



A CRITICAL STUDY ON THE CONCEPT OF NISAARA IN PANDU WITH SPECIAL REFERENCE TO TREATMENT RESPONSE IN IRON DEFICIENCY ANAEMIA

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ABSTRACT

Complete healthy state of *dhatu* is represented by *saarata*. One Lakshana of *pandu* by *charaka acharya* is *nisaara*, in commentary *chakrapani dutta* commented *nisaara* stands for loss of all the eight variety of *saara* of *dhathus*. Main objective of study is to assess influence of *raktha saarata* in treatment response of iron deficiency anaemia. 30 diagnosed cases of iron deficiency anemia patients with Hb between 7-11. 9g% and serum ferritin level less than 20 µg were selected. *Raktasaarata* of each individual was assessed by questionnaire. Based on *saara* score they are divided into 3 groups (*saara* score 24-29 1st group; 30-35 2nd group and 36-41 3rd group). Haemogram and serum ferritin level also were taken. Next day onwards *vyoshaditakra* for correcting iron deficiency anemia was given to these patients for a period of 45 days. Haemogram was repeated on 15th day, 30th day & 45th day. Serum ferritin analysis was repeated on 30th day of *vyoshadi* administration. At the end of study, noticed that effect of intervention on Hb, RBC, WBC, Platelet, MCHC, MCH, PCV etc was significant in group 1 and 3. But changes in group 1 values were obtained mostly after the total course of intervention while significant changes were noticed in group 3 even in the middle of intervention. The third group who had better *rakthasaarata* got better treatment response. It is seen in this study that in *pandu* patients there will be little *saara* and it has a influence in treatment response. That is Individual with better *rakthasaara* score, get quick response to treatment of iron deficiency anemia.

KEYWORDS: *Asaara, rakthasaara, pandu, irondeficiency anemia, vyoshaditakra.*

INTRODUCTION

Panduroga literally means disease condition marked with pallor or paleness or yellowish white colouration or the body.^[1] There may be various modification of colour such as yellow, green, (*harita, haridra*) in the disease condition described under the *Panduroga*, but as the disease condition is characterized by pallor as the predominant sign, the disease is termed as *PANDU ROGA*. So *Pandu* or Pallor of skin is first observe on the most superficial portion of body and that is skin. But pallor should also be examined in other parts of body described by *Acharyas*, as per them pallor should be also observe in Eyes, Palate, Tongue, Nose, Lips, Palms, Soles, Nails, Feces and also in urine.^[2] These are the important sites to be well examined, complete clinically observations or examine the patients for *Panduroga*.

After considering all these descriptions, one may find it difficult to decide about actual colour by '*Pandu varna*' but if we give a due consideration to *samprapti* of *Pandu* by *Acharya Charaka* who has mentioned that in this

disease there is *Kshaya* or Loss of Varna or General Complexion.^[3] It is a fact that the natural complexion and redness of skin is maintained by proper blood flow through the skin and when there is diminution in quantity and quality of blood, pallor in the skin follows. Here the defect is in the conversion of *rasa dhatu* into *raktha dhatu*. The action *raktha dhatwagni* and *rasa ranjana prakriya* was affected leading to the formation of defective *raktha dhatu*.

The complete healthy state of *dhatu* is represented by *saarata*. Thus the corresponding *saara* represent qualitatively and quantitatively perfect *dhatu* i. e. *dhatu* in their excellent state.^[4] *Pandu* is a *rasapradoshaja vyadhi*. The state of *dhatu* cannot be perfect in *Pandurogi* since the first *dhatu*, *Rasa*, is vitiated in him and *rasa* is the nutritional base of all the *dhatu*s.

While explaining *lakshana of pandu charaka acharya* explain that *pandu rogi* will be *nisaara*,^[5] in commentary *chakrapani dutta* comment that *nisaara* stands for the

loss of all the eight variety of *saara of dhathus*.^[6] *Saarata* reflects not only the state of *dhatu*, but it tells about the state of corresponding *dhatvagni*, *dhatvahara* and *dhatu vahasrotas*. Grading of *saarata* enables the clinician to determine the extent of correction that is required for any particular patient. Out of 8 *saaras*, *rakta saarata* is the one, which is immediately affected by *pandu* since *rakta* is formed from *rasa* and *pandu* is a *rasapradoshaja vyadhi*. The main objective of the study is to assess the influence of *raktha saarata* in treatment response of iron deficiency anaemia.

MATERIALS AND METHODS

The present study is carried out to assess the influence of *rakthasaarata* in treatment response of iron deficiency anemia. Here intervention type of study design is adopted. 30 diagnosed cases of iron deficiency anemia patients with Hb between 7-11.9g% and serum ferritin level less than 20µg were selected from OPD. *Raktasaarata* of each individual was assessed by structured questionnaire and the *raktasaara* index was given to each subject. Based on the *saara* score they are divided into 3 groups (*saara* score 24-29 1st group; 30-35 2nd group and 36-41 3rd group). Haemogram and serum ferritin level also were taken. Next day onwards *vyoshaditakra* for correcting iron deficiency anemia was given to these patients for a period of 45 days. During the course, haemogram was repeated on 15th day, 30th day & 45th day. Serum ferritin analysis was repeated on 30th day of *vyoshadi* administration. Variation in haemogram and serum ferritin level, were compared with *rakthasaara* index of individual.

Preparation of Questionnaire to assess raktasarakshana

Questionnaire was prepared on the basis of cardinal *saara* features, as explained by *Acharya Charaka*^[7] and *Susruta*.^[8] Thus a total of 37 features were obtained for the assessment of *raktasaarata*. Considering the practical difficulty for assessment, the features pertaining to genital organ were not included in the preparation of pro forma, 24 *sara* features were taken into consideration.

The details of these 24 *sara* features

1. Unctous, reddish appearance of ears
2. Unctous, reddish and charming with radiant appearance of eyes
3. Unctous, reddish and charming with radiant appearance of face
4. Unctous, reddish appearance of tongue
5. Unctous, reddish appearance of nose
6. Unctous, reddish appearance of lips
7. Unctous, reddish appearance of the sole and palm
8. Unctous, reddish appearance of nails
9. Sukham - happiness
10. Manaswitmam – enthusiasm
11. Klesaasahishnutvam – intolerance to discomfort
12. Ushnaasahishnutvam – intolerance to heat
13. Uddhatammedha – great genius

Saara Scoring method

Every *saara* feature based on high, moderate, slight, absent was given score of 3, 2, 1, 0 respectively. Total *raktasaara* score of each subject was calculated by adding score of each *saara* feature. The percentage is calculated by dividing total calculated score and maximum score. Maximum score is the value attained if all features are high.

Psychological features of subjects were evaluated by interrogation and also by analyzing their behavior at the time of interrogation and fulfillment of questionnaire. The happiness of the individuals was assessed based on the ladder scale for happiness. Minimental state examination was utilized for the assessment of intelligence.

METHOD OF PREPARATION –VYOSHADI TAKRA

Patients are advised to take *vyoshaditakra* as, 12gm of *vyoshadichoorna*^[9] mixed with 96 ml of *takra*. Close the mouth of the vessel and keep it for a night. Care must be taken to use earthen pots for fermentation of milk and to keep the drug. The next day morning it is filtered. Now the drug is ready for use and it is taken in early morning before food. This preparation is known as *vyoshaditakra*. *Takra* is advised to prepare according to the formula of *acharyasusrutha* ie 2 parts of butter milk and one part of water (2:1).

RESULTS

There is a positive correlation between Ferritin and *saara* score. This indicates that value of ferritin corresponds to *rakthasaara* score. The statistical analysis analysis showed that, treatment response of iron deficiency anemia depends on *rakthasaara* score; individuals with better *rakthasaara* score get faster response to the treatment of iron deficiency anemia. There was significant and gradual increase in mean Hb value in all the three groups. There was significant and gradual increase in mean ferritin value in all the three groups. There was gradual increase in mean RBC count in all the 3 groups, the changes were significant in group 1 and group3 There was significant and gradual increase in mean WBC count in all the three groups There was gradual increase in mean Neutrophil value in all the 3 groups; the changes were significant in group 1 and group3. There was gradual increase in mean Lymphocyte value in group1 and group 3; the changes were significant in group 1 and group3. There was gradual increase in mean Platelet count in all the 3 groups; the change was significant in group 1 and group3. There was significant and gradual increase in mean MCHC value in all the 3 groups. There was gradual increase in mean MCV value in all the 3 groups; the change was significant only in group 3.

Table 1: Comparison of Hb with saara group.

Saara group	Criteria	Mean(Hb)	S. D	P value
1	1 st Day	9.55	.621	≤ .001
	15 th Day	9.81	.591	
	30 th Day	10.24	.650	
	45 th Day	10.54	.650	
2	1 st Day	10.26	1.015	.007
	15 th Day	10.66	1.140	
	30 th Day	10.90	1.264	
	45 th Day	11.21	1.268	
3	1 st Day	10.39	.924	≤ .001
	15 th Day	11.10	1.105	
	30 th Day	11.58	1.182	
	45 th Day	11.98	1.268	

There was gradual increase in mean Hb value in all three groups. And the change was significant (P value 1st group ≤ .001, 2nd group .007 and 3rd group ≤ .001)

Table 2: Comparison of Ferritin with saara group.

Saara group	Criteria	Mean	S. D	P value
1	1 st Day	10.83	3.784	≤ .001
	30 th Day	12.91	3.763	
2	1 st Day	14.22	2.729	≤ .001
	30 th Day	16.88	3.539	
3	1 st Day	15.97	4.211	≤ .001
	30 th Day	19.22	5.633	

There was gradual increase in mean Ferritin value in all 3 groups. And the change was significant (P value 1st group ≤ .001, P value 2nd group ≤ .001 and P value 3rd group ≤ .001).

DISCUSSION

At the end of this study it is noticed that the effect of intervention on Hb, RBC, WBC, Platelet, MCHC, MCH, PCV etc was significant in group 1 and 3. But the changes in group 1 values were obtained mostly after the total course of intervention while significant changes were noticed in group 3 even in the middle of intervention i. e. remarkable changes in these parameters could be noticed in different phases of intervention. Hence it can be assumed that the third group that is, who had better *rakthasaarata* got better treatment response. Because in the third group, i. e. who had better *rakthasaara* the *rakthadhatwagni*, *ranjaka pitta* as well as the concerned *srotas* is in better condition as *saara* is an indicator of quantitative and qualitative perfect *dhatu*. This will help in for getting faster treatment response in iron deficiency anemia. The selected drug *vyoshadithakra* is a rich source of iron. Iron absorption becomes efficient in an acidic medium which is also ensured by *thakra* in the selected drug. When nutrients

are supplemented the conversion of nutrients into *poshakadhatu* then into *sthayidhatu* takes place faster rate in better *rakthasaara* individual due to their better *rakthadhatwagni* condition. Eventhough *charaka acharya* explain that *pandu rogi* will be *nisaara*, but it is seen in this study that in *pandu* patients there will be little *saara* and it has a influence in treatment response. That is Individual with better *rakthasaara* score, get quick response to the treatment of iron deficiency anemia.

CONCLUSION

At the end of the study it is seen that the treatment response of iron deficiency anaemia depends on *saara* score of individual. So eventhough *charaka acharya* explain *pandu rogi* will be *nisaara*, there will be little *saara* in *pandu rogi* and it has a influence in treatment response.

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