

## **A Clinical Evaluation of Upodika (*Basella rubra* linn.) in the management of Iron deficiency Anemia**

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### **Abstract**

Anaemia is one of the most universally prevalent diseases in the world today and is the most common micronutrient deficiency. Its prevalence is highest in India, 30% adult males 45% adult females in reproductive age 80% pregnant females and 60% children's are having iron deficiency. one of the important contributing reasons for iron deficiency is self imposed and improperly dietary restriction prominently serials based diet which is poor in green leafy vegetables. Iron deficiency of Vitamin C is common cause of iron deficiency Anaemia in our country. It is caused by inadequate supply of dietary iron is most prevalent nutritional disorders in India. *Basella rubra* plant species commonly known as a Upodika found in almost every part of India. In Samhita's it is described as a balya, bruhaniya, Truptikarin. As it is bruhaniya it increases rasadi saptadhahu including raktadhatu . It is also used as vegetable in all over India and it is easily available everywhere and in market in Karnataka cuisine the leaves and stems are used to make curry. The succulent mucilage is particularly rich source of soluble fibre. It is easy available, economical, easy to consume and can be taken as dietary supplement in anaemia as a vegetable in regular food. This Upodika can be a genuine support in case of nutritional and particularly iron deficiency anaemia. Here an attempt was made to establish the nourishing effect of a Upodika with respect to iron deficiency anaemia

**Key words:** Anaemia Upodika, raktadhatu, *Basella rubra*

## **INTRODUCTION**

Human body requires many different Vitamins and Minerals that are crucial for both development and preventing disease. These micronutrients are not produced naturally in the body; they need to be derived from the daily diet. This deficiency can lead to many diseases, which can turn to be fatal. The most common nutritional deficiency worldwide is iron deficiency, anaemia and affects women more often than men. Iron deficiency anaemia affected 1.2 billion person resulted in about 183,000 deaths. Iron deficiency anaemia is characterised by the sign of pallor and reduced oxy-haemoglobin in skin or mucous membranes and the symptoms of fatigue, light headedness and weakness, poor appetite, palpitations, hair loss, insomnia, irritability etc. The modern treatment for anaemia depend on cause and severity. Vitamin supplements given orally folic acid or Vitamin B12, oral iron supplementation with ferrous sulphate, ferrous fumarate or ferrous gluconate. The disease mentioned in Ayurvedic Samhita's strikingly similar to Anaemia of modern science is Pandu. The dhatu which is affected in this disease

according to Charaka and Ashtanga is Rasa. Any abnormality in these dhatu's can lead to malfunctioning of their prakrutha karma. *Basellarubrais* a plant species commonly known as Upodika (family Basellacea) found in almost every part of India. In Samhita's it is described as a Balya, Bruhaniya, Truptikarini which increases rasadisaptadhatu including Raktadhatu.. It has Madhura rasa and Shitavirya and Madhuravipaka. It is easily available, economical, easy to consume and can be taken as a dietary supplement in anaemia as a vegetable in regular food. An attempt is made in this study to see its efficacy with reference to Iron deficiency Anaemia.

## **AIM AND OBJECTIVE OF STUDY**

- Evaluation of Upodika for its Rakta Vardhak property with respect to Iron deficiency anaemia.

## **MATERIAL AND METHODS**

### **Materials**

### **Selection of patients**

The patients of either sex suffering from Iron deficiency anaemia were randomly selected from OPD and IPD of Shri. JGCHS Ayurvedic College

Hospital by considering inclusion and exclusion criteria.

**Drugs selection**

- A genuine sample of Upodika was collected from J.G.C.H.S.A.M.C herbal garden.
- The leaves of Upodika were pounded in Khalva yantra and swarasa was strained and used for the study.

**Methods of collection**

**A) Inclusive criteria**

- Mild to moderate Anaemia.
- Patients of either sex will be taken for study.
- Patients of 16 yrs – 50 yrs of age.
- Non smoker

**B) Exclusive criteria**

- Patients with severe anaemia.
- Patients with worm infestation.
- Patients suffering with any infectious disease like Malaria.
- Patients suffering from systemic and dreadful diseases are excluded from study.
- Pregnant Women.
- Menorrhagic disorders and other bleeding disorders are excluded.

**Assessment criteria :**

**Subjective Parameters:**

- Alparaktata
- Alpamedaska
- Nissara
- Shithilendriya
- Gatrapida
- Aruchi
- Nidranasha

**Objective parameters**

Haemoglobin percentage

**Treatment schedule**

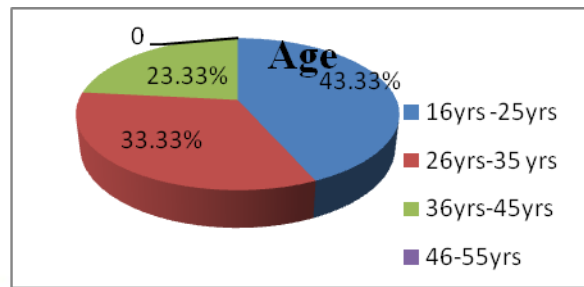
MEDICINE-Swarasa of Upodika  
DOSE- 1/2Pala(20ml) Swarasa twice a day  
DURATION- 45days  
FOLLOW UP- for every15 days upto 45days

**Statistical Analysis:**

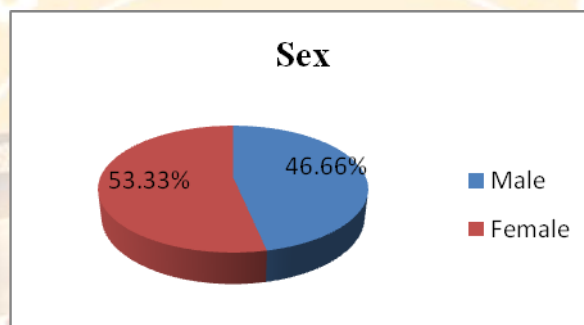
For assessing the improvement of symptomatic relief and to analyze statistically the observations were recorded before and after the treatment. The mean percentage, S.D, S.E, and t -value (paired t-test) were calculated and analysed.

## OBSERVATIONS AND RESULTS

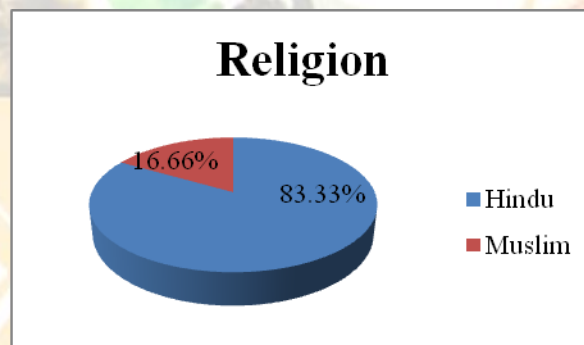
**Graph No. 1 Showing Age wise distribution of patients:**



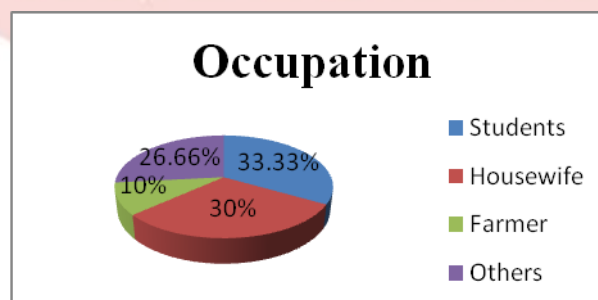
**Graph No. 2 Showing Sex wise distribution of patients:**



**Graph No. 3 Showing Religion wise distribution of patients:**

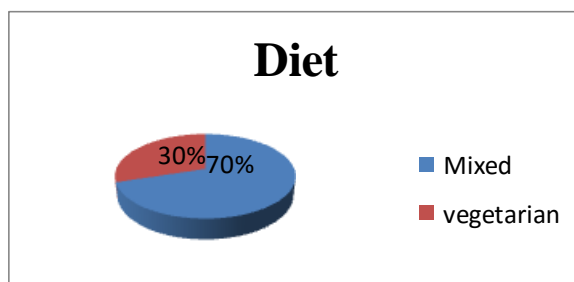


**Graph No. 4 Showing Occupation wise distribution of patients:**

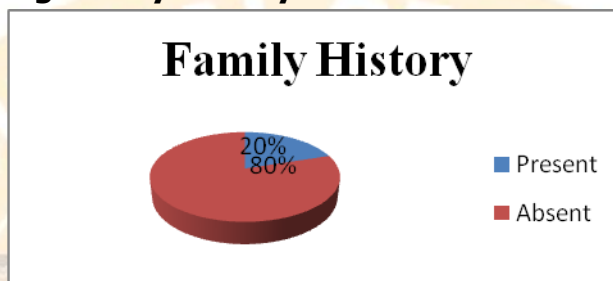




**Graph No. 5 Showing Diet pattern wise distribution of patients:**



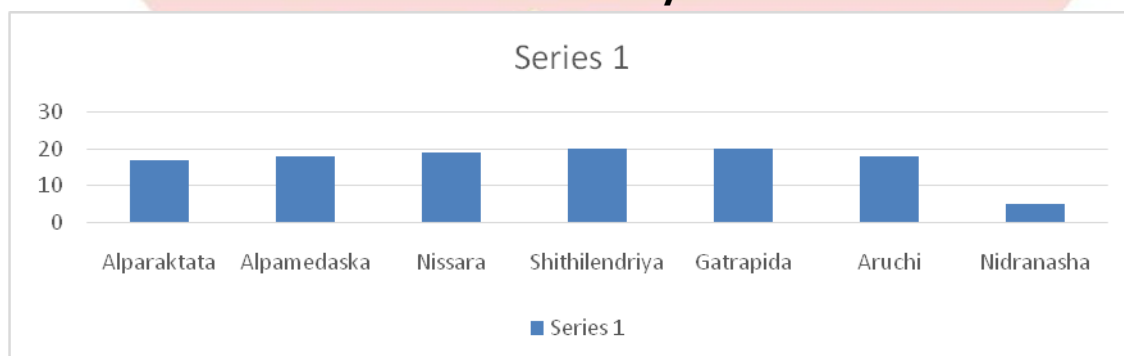
**Graph No. 6 Showing Family History wise distribution of patients:**



**Table No. 26. Showing Incidence of symptoms seen in patients selected for the study:**

Symptoms	Incidence	Percentage
Alparaktata	17	56.66%
Alpamedaska	18	60%
Nissara	19	63.33%
Shithilendriya	20	66.66%
Gatrapida	20	66.66%
Aruchi	18	60%
Nidranasha	5	16.66%

**Graph No. 7 Showing Incidence of symptoms seen in patients selected for the study:**



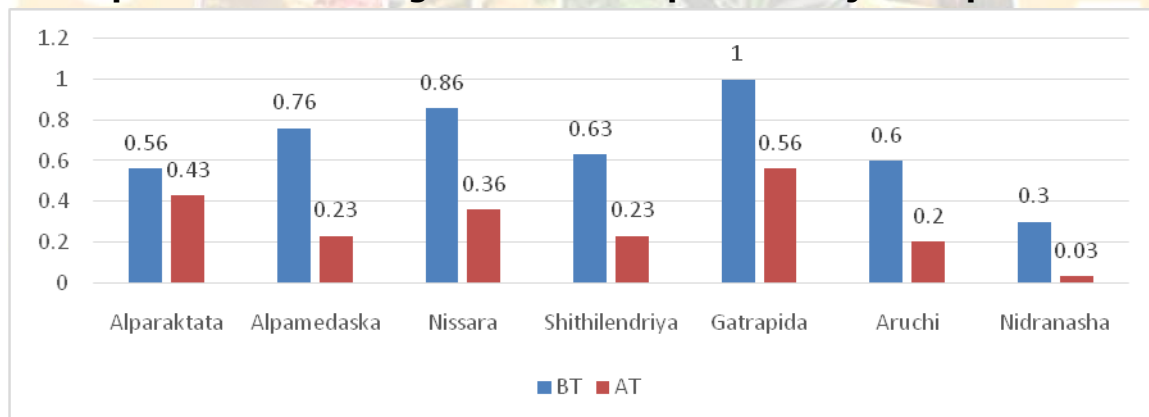
## RESULTS

The results are considered as mirror of the scientific research done by the scholar. The results obtained on subjective clinical parameters such as Alparaktata, Alpamedaska, Nissara etc. and objective clinical parameters such as Hb%.

**Table No. 27 Presenting Effect of therapies on subjective parameters:**

Main Symptoms (n=30)	Mean Score		% of relief	SD	SE	't' test	'p' value
	BT	AT					
Alparaktata	0.56	0.43	13.33%	0.5	0.09	1.48	<0.1
Alpamedaska	0.76	0.23	53.33%	0.64	0.11	4.8	<0.001
Nissara	0.86	0.36	50%	0.71	0.13	3.48	<0.001
Shithilendriya	0.63	0.23	40%	0.49	0.09	4.49	<0.001
Gatrapida	1	0.56	43.33%	0.71	0.13	3.3	<0.01
Aruchi	0.6	0.2	40%	0.52	0.09	4.44	<0.001
Nidranasha	0.3	0.03	26%	0.52	0.09	2.88	<0.01

**Graph No. 8 Presenting Effect of therapies on subjective parameters:**



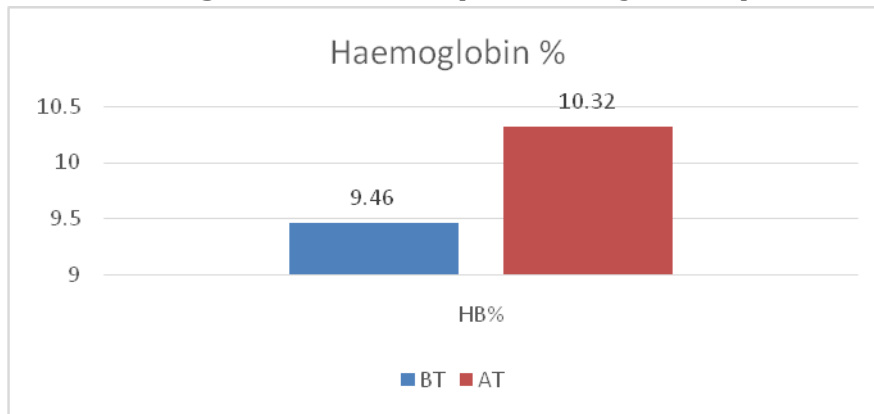
**Table No. 28 Presenting Effect of therapies on objective parameters:**

Hb% (n=30)	Mean Score		% of relief	SD	SE	't' test	'p' value
	BT	AT					
<b>Haemoglobin</b>	<b>9.46</b>	<b>10.32</b>	<b>88%</b>	<b>1.17</b>	<b>0.21</b>	<b>4.19</b>	<b>0.001</b>

Above table shows effect on objective parameters such as Hb of 30 patients of Iron deficiency Anaemia:

The average Haemoglobin increased 88% which was statistically highly significant at the level of  $P < 0.001$ .

**Graph No. 9 Presenting Effect of therapies on objective parameters:**



## DISCUSSION

Pandu roga is caused due to Nidanas such as Mithya Ahara-Vihara that result ultimately in Kuposhana. Alparaktata and Alpamedska, Nissara, Shithilendriya are the Pratyatma lakshanas in the other associated symptoms due to dosha-dushya sammurchana are Agnimandya, Alasya, Angamarda, Anaha, Trishna, Tandra, Gatrashoola and signs like Panduta, Rukshata, Shotha, etc which co-relates with the symptoms of nutritional deficiency anemia, especially the Iron Deficiency Anemia.

The prevalence of this disease is very high in the developing countries like India, due to the poverty, malnutrition, recurrent pregnancy and poor antenatal care. In both these comparable disease

conditions the prime factor affected is Rakta which is essential for a variety of vital physiological activities like proper nutrition transport, waste removal, oxygen carrying, thermoregulation etc. Our ancient acharyas have mentioned its prime function as jeevana.

### Probable mode of action of Upodika:

Upodika has been mentioned in almost all ayurvedic samhitas. It has Madhura rasa, Madhura vipaka and Sheeta virya. Hence it has properties like Balya, Bruhana and Sarva Dhatu vardhaka, Vrishya, Truptikarini, Raktapittahara, etc.

Rakta and Pitta have Ashraya-ashrayi relation with each other and get mutually vitiated in Pandu. Upodika, by virtue of its Madhura,

Madhura, Sheeta Rasa, Vipaka and Virya respectively, acts as Pitta shamaka and also as an overall Dhatu Vardhaka. Hence it improves the quality and quantity of Dhatus, especially Rasa and Rakta. Thus it helps in curing Pandu Roga..

### **CONCLUSION**

After thorough analysis of the classical text and modern science information, and some of its understanding in clinical study, the probable outcome was that the majority of the symptoms of Panduroga have similarity with the features of Iron deficiency anaemia, and iron deficiency anaemia is one such disorder existing worldwide with varied percentage..The study reveals dominancy of Pitta Dosha, Rakta Dhatu Dushti, Rasavaha and Raktavaha Strotodushti in the pathogenesis of panduroga.The results obtained during the study conclude that the Upodika has good results in relief of the symptoms like Pandutva, Daurbalya, Shitilandriya, Nissara, and Aruchi.It was effective in increasing the Hemoglobin percentage although in slower rate.The mean difference in Hb% was 0.4650 with  $P < 0.001$  which is statistically significant.The

present study was carried on small sample for a partial period and it showed results. However further study is necessary including large sample to draw valid conclusions and for the same, this study provides a base and hope.

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