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Analysis of Amalaki Avaleha in *Garbhini Pandu* – A Drug Review

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Abstract

Motherhood is the privilege or birthright of every women & it is the crowning act of her feminine role of life. She is center of the *Suprajanirmiti*(Creation of healthy progeny) . Women go through a variety of physiological changes during pregnancy. Pregnancy induced anaemia is very common condition which involves the fall in Hb concentration.If *Anaemia* is not treated on time, it may give rise to maternal complications like preterm labour, increased risk of infection, PPH and fetal complications like low birth weight, growth retardation .The line of treatment in *Pandurog*a*i*s *shodhana*, but it is contraindicated in pregnancy. Hence appropriate *shamana* treatment has to be adopted. Therefore a conceptual study of *AmalakiAvaleha* mentioned in *Yogaratnakar Purvardh Pandu Roga Nidhan*[8]is taken for evaluation in this article.

Keywords: AmalakiAvaleha,GarbhiniPandu, Iron Deficiency Anaemia.

Introduction

Anaemia either directly or indirectly contributes to about 20% of maternal deaths in the third world countries[1]. Anaemia in pregnancy is seen proportionally more than other complications in pregnancy due to fetus, within developing countries like India. Maternal diet & maternal tissues store supply nutrients to the fetus. No mother will be able to meet the extra demand of nutrients by diet alone. Pregnant women need to absorb 2-3 times the amount of Iron compared to non-pregnant women. In Pregnancy, nutrition is used for nourishment of herself, fetus, placenta and breast. So nutritional requirements are high during pregnancy, which if not fulfilled will lead to deficiency disorders like Iron deficiency anaemia (I.D.A). WHO has accepted up to 11gm% as the normal haemoglobin level in pregnancy. In India & most of the other developing countries the lower limit is often accepted as 10gm%[2]. According to WHO in India incidence of Anaemia during pregnancy has been noted as high as 40-80%[3].

Pandu is *a Rasa Pradoshaja Vikara*[4]and *Santharpanotha Vikara. Pandu* is a disease characterized by pallor of body which strikingly resembles with Anaemia of modern science. *Garbhini Pandu* as such is not described in *Ayurvedic* classics but some passing references are present. *Acharya Harita* has described Asta *Garbhopadrava* in *Harita Samhita*[5]& included *Vivarnata*, which appears to be pallor that accompanies anaemia. *Acharya Charaka* in *Sharira Sthana*has explained about *Balavarnahani* of *Garbhini* in 6th month of pregnancy[6]. It can be considered as reference for *Garbhini Pandu*. The growing fetus is nourished by the *Rasa* of the mother[7]. It is clear that *Garbhavasthajanya Pandu*

occurs due to the fetal demands & improper functioning of the *rasadhatu* leading to malnourishment of the body.The line of treatment in *Panduroga* is *shodhana,* but it is contraindicated during pregnancy. Hence appropriate *shamana* treatment has to be adopted. Thus an attempt is made through this article to review *Amalaki Avaleha* because of its *Deepana, Pachana, Shonitasthapana* and *Rasayana* properties, in *Pandu Roga* of *Garbhini* in the parlance of Iron Deficiency Anaemia.

Aim & Objectives

- To study the literatures on the ingredients, action of *Amalaki Avaleha* in *Garbhini Pandu.*

Materials and Methods

All the drugs mentioned in *Amalaki Avaleha* explained in *Yogaratnakar Purvardh Pandu Roga Nidhan*[8] text will be revived depending upon on *Guna-karma* (Properties-Effect), *Doshahara* propertieswith Chemical composition of each ingredient of the drugs.

Amalaki Avaleha: [8]

It contains following ingredients:

- *Amalaki*
- *Pippali*
- *Yastimadhu*
- *Munnaka*
- *Ardraka*
- *Vanshlochana*
- *KhandSharkara*
- *Madhu*

Pharmacodynamics of the drug:

Table no – 1

ravya	Gana	Family	Latin Name	Synonames
Amalaki[9]	*Vayasthapana,Virechanopaga(Cha), Triphala, Parushakadi (Su)*	Euphorbiaceae	Emblicaofficinalis	*Dhatri*
Pippali[i0]	*Kasahara,Hikkanigrahana, Vaman, Deepaniya, Triptigna, (Chu) Pippalyadi, Urdwabhagahara,Shirovirechana(Su)*	Piperaceae	Piper longum	*Magadhi,Vaidehi, Krishna,Kana, Chapala,Ushana, Shoundi,Kola, Tikshnatandula*

Yastimadhu[11]	*Kantya, Jeevaniya, Sandhaniya, Varnya, Shonitasthapan, Kandugna , etc(Cha) Kakolyadi, Sarivadi, Anjanadi (Su)*	Leguminosae	GlycyrrhizaGlabra	*Madhuka, Klitaka*
Munnaka[12]	*Snehopaga, Virechanopaga,Kasahara, Jwarhara(cha) Kakolyadi, Parushakadi (Su)*	Vitaceae	VitisVenifera	*Draksha, Mrudvika, Gostani, Munnakka*
Ardraka[13]	*Triptigna, Arshogna, Deepaniya, Shoolaparshamana, Trishnanigrahana,(Cha), Pippalyadi, Trikatu (Su)*	Zingiberaceae	Zingiberofficinale	*Nagar,Mahaushadha, Vishwbheshja Shringbera*
Vanshlochan[14]	-------	Graminae	Bambusaarundinacea	*Vamsa, Venu, Twaksara, Trindwaja,Shatparv, Yavaphala*

Table no – 2

Dravya	***Rasa***	***Guna***	***Veerya***	***Vipaka***	***Doshaghanata***
Amalaki	*Panchrasa (Lavanavarjit) Amlapradhan*	*Guru. Ruksha, Sheeta*	*Sheeta*	*Madhura*	*Tridoshagna*
Pippali	*atu*	*LaghuTeekshana Snigdha*	*Sheeta*	*Madhura*	*KaphaVata Shamaka*
Yashtimadhu	*adhura*	*Guru Snigdha*	*Sheeta*	*Madhura*	*KaphaVata Shamaka*
Munnaka	*adhura , ashaya*	*Guru Sheeta*	*Sheeta*	*Madhura*	*Kapha Pitta Shamaka*
Aardaraka	*atu*	*Laghu Snigdha*	*Ushna*	*Madhura*	*KaphaShamaka*
Vanslochan	*Madhura Kashaya*	*Ruksha, Laghu, Tishna*	*Sheeta*	*Madhura*	*Vata Pitta Shamaka*
Kandasharkara	*dhura*	*Guru, Snigda, Sara*	*Sheeta*	*Madhura*	*Vatapittahara*
Madhu	*MadhuraKashaya*	*Ruksha, Laghu, Sheeta*	*Usna*	*Madhura*	*Tridoshahara*

Table no - 3

Drug Name	Chemical Composition	Action
Amalaki	The fruit pulp contains moisture 81.2%, protein 0.5%, fat 0.1 %, mineral matter 0.7%, fiber 3.4%, carbohydrate 14.1%, calcium 0.05%, phosphorus 0.02%, iron 1.2 mg/100 gms, nicotinic acid 0.2 mg/100 gms and vitamin C 600 mg/100 gms. Vitamin C content upto 720 mg/100 gms of fresh pulp and 921 mg/100 gms of fresh juice has been recorded. The fruit is rich source of pectin.	*Rasayana, Vayasthapana, Hrudaya, Sothahara, Sarvadoshahara, Medhya, Sonitasthapana, Nadi-Indriya-Mastiskabalya, Kaphaghna, Rochana, Dipana, Anulomana, Raktastambhaka, Stambhana, Sansrana, Raktaprasadhana, Yakrduttejak, Plehahat, Balavibaradhana, Jivaniya, Jvarghna, Chaksusya, Sramhara, Rakta-pitta samaka.*
Pippali	Essential oil 0.7 %, mono and sesquiterpenes, cryophyllene, piperine (4-5%), piplartine, piperlongumine, piercide, sesamin, piperundecalidine, β-sitosteral, four aristoclactams, cepharanone B, pernonaline. Fruit contains L-tyrosine, LCysteine,-Serine, L-aspartic acid. Essential oil like N-hexadecane,N-heptadecane, N-Octadecane, N-nonadecane, N-ecosnae.	*Medhya,Kaphavatahara,Rakthashodhaka, Raktavardhaka, Yakritduttejaka,Rasayan, Deepan, Pachan, Kasa, Swasa, SootikaJawara, Vrishya, Balya.*
Yashtimadhu	Root contain glycoside, glycyrrhizin (2-14 %) glycrrhizic acid, glycrrhenticacid, asparagines, sugar also contains flavones, liquirtin. Glucose 3-5%, Sucrose 2.6-6.4 %, Starch 30 %, asparagines, volatile oil 0.03-0.35% steroidal oestrogen.	*Raktaprasadan, Balya, Varnya,Medhya, Amlapittahara,Vatapittashamaka, Keshya, Chrdinigrahana, Mutral, Shukravrdhaka.*
Munnaka	Mature ripe fruit contains 15 % sugar, tartaric acid, crude protein, mineral content of raisins is dominated by Ca,	*Vatapittashamak, Medya, soumansyajanana, trishnanigrahana, Raktaprasadana,Raktapittashamaka, Sandhankaar, GarbhasthapanaBalya.*

Drug Name	Chemical Composition	Action
	P, Fe, while Vit. are carotenes, thiamine, riboflavin, niacin, Vit C. It also contain folic acid and pyridoxine, bioflavonoids. Enzyme like invertase, catalase, ascorbic acid, oxidase, peroxidase, polyphenol.	
Aardaraka	Protein 2.3 %, fat 0.9 %, carbohydrate 12.3 %, minerals 1.2 %, calcium 20 %, phosphorous 60 %, iron 2.6 mg/ 100 gm, iodine, chlorine trace, Vit. A,B,C.Fresh fruit contain moisture 72.8 – 77.2%, Acids 0.23 – 0.53%, Sharkra 16.69 – 18.60 %. α-Curcumene, d-camphene, gingerol, glycolipids A,B &C Gingerdiol, gingerone B & C etc.	*Shothahara, Vedansthapana,dipana, pachan,Kaphaghna, Swasahara, Jawarghna. Blood purifier useful in Amlapitta, shulaparshaman,*
Vanshlochana	It contain 90% Silica, Iron peroxide, Potash, Aluminium, Carbohydrate, many enzymes, Gulcosides.	*Kaphapittashamaka, Varnya, kushtagna, Deepana, Pachana,Krimigna,Grahi, Hridya, RaktasthambanaArtavajanana,Jwargna, Balya,*
Ghrita[15]	Moisture 14.4 %, Fat 32.4 %, Protein 36%, Lactose12%,Ash5.2%, β-Carotene,Vit-A,D,E,K, Linoleic Acid 4-5 %, other lower saturated fatty acid 8%. Rate of adsorption 96 %.	*Guru, Sheet virya, Madhuravipaka, Vata pitta shamaka, Balya, Rasayan, Agnideepak, Raktavikaranashak, Yogavahi. Linoleicacid–growth promoter, Vit – A & E – antioxidantaction, Lipophilic in nature.*
Madhu[16]	Specific gravity 1.356 – 1.361 %, Sucrose 0.4 -0.6 %, Moisture 14-24%, Dextrose 23-36 %, Dextrin, Vit B & C	*Tridoshahara, Yogavahi, chedan, Raktapittahara, Grahi,Agnideepak, Varna Srotoshodhaka, Rochak. prasadhan,Debility,*
Sharkara[17]	Glucose , Fructose, Sucrose	*Balya,Brumhana, Vatapittahara, Avidahi, Kaphaprada,*

Table no - 4

Dravya	Habitat	Chief Character	Parts used
Amalaki	It is found all over the India	A medium sized deciduous tree , bark light	*Phala*

	, common in the forest mixed deciduous of India ascending to4500ft.	grey or greenish , peeling off in small regular patches. Leaves small very closely set in pinnate from giving a feathery appearance. Flowers small yellowish in axillary clusters. Fruits round, 1/2-1 inch diameter , fleshy, yellowish - green colour. The lines account for the outer six vertical ribs present .	
Pippali	Throughout India-Karnataka, Tamilnadu, U.P, Bihar , WstBengal	Slender aromatic climber with perennial woody roots, stems creeping below young shoots downy. Leaves 2-3ince long round, ovate, 7 nerved, sinus rounded but narrow. Fruit, in transaction of the fruiting spikes are seen one seeded fruit lets, arranged in circle on the main axis. dry pippali is greyish and ripe is reddish in colour	*Phala* *Moola*
Yastimadhu	China, Arab, Iran, Asia, Urope Delhi, Jammu kashmir	It is 2-6 ft high tender stem , hardly perennial herb or under shrub. Leaves multifoliate, imparipinnate, ovoid in shape. Flowers lavender to whitish in colour. Pods compressed about 1 inch long, flat, Seeds kidney shaped,2-3 or more. Root stock with roots and stolons . dried pieces of small and big sizes, peeled & unpeeled root form drug yastimadhu	*Moola*
Munnaka	Panjaba, Kasmira, Afaganistan.	A large deciduous climner, tedrils long, bifid. Leaves 7-8 inches long, orbicular, cordate, 5 lobed, margin irregular, coarsely toothed . Flowers green, petals 5 covering at apex. Berry very variable in size , bluish black or greenish. Seeds 2-4, pear shaped	*Phala*
Ardraka	Kerala, Bangal. Udisa, Karnataka, Madhyapradesha	A erect herb with a creeping tuberous rhizome .Root stock horizontal, tuberous rhizome with erect leafy stems. Leaves narrow 6-13inch long. Flowers spike	*Kanda*

		terminating the leafy stem, greenish stalk slender, corolla greenish yellow	
Vanshalochana	Throughout India specially west & south India, Shrilanka, Barma	A tall, throny40-45ft height bamboo girth up to 6-7inch from branching root stalks, bright green, shiny. Leaves 8 inch long, tip sharp .stiff base, rounded, oblique. Flowers once at interval of approximately the clumps of 30yrs then die. Grains resembling with barely in appearance	*Moola, Patra, Patrankura, Phala, Vanshalochana*

Discussion on amalaki avaleha

Amalaki Avaleha contains *Amalaki* as major ingredient and in this *Amalaki* has main role in *Pandu Roga*. *Amalaki* has all *rasa* except *lavana, laghu, rukshaguna, sheetaveerya, tridoshahara* and *pittashamaka*properties. *Pitta* is main *dosha*of *PanduRoga* and *Amla*mitigates the *pitta dosha* and correct the *Pandu*.This also contain ascorbic acid which converts ferric form of iron in ferrous form and iron absorption always take place in ferrous form. So *Amalaki* helps in absorption of iron content which in present in food. it increases the iron absorption which is essential factor in Anaemia.

*Pippali*contain L-tyrosine, L-cysteine, DL-serine, L-aspartic acid which are growth promoter and increases the body weight also.

Yashtimadhu contains constituents mainly glycyrrhizin, glucose, sucrose, starch etc., which are energy promoters of the body. *Yashtimadhu* is also one of the *Rakta Prasadana*. Thus it will correct *Vivarnata*.

Munnaka contain sugar, protein, minerals like Ca, P, Fe, Vitamins like thiamine, riboflavin, niacin, Vit.C, folic acid, pyridoxine which will provide nutrition to body and help to combat debility. *Munnaka* act as *Balya*, purifies and enriches blood so, it will help in treating *Vivarnata* and will increase Hb %.

*Ardaraka*has protein, fat, carbohydrate, minerals, calcium, phosphorous, Fe, Iodine, Vit.A, B, C which will provide nutrition to body. It act as a blood purifier. So, it will treat *Vivarnata* and decrease anaemia.

Vanshlochan is also useful in diseases of blood and general debility and act as a diuretic.

Conclusion

Amalaki Avaleha because of its *Balya, Deepana, Pachana, Shonitasthapana, Rasayana, Varnaprasadanagunas* of the drug is ideal during pregnancy to take care the special needs. The drug administration should be done for longer duration for better results.The drug is proved to be safe formulation during pregnancy without any adverse effect. The medicine is well tolerated by pregnant women because of its palatability qualities. *Amalaki Avaleha* containing ascorbic acid which converts ferric form of iron in ferrous form and iron absorption always take place in ferrous form should be taken under consideration. Hence we can conclude that *Amalaki Avaleha* helps in absorption of iron content which is present in food. It increases the iron absorption which is essential factor in Anaemia.

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