constant feeling of fatigue on heavy activity.
		3	Occasional feeling of fatigue on light activity
		4	Feeling fatigue all the time.
3.	Swaskrichha (Dyspnoea)	0	No dyspnoea
		1	Occasional dyspnoea on exertion.
		2	Dyspnoea on walking upstairs/ quick moving.
		3	Dyspnoea on light physical Activity.
		4	Dyspnoea on bed.
4.	Vertigo (Bhrama)	0	Absence of vertigo.
		1	Occasional vertigo on heavy activity.
		2	Vertigo on heavy activity.
		3	Vertigo on light activity.
		4	Feeling of vertigo all the time.
5.	Loss of appetite (agnimandhya)	0	Very good appetite.
		1	Irregular appetite.
		2	Persistent poor appetite
		3	Persistent very poor appetite.
		4	Complete loss of appetite.
6.	Malabaddhata (Constipation)	0	No constipation.
		1	Passes hard & soft stool regularly.
		2	Pass hard stool all the time but no need of laxative.
		3	Need of laxative to pass stool.
		4	Need of laxative to pass hard stool.
7.	Dourbalya (Weakness)	0	No weakness
		1	Occasional feeling of weakness in normal activity.
		2	Persistent feeling of weakness in normal activity.
		3	Occasional feeling of weakness in heavy activity.
		4	Feeling of weakness at rest.

OBSERVATION AND RESULTS

The patients were observed during the administration of drug for consecutive 45 days without any other medication. Patients were assessed on different parameters (Table 1) for obtaining the effect of therapies.^[5] The 't' value for the trial were found as. Hb% g/dl is 14.76, E.S.R is 8.57, P.C.V is 10.41, S. iron is 13.03, and S. Ferretin is 11.46. The 'p' value found for all is less than 0.001 so, the results were highly significant. (Table 2) Improvement has been observed to increase Haemoglobin level in iron deficiency anemia after 45 days in both group A & B but over all improvements to increase Haemoglobin level

and reducing the associated symptom was more with the treatment of Amalaki Churna (Group B) as compared to treatment with iron tab. (Group A) It was well tolerated by all the Patients and no unwanted effect were reported during the trial period hence the trial drug was safe and can be recommended to the patient of iron deficiency anemia.

DISCUSSION

Although there is no description available regarding the role of the Amalaki in iron deficiency anemia in pregnant women, but as per the observation and result of the clinical

Table 2: Statistical comparison of laboratory findings before and after treatment

Lab finding	Group A		Group B		Statistical values	
	B.T Mean±SEM	A.T Mean±SEM	B.T Mean±SEM	A.T Mean±SEM	t value	p value
Hb% g/dl	10.10 ± 0.27	10.95 ± 0.30	9.3 ± 1.54	12.17 ± 13.70	14.76	<0.001
E.S.R	80.70 ± 2.37	61.25 ± 3.55	57.50 ± 2.60	21.95 ± 0.92	8.57	<0.001
P.C.V	30.00 ± .816	36.60 ± 0.653	33.35 ± .853	40.27 ± 0.525	10.41	<0.001
S. iron	70.69 ± 22.45	92.27 ± 17.36	81.97 ± .853	100.09 ± 13.78	13.03	<0.001
S. Ferretin	47.48 ± 33.90	82.62 ± 29.21	49.51 ± 42	71.00 ± 34.92	11.46	<0.001

B.T. – Before treatment; A.T. – After treatment

study, it clearly indicates that there was improvement in clinical parameters for example, Hb%, E.S.R, P.C.V, Klama (fatigue), Agnimandhya (loss of appetite) Harddrav (palpitation), etc. The probable effect of the treatment may be due to presence of Amalaki qualities and is the richest source of Vitamin C.^[6] Vitamin C helps in promoting the absorption of iron and when more iron is absorbed it naturally increases Hb% in blood. Amalaki not only promotes Hb% but simultaneously it relieved the associated symptom like klama, Aruchi, Agnimandhya etc. Amalaki is light (laghu), dry (ruksha) its vipaka (post digestive effect is) sweet. This property enhances the digestion (dipana pachana) and cures constipation (Malabadhata), strengthens the heart and reduces palpitation (hraddrav) there by enliven the body (jivaniya). It may be used as a rasayana (rejuvenating) to promote longevity and purify the blood.^[7] So the combined effect of iron tablet with Amalaki Churna is more effective.

CONCLUSION

On the basis of observations and discussion, it could be concluded that pregnant women with iron deficiency anemia when treated with the combination of iron tab with Amalaki Churna for 45 days showed good response. The study has validated the fact that the combination is

highly effective both in subjective as well as objective parameters and have shown improvement. This is very cost effective and can be administered for a long time without any side effect. Hence the iron tab along Amalaki Churna is an ideal combination to treat the iron deficiency anemia in pregnant women. Yet the study should be statistically analysed and the further scope of the study is to be carried with large sample size.

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