



Review Article

PRELIMINARY EVIDENCE ON EFFECTIVENESS OF *RAKTD*A (MA 321), AN AYURVEDIC SUPPLEMENT, FOR OPTIMUM MANAGEMENT OF ANAEMIA – A SHORT REVIEW

Sanjay Chhajed¹, Rini Vohra^{2*}, Anand Shrivastava³

¹Chief Physician and Mentor, Chhajed Ayurved Clinics & Academy, 3/B-006, Patidar CHS, Sharada Nagar, Wasari Hills, Malad-West, Mumba, India.

^{2*}Adjunct Associate Professor, School of Science of Consciousness, Maharishi University of Information Technology, Maharishi Nagar, UP, India.

³Chairman, Maharishi Ayurveda Pdts. Pvt. Ltd., Noida Special Economic Zone, UP., India.

ABSTRACT

Despite multiple nutritional programmes and iron supplementation therapies adopted over the past 50 years, Anaemia remains a highly prevalent condition in India. The underlying pathogenesis associated with Anaemia includes not only nutritional deficiencies, but also the issues with optimum absorption, bioavailability of food nutrients, and assimilation of absorbed nutrients. The current review comprises preliminary evidence on *Rakt*da (MA 321), an Ayurvedic supplement for adjuvant or monotherapy use in long term treatment of Anaemia. *Rakt*da has a holistic combination of ingredients including *Mandoor Bhasma*, *Kant Lauh Bhasma*, *Praval Pishti*, *Muktashukti Pishti*, *Giloy Sattva*, *Yashtimadhu*, *Shilajit*, *Amalaki* and many other herbs traditionally useful for treating all types of Anaemia and its associated morbidities. The synergy of herbs in *Rakt*da reinstates normal physiology by functioning at five different levels: *Agni*, *Pitta Dosha*, *Rasa Dhatu*, *Rakta Dhatu*, and *Rasayana*. A small sample study (n = 16) on *Rakt*da has shown an increase in mean Hb% from 9.231 to 11.046 (paired t-value= 8.5475, SE = 0.212, p<0.0001) - a change of mean by 1.815 points (95% CI = 1.353- 2.278), within a period of 30 days. Another study on *Rakt*da (n = 47) has shown the beneficial effects of *Rakt*da on increasing Hb% (7.16 to 11.13) and other anaemia symptoms such as fatigue, pain in legs, narcolepsy, anorexia, and faintness of skin. The current review outlines the need for conducting large scale investigations on *Rakt*da, which can be used for treating Anaemia in the long run.

KEYWORDS: Anaemia, *Rakt*da, Iron-Deficiency, Ayurveda, Integrative Medicine; Megaloblastic Anaemia; Sickle Cell Anaemia.

INTRODUCTION

Around 1.62 billion individuals (24%) across the globe suffer from some form of Anaemia^[1], and in India around 40% are affected by this condition ^[2]. In India, Anaemia is known to cause poor birth outcomes, impaired cognitive and behavioral development in children, and decreased productivity among adults. One in every two women in India have Anaemia, which is also the major underlying cause of 20-40% of maternal deaths in India^[3]. Despite the adoption of National Nutrition Anaemia Prophylaxis Programme in 1970, Anaemia still remains a largely untreated health condition^[4]. The most common cause of Anaemia in India is nutritional iron deficiency and the major cause of iron deficiency in children is the poor bioavailability of iron consumed in regular diet^[5]. The iron levels in human body are primarily controlled by absorption of dietary iron

occurring in the duodenum and proximal jejunum^[6]. In Ayurveda, Iron Deficiency Anaemia or simply Anaemia can be correlated with *Pandu Roga*, an imbalance in *Rasa Dhatus* (Nutritive Fluid) predominantly caused by *Pitta Dosha* (Humor) vitiation leading to disturbed *Rakta Dhatus* (Blood; alteration of the blood chemistry) ^[7]. This further leads to either reduced blood production (*AlpaRakta*) and/or vitiated blood (*Vidushya Rakta*) causing symptoms such as pallor (*Pandu*), fatigue, and headaches, etc^[8]. Traditional treatment of Anaemia includes replenishment of deficiencies with iron and folic acid supplements, an approach which undermines the role of proper metabolism, absorption & assimilation, and elimination. The conventional supplementation approach also doesn't correct the ongoing pathogenesis of chronic disease

and has been unsuccessful in restoring balance and treating Anaemia in the long run for a large subgroup of patients^[9]. In addition, oral form of Iron is also not easily tolerated by some patients^[9].

Raktada (MA 321) is a holistic combination of calcinated iron, processed calcium, micro-nutrients, minerals and herbs which induce normalcy of gastrointestinal mucosa to raise permeability of iron, calcium and micro nutrients from the normal food intake. In addition, the combination of herbs in *Raktada* work synergistically to address the non-nutritional etiological factors (e.g. hepatic functioning for iron regulation and spleen functioning for optimum blood filtration and elimination) associated with development of Anaemia, leading to more lasting therapeutic effects. *Raktada* is carefully designed using the tenets of Maharishi Ayurveda (based on guidelines of His Holiness Maharishi Mahesh Yogi) to treat the pathogenesis of Anaemia, iron-deficiency, fatigue, calcium deficiency, low immunity, and pain by balancing of the *Agnis* (Digestive/Metabolic fires) and the three *Doshas* (broadly): *Vata* (V), *Pitta* (P), and *Kapha* (K) *Doshas*. Individual ingredients in *Raktada* have been scientifically validated for safety and effectiveness and *Raktada* has been beneficially used by individuals of all ages for the past 35 years. The recommended dosage is 2 tablets twice a day or as directed by the physician.

Description of Raktada

Principal ingredients of *Raktada* include micronized particles of *Kant Lauh Bhasma* (Magnetic Iron- Calcined 64 put; VPK) and *Mandoor Bhasma* (Ferric Oxide-Calcined 64 put; PK) for optimum iron supplementation and absorption and hepatocurative effects^[10], calcium supplementing *Praval Pishti* (Coral; PK)^[11] and *Muktashukti Pishti* (Pearl Oyster Shell; PK), both of which are better absorbed by the body as compared to conventional mineral based calcium supplements^[12], calcined *Varatika Bhasma* (Cowrie Shell; V) and *Shankh Bhasma* (Conch Shell; VPK) for calcium supplementation and aiding in malabsorption and digestive impairments, *Shudh Shilajit* (Purified Asphaltum; VK) for minerals and micronutrients that improve fatigue induced muscular weakness^[13,14], *Giloy Sattva* (*Guduchi*; VPK) for anti-inflammatory^[15], anti-oxidant, hepatoprotective^[16,17], and immuno-stimulatory effects^[18,19], *Chuhhara* (Dry Dates; VPK) as a rich source of vitamins (e.g. Vit A, B12, and folate) and minerals^[20,21], *Amalaki* (Indian Gooseberry; VPK) for its cytoprotective and immunomodulatory activity^[22,23], *Laung* (Clove bud; PK) for its anti-inflammatory and anaesthetic effects^[24], *Nagkeshar* (Cobra's Saffron Flower; PK) for its antioxidant and anti-arthritis

activity^[25,26], *Yashtimadhu* (Licorice Root; VP) for anti-inflammatory, antioxidative, immunomodulatory, and hepatoprotective qualities^[27]. *Raktada* also has some ancillary herbs to support the aforementioned active ingredients such as *Chhoti Elaichi* (Cardamom; VPK), *TejPatta* (Bay Leaves; VK), *Chotti Pippali* (Long Pepper; VPK), and *Mishri* (Cane Sugar).

Raktada therapeutic effects can be attributed to the synergy of herbs and minerals that function holistically at five different levels in the body: 1) *Agni* (Digestive Fire): *Raktada* stimulates the *Kaya Agni* thereby the *Dhatu Agni* because of herbs such as *Laung*^[28], *Nagkeshar*^[29], *Elaichi*^[30], *Tej Patta*^[31], and *Pippali*^[32], all of which are *Agni* stimulating herbs. These herbs also work on *Yakrut* (Liver) which is the site of *Ranjak Pitta* responsible for production of red blood cells and its color. 2) *Pitta Dosh* (Metabolism): The combination of *Sudha Chaturthak* (*Praval Pishti*^[33], *Muktashukti Pishti*^[34], *Varatika Bhasma*^[35], and *Shankh Bhasma*^[36]) along with *Giloy Sattva*^[16] reduce the *Dravibhuta Sam Pitta* (Liquefied *Pitta*), a main component of *Samprapti* (Acquisition) of *Pandu Rog*; 3) *Rasa Dhatu* (Nutritive Fluid) – *Shankh Bhasma*^[36], *Yashtimadhu*^[37], *Chuhhara*^[38], *Pippali*^[39], and *Mishri* stimulate nutrition; 4) *Rakta Dhatu* (Blood): *Kant Lauh Bhasma*^[40] and *Mandoor Bhasma*^[41] provide direct nutrition and better iron absorption. 5) *Rasayana* (Homeostasis): *Shudh Shilajeet*^[42], *Amalaki*^[43], and *Pippali*^[39] form a potent *Rasayana* which prevents *Rakta Kshaya* (Blood Deficiency) due to *Rasa Kshaya* (Nutritive Fluid Deficiency).

Research on Raktada

Two pilot observational studies have shown beneficial effects of *Raktada*. A study by *Vaidya Sanjay Chhajed* (Chhajed Ayurved Clinics & Academy, Mumbai, India) included 16 patients (5 males and 11 females; Final n = 13; Age 2-42 years) with a clinical diagnosis of some form of Anaemia (4 sickle cell Anaemia; 3 menorrhagia; and 9 Iron Deficiency Anaemia) who were randomly selected and administered *Raktada* for a period of 30 days (Dosage: 2 tabs for 10 days & 1 tab for 20 days). No other therapy was used concomitantly. The mean Hb% g/dl in patients increased from 9.231 to 11.046 (paired t-value= 8.5475, SE = 0.212, p<0.0001) - a change of mean by 1.815 points (95% CI = 1.353- 2.278).

Another study by *Vaidya Hemant Sadashiv Gabale* (Shivaji University, Solapur, Maharashtra) examined the impact of *Raktada* on blood profile and *Pandu Rog* symptoms for 47 patients (17 males and 30 females) with a clinical and *Vaidya* reported diagnosis of iron deficiency Anaemia /*Pandu Roga*. The patient sample was primarily 30 years and above

age (n=34, 72.3%), with high school education (n=25, 53.1%), and householder/professional workers (n=29, 61.7%). Around 45% (n=20) had a vegetarian lifestyle as compared to 55% being non-vegetarians/mixed diet. About 19% (n=9) reported use of alcohol and another 19% (n=9) reported using tobacco and 11% (n=5) reported regular smoking. After treatment, almost 78% of the patients showed marked to complete improvement, whereas 19% showed slight to moderate improvement. The mean Hb% g/dl increased from 7.16 to 11.13. In addition, patients also showed significant improvements in *Vaiyarnya* (Faintness on Skin, 46.8% before vs. 9%

after; p=0.008), *Alparaktata* (Low Hb, 100% before vs. 8.5% after; p=0.000), *Nidralu* (Narcolepsy, 53.2% before vs. 10.8% after; p=0.0002), *Pindikod Wedan* (Pain in Legs, 85.1% before vs. 12.8% after; p=0.0002), *Shrama* (Tiredness, 100% before vs. 4.2% after; p=0.0002), *Bhrama* (Giddiness or Absent mindedness, 61.7% before vs. 8.5% after; p=0.0002), *Agnimandya* (Anorexia, 95.7% before vs. 6.38% after; p=0.0002), and *Akshitha Shotha* (Swelling, 39% before vs. 4.25% after; p=0.0002). No side effects or adverse events were observed in either of the two studies.

Table 1: Vaidya reported improvement in other Anaemia outcomes

Outcome	Before	After	P value
<i>Vaiyarnya</i> (Faintness on Skin)	46.8%	9%	0.008
<i>Alparaktata</i> (Low Hb)	100%	8.5%	0.000
<i>Nidralu</i> (Narcolepsy)	53.2%	10.8%	0.0002
<i>PindikodWedan</i> (Pain in Legs)	85.1%	12.8%	0.0002
<i>Shrama</i> (Tiredness)	100%	4.2%	0.0002
<i>Bhrama</i> (Giddiness or Absent mindedness)	61.7%	8.5%	0.0002
<i>Agnimandya</i> (Anorexia)	95.7%	6.38%	0.0002
<i>Akshitha Shotha</i> (Swelling)	39%	4.25%	0.0002

Note: Results are reported among patients before and after taking *Raktada*

CONCLUSION

The ingredients in *Raktada* and the findings of two observational studies collectively suggest beneficial monotherapy or adjuvant use of *Raktada* in different types of Anaemia. The current review underlines the need to conduct further investigations on use of *Raktada* with randomized controlled trial design and bigger sample sizes.

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***Address for correspondence**

Dr. Rini Vohra

Chief Scientific Advisor,
Maharishi Ayurveda Pdts Pvt. Ltd.,
Noida Special Economic Zone, UP.
E mail: rinievohra@gmail.com;
rini.vohra@muit.in
Contact: 9811910110

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