

A STUDY OF CHANGES IN RBC INDICES AFTER RAKTAMOKSHANA WITH SPECIAL REFERENCE TO SIRAVEDHA

Research Article

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Abstract

A study was undertaken to evaluate the effect of *Raktamokshana i.e. Siravedha* on the RBC indices. In this study after *samyak snehan* and *swedana* 300 ml blood was letted out and RBC Indices Assessed on Day 1st, 7th, 14th 21st & 30th. It was found that there is no effect on *sirawedha* on RBC indices i.e. RBC Count MCV, MCH, MCHC & Hb% in All follow ups. it means Physiological parameters mentioned above are remains at normal level. *Sirawedha* doesn't harms or dosent produce any adverse effects over Body. blood constitution up to RBC Indices level is not afffected by *siravedhan* type of *raktamokshana*.

Key words: *Raktamokshana., Snehana, Swedana, Siravedha, RBC indices.*

Introduction

For the healthy life the body constituents should be maintained in homeostatic condition and this is gained by dhatus of the body According to the ancient *Acharya*, 7 *Dhatu's* are explained in their reputed documentations i.e. Rasa- Rakta- Mansa- Meda- Asthi, Majja & Shukra. Amongst the 7 *Dhatu's*, Rakta is given the supreme position by *Acharya Susruta* as the nutrition of all the other *Dhatu's* depends on *Rakta Dhatu's* thus maintaining homeostasis.(1) The Main function of *Rakta Dhatu* is provided life i.e. *Jivan* to living beings.(2) Any fluctuations i.e. reduction or increase in its quantity may lead to various pathology When the level of *Rakta Dhatu* increase in the body, the colour of the whole body and eyes looks red. Also there is fullness in *sira* (Blood vessels) (3) which can be co-

related to the increased pressure in circulation leading to HTN and Haemorrhagic stroke. Lowering of *Rakta Dhatu* leads to *Twak Parushya* i.e. the dry skin cracked, lusterless and rough, *Amlasheeta Prarthana*, *Sira Shaithilya*(4) meaning loss of normal tone of *Sira* leading to varicosity and this symptom also found in dehydration and haemodilution. This can be co-related to Anaemia, dyspnoea, fatigue, *Agnimandya* and loss of natural complexion and luster. Vitiated *Rakta Dhatu* leads to number of skin diseases like *Kushtha*, *Visarpa*, Spleenomegaly, Haemorrhoids, ulcers etc.(5) Hence to relieve the patients from these pathologies *Rakta mokshana* is advocated as the supreme mode of treatment in our classics.(6) *Sira vedha* (Venesection) is considered in some instances as half of the treatment of *Salyatantra* itself, like enema is considered in *kayachaikitsa*(7). Though it was much popular in olden times its popularity declined over the ages. However, it gives promising results in venous congestion of the lower limb and is

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expected to be of much value in autoimmune diseases where the disease is always ahead of its management. Study was undertaken to evaluate internal environmental changes and changes in RBC indices on the basis of Haemato physiological parameters to ascertain the probable (non-pharmacological) action in correction of disease pathology induced by body itself. On completion this study shows no changes in all parameters i.e. RBC Indices, Hb % & sodium potassium in all follow-ups.

Materials and Methods

This research includes 60 healthy individuals. 60 healthy individuals, having Hb more than 11gm %, were selected from Government Ayurved College-Hospital, Umred road Nagpur & its periphery for this study.

Criteria of Selection

- Individuals of 18 to 50 yrs of age were selected for study.
- Male & Female individuals were considered irrespective of the religion, caste & region.
- Healthy individuals having Hb% more than 11gm% were considered for the study.
- Fully co-operative individuals were selected.

Criteria of Exclusion

- Individuals below the age of 18 years and above 50 years were not considered for research work.
- Individuals having any major illness and blood disorders were excluded for research work.
- Individuals on Anticoagulant drugs were not considered.
- Immunocompromised (eg. HIV individuals) were excluded from the Research study

Methodology

- The research work was carried out in "Sharad Ritu" (Oct-Nov 2010) (8 Su.u. 64/16)
- After *Samyak Snehan & Swedan Karma* individual were taken for *Siravedha Karma*. (9)
- Tourniquet was used for pressure.
- 18 No. Scalp Vein set was used for puncturing the vein.
- Sterile blood preserving bags were used for collecting blood.
- Sterilized cotton pad and bandage were applied for pressure bandaging after *siravedh* procedure.
- Necessary investigations like CBC were performed in the laboratory of Govt. Ayu. College & Hospital.
- *Siravedh* was done under all aseptic precautions.
- Consent was taken to evaluate blood investigation and *Raktamokshan* procedure from individuals.
- Proforma of individuals were filled.
- Selection of individuals, for study was done after all Routine Investigation.

Snehan:

Cow's ghee was used as *snehan* orally in the increasing order of dose for five days initially starting with 30 ml, 50ml, 80ml, 110ml and on 5th day 150ml. *til taila* oil massaging (*Abhayanga*) was done of every individuals for five days.

Swedana:

Nadi sweda (it is a plain steam bath) was given to every individual for 5 days. Also the individuals were advised to take *singdha drava Aahar* at previous night as well as on the same morning before *Siravedha* procedure (10)

Procedure of Sirvedha

Individual was asked to sit down on the backrest chair in comfortable

position (11) Cubital vein was selected for the siravedh. Tourniquet was applied 6 cm away from site of *Siravedha* towards heart.

Under all aseptic precautions vein was punctured by 16 no. needle and allowed for bloodletting 300 ml (approx. ½ prastha) (12) 10 in sterile blood preserving bags & then collected blood was send to Blood Bank. (As the ayurved texts are suggests *siravedha* procedure is always do with *purvakarma*(*preoperative procedure*) i.e. *snehana* and *swedana* so after *purvakarma* we punctured the vein and let blood to flow till it stops or patient get discomfort . To avoid blood wastage and patients discomfort we fixed the canula to the vein and collected the blood in to bags. (Blood donation doesn't needs any *purvakarma* Procedure as like *siravedha* so procedure adopted by us is not a blood donation). Tourniquet was removed. Needle was removed & tight pressure bandage was applied.

Individual was advice to take *Snigdha*, *Drava aahar* orally after *siravedha* procedure. 13 Blood sample were collected one day before *siravedha* and again on 1st, 7th, 14th 21st & 30th day after *siravedha* procedure and were studied for RBC indices, Na and K and Sr.

Assessment criteria:

Hematological criteria

No	Follow-up on Day 1 st , 7 th , 14 th , 21 st & 30 th	Normal value
1	Hb%	12-17gm%
2	RBC count	3-4.8/Cumm
3	MCV	83-99 Fl
4	MCH	25-35/Pg
5	MCHC	31.5-36gm/dl
6	Na	130-145mEq/L
7	K	3.5-5.0 mEq/L

Observations & results:

Demographic Data

- Sex: The sex wise distribution shows that male individuals were more in number i.e. 39 (65%). Because Hb % is adequate in males as compared to females. Female are anaemic and underweight for B.T.
- Age: The age wise distribution shows that the individuals from age group 20-24 were more in number i.e. 22 (36.7%). Because we have selected maximum no. of students.
- Religion: As regarding to the religion the Hindu individuals were more i.e. 52 (86.7%). Because hospital is situated in Hindu predominant area.
- Occupation: Regarding occupation student were more in number i.e. 42 (70%). because we were have selected healthy individuals and students were readily available for blood letting blood letting.
- *Agni*: Majority of the individuals i.e. 16 (26.66%) having samagni. May be due to the selected individuals were healthy individuals.
- *Koshtha*: Most of the individuals have *mrudukoshtha* i.e.23 (38.33%)
- *Ahara*: The mixed dietetic individuals were more in number i.e. 33(55%)
- *Prakriti*: Maximum individuals had the *Pitta kaphaprakriti* i.e.19 (31.66%).
- Socioeconomic status: All the individuals are from middle class society.
- H/o blood donation: Maximum no. of individuals had history of blood donation i.e.31 (51.7%)

Parametric Data:

<i>Parameters Stat.values</i>	<i>f/u</i>	<i>Hb%:</i>	<i>RBC</i>	<i>MCV</i>	<i>MCH</i>	<i>MCHC</i>	<i>Na</i>	<i>K</i>
<i>Mean±SD</i>	<i>BBD Day 0</i>	14.47 ±1.62	4.83 ±0.49	93.28 ±9.12	30.27 ±3.26	31.81 ±1.72	139.23 ±4.28	4.12 ±0.32
<i>Mean ±SD</i>	<i>ABD 1 Day</i>	14.38 ±1.63	4.86 ±0.48	93.22 ±9.37	30.23 ±3.32	31.78 ±1.82	139.23 ±2.52	4.13 ±0.31
<i>Mean ±SD</i>	<i>ABD 7 Day</i>	14.35 ±1.60	4.89 ±0.44	93.60 ±8.21	30.20 ±3.32	31.75 ±1.26	139.26 ±2.37	4.13 ±0.36
<i>Mean ±SD</i>	<i>ABD 14 Day</i>	14.45 ±1.62	4.83 ±0.43	93.24 ±8.84	30.28 ±2.61	31.81 ±1.44	139.23 ±2.06	4.13 ±0.39
<i>Mean ±SD</i>	<i>ABD 21 Day</i>	14.47 ±1.61	4.84 ±0.49	93.28 ±8.86	30.27 ±1.98	31.82 ±1.54	139.24 ±2.29	4.14 ±0.40
<i>Mean ±SD</i>	<i>ABD 30 Day</i>	14.48 ±1.82	4.84 ±0.49	93.26 ±8.21	30.28 ±1.83	31.82 ±1.50	139.25 ±2.20	4.12 ±0.37
<i>t-value</i>		0.1864	0.7642	0.0183 7	0.0274	0.03935	0.0038	0.038 6
<i>p-value</i>		0.9676	0.5762	0.9990	0.9996	0.9997	1.000	0.999 2
<i>Result</i>		Not Signific ant	Not Signific ant	Not Signific ant	Not Signific ant	Not Significa nt	Not Signifi cant	Not Signifi cant

Discussion

The research was undertaken to evaluate internal environment and RBC indices changes on the basis of Haemato-physiological parameters to ascertain the probable non pharmacological action in correction of underlying pathology of disease when assessed biochemically and statistically, it shows insignificant result. It means after *siravedha* no changes on hematological parameters and ultimately it doesn't cause any ill effects on body.

Effect of *Siravedha* with reference to parameters:

The changes observed during the clinical study were noted after every follow-ups and represents by statistic method.

For multiple comparisons one way Anova test was applied & results were as follows.

Effect on Hb%:

No significant changes were noted in Hb% in all follow ups.

Effects on R.B.C.:

No changes were noted in all follow-ups in RBC count.

Effects on MCV:

No significant changes were noted in all follow-ups in MCV values.

Effects on MCH:

No changes were noted in all follow-ups in MCH value.

Effects on MCHC:

No significant changes were noted in MCHC value in all follow ups.

Effects on Na:

No significant changes were noted in Na in all follow-ups.

Effects on K:

No significant changes were noted in K value.

Conclusion

As *Siravedha* is a known principal treatment for various blood vitiated diseases but there is misconception that *siravedha* influences blood constituents like RBC Indices, Hb%, & Electrolytes etc. but this study overcome this misconceptions by evidencing the insignificant results on hematological parameters And not found any Adverse effect in studied individuals hence this therapy can be perform safely

Reason behind selecting healthy individuals is values of RBC indices were altered as per disease progression so to reduce the bias we select healthy individuals

Procedure adopted was not a blood donation because we let out blood after *purvakarmas* like *snehan* and *swedana* in blood donation there is no such *purvakarma*.

New thing from this study is *siravedhdan karma* does not significantly affects the RBC Indices in healthy individuals. So this can perform safely in short we can say that blood constitution up to RBC Indices level is not affected by *siravedhan* type of *raktamokshana*. Other blood constituents may be affected or not it is a topic for further research.

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