



Case Study

EFFECT OF VIRECHANA ON CRP IN A PATIENT OF METABOLIC SYNDROME

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ABSTRACT

Metabolic Syndrome is a result of metabolic impairment involving multiple systemic manifestations. Over nourishment, deposition of visceral fat, physical inactivity, sedentary lifestyle, genetic predisposition, familial tendency, mismanagement of physical or mental stress, irregular sleep- wake cycle, etc. These metabolic errors are actually resulted by indulging in the etiological factors that cause *Medodushti* in turn leading to *Medoroga*. Such etiological factors are called as *Santarpana karaka Nidanas* which include the food articles that are rich in *Snigdhamsha*, *Madhura rasa*, *Guru* and *Pichchila gunas* and also the activities that favour excessive nourishment and deposition of *Meda Dhatu*. This abnormally nourished *Medo dhatu* will contain *Ama* which further damages to manifest into metabolic syndrome. *Virechana* is a type of *Shodhana Karma* – Biopurification process that is potent enough to cleanse the channels and bring vitality to the *Dhatus* in the body. It is said to be improving bioavailability of medicines by cleansing at intestinal level and also by enhancing the demand and supply mechanism at tissue level. By removing the debris and unwanted accumulations in the channels, *Virechana* acts as *Sroto vishodhaka* and *Medo hara* also. By removing excess *Kledamsha* from the body, it reduces oedema, inflammation and also improves tissue permeability. **Aim:** To assess the effect of *Virechana* in metabolic syndrome, dyslipidaemia. **Methodology:** Administration of *Amapachana* followed by *Virechana karma*. **Result:** There was marked improvement in signs, symptoms and biochemical parameters after intervention. **Conclusion:** *Virechana* is significantly effective on altered levels of lipids, elevated blood sugar level and also raised ESR.

INTRODUCTION

Excessive fat deposition especially around the abdomen covering the outer area of the visceral organs which is also known as the visceral adiposity is the prime causative factor that leads to metabolic disorganization and even cardiovascular diseases¹. The Metabolic syndrome is a cluster of several clinical conditions including hyperglycemia, hypertension, dyslipidemia and excessively accumulated abdominal fat. Erratic food habits, wrong and faulty dietary habits physically inactive and sedentary lifestyle, mismanagement of physical and mental stress, inappropriate sleeping habits etc. gradually establish

deranged metabolic process and later leading to manifestation of chronic inflammation in the visceral area.

Metabolic Syndrome and Medoroga

Lifestyle is a major contributing factor to cause metabolic impairments and related disorders. The conditions that manifest as a result of indulging in *Avyayamaa*- less/no physical exercises, *Atisampoorana*- excessive/wrong eating habits, *Acheshta*- sedentary/inactive lifestyle, *Atimadhura Guru Snigdha Pichchila Ahara*- eating carbohydrate rich, fatty heavy food stuffs, *Divaswapna*- sleeping at day ours and *Sanshodhana heenata*- not undergoing timely cleansing of body through *Shodhana* procedures, etc. These conditions can collectively be considered under the heading of *Santarpana Janya vikaras*- Disorders caused due to abnormal metabolism like that of *Sthoulya*- obesity, *Medoroga*- disorders of faulty fat metabolism, *Prameha*- disorders connected to fat, glucose, protein and urine and various other metabolic

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factors have to be considered while studying Metabolic Syndrome. These *Santarpanottha vikaras* in the later course can lead to serious complications like *Hridroga*, *Rajayakshma*, *Grahani dosha*, *Atisthoulya* and so on. Hence the need arises to address the disease in the early stages to prevent the due course emergencies.^[2]

Case Report

A male patient aged about 52 years, approached with a raised level of blood glucose, gradual excessive weight gain, fatigue, abdominal discomfort, reduced/affected interest in routine activities, body feeling heavy due to which eventually reduced physical activity since more than 8 years. He has habit of repeated eating and from the age of 35 years he has started gaining weight. He is non-alcoholic, not a smoker, or he is not habituated to any kind of substance abuse.

Past history: the patient gives history of repeated gastric upsets like hyperacidity, increased frequency of defecation, dull aching pain in the abdomen and occasional headache since the age of around 20 years when he was in hostel for studying.

Personal history: He is a manager in MNC basically being a software engineer. He has severe work pressure and targets to complete projects on time. He does some social work adopting a village and a government school in the out skirts of Bengaluru. This keeps him running on toe even during weekends but he says this gives a better feeling in the person. The person is fond of taking variety of food and takes food frequently in hotels and streets also.

Marital history: He is married and staying with family with 2 kids. The elder son is working for MNC and the family is well to do financially. Wife is not having any specific health issues.

Diet history: He is having habit of repeated food consumption and frequently visits restaurants and street food also. Eats junk food and continental food whenever he travels abroad.

Lifestyle and exercise: Work related travel to USA and occasionally to Europe are frequent to him due to

Intervention

The patient was administered with Virechana Karma as mentioned in the table below-

S.No	Day	Treatment	Dose
1	Minimum of 13 days - maximum of 25 days	<i>Amapachana</i> by <i>Chitrakadi Vati</i> till appearance of <i>Nirama Lakshanas</i> ^[4]	1 tab (500mg) 3 times daily
2		<i>Snehapana</i> with <i>Guggulu Tiktaka Ghrita</i> ^[5]	From <i>Hrisiyasi matra</i> till <i>Samyak snigdhatā</i> appears ^[6]
3		<i>Abhyanga</i> by <i>Brihat Saindhavadya Taila</i> followed by <i>Bashpa Sweda</i>	35 mins + 15-20 minutes
4		<i>Virechana</i> with <i>Trivrit Lehya yoga</i> ^[5]	According to <i>Koshta, Bala</i> ^[5]
5		<i>Peyadi Samsarjana karma</i> ^[7]	Depending on the <i>Shuddhi</i>

which the life style, food habit and sleep wake cycle are disturbed and he often finds stomach upsets, hyperacidity or irregular bowel habits. Due to shift work and frequent travels, his lifestyle was erratic and never engaged in regular physical exercises. He used to wake up till late nights or sometimes awakened whole night and compensated his sleep during day. He has the tendency of having high carb diet like sweets made of sugar (Barfis, cakes, pastries and ice-cream, etc. His frequent out station visits and travels abroad, his food pattern was almost dependent on hotels and takes beverages like coffee, about 3-4 times a day.

Family history: Mother and his elder brother are obese and diabetic.

General examination: The person is found with -

1. Central obesity with waist circumference 121cm
2. Dyspnoea on exertion,
3. Excessive sweating with intense body odour,
4. Easy fatigability
5. Body over weight with 93kg
6. Tongue-coated
7. P/A- NAD, CNS- NAD, Respiratory system- NAD
8. Pulse- regular, 83 beats/minute
9. Heart sounds- Normal

AIMS AND OBJECTIVES

- To evaluate the effect of *Virechana karma* on patient of Metabolic syndrome – *Medo roga*
- To evaluate the effect of *Virechana Karma* on raised CRP – Condition of *Medo dushti* in patient of Metabolic Syndrome

Diagnostic Criteria

Patients with Central obesity (≥ 85 cm in F and ≥ 90 cm in M) and any 2 of other cardinal features of metabolic syndrome namely^[3]

1. Hypertriglyceridemia (≥ 150 mg/dl)
2. Low levels of HDL (< 40 mg/dl in men or < 50 mg/dl in women)
3. Hyperglycemia (≥ 100 mg/dl)
4. Hypertension ($\geq 130/85$ mm Hg)

Assessment Criteria

All the data are collected and documented on a detailed case proforma. Assessments of the conditions are done adapting standard methods of scoring; and subjective as well as objective parameters are analyzed.

Objective Parameters

1. Waist circumference
2. Fasting blood sugar levels
3. Triglyceride levels
4. HDL levels
5. Blood pressure
6. Blood C –Reactive protein levels
7. Body weight
8. BMI
9. Skin fold Thickness
10. TMT
11. Urine analysis

OBSERVATIONS

Vital parameters were observed daily during and after the course of *Virechana Karma*, till the completion of *Sansarjana Krama*. The patient was given *Amapachana* with *Chitrakadi Vati* 2 tablets twice daily for 4 days, followed by *Guggulu Tikta Ghrita Snehapana* for 5 days in *Arohana Krama*. *Samyak Snigdha Lakshanas* appeared on 5th day with features like *Asamhata Varchas, Sneha yukta Mala darshana, Sneha dwesha, Twak Mardavata*. Then he was advised for *Sarvanga Abhyanga* using *Brihat Sindhavadya Taila* followed by *Bashpa Sweda* during *Vishrama Kala* for 3 days.

The patient was advised the diet that is *Pitta Avirodhi* in nature like pongal, rice dal (mad of *Mudga*), Akki rotti (made of plain rice floor) Ragi Ganji and Rice porridge.

S.No	Amapachana	Snehapana	Vishrama Kala	Virechana karma	Sansarjana Krama
1	4 days	5 days	3 days	1 day	5 days
2	<i>Koshta laghuta, Kshudha</i> appeared, <i>Jihva lepa</i> reduced.	<i>Arohana krama</i> started with 30ml and ended with 170ml. <i>Samyak Snigdha Lakshanas</i> appeared on 5 th day.	<i>Sarvanga Abhyanga & Bashpa Sweda</i> done	<i>Trivrit Lehya</i> 55g with <i>Ushna Jala Anupana</i> given. Total of 14 Vegas were observed	From the day of <i>Virechana</i> as day-1, total of 5 days <i>Sansarjana krama</i> was done.

The patient enthusiastic and felt lightness in the body in place of lethargy and heaviness present earlier to treatment. He became active and food consumption pattern as well as quantity was improved. He started morning walk routine during the *Amapachana Kala* beginning with 10 minutes which was gradually increased up to 30 minutes per day which was continued even during the entire course of *Virechana*. He expressed about enhanced energy and boosted confidence immediately after the course. His water consumption quantity was increased to about 2.5 liters per day.

The table below displays the difference in the parameters of the patient before and after treatment

S.No	Particulars	Before treatment	After treatment
1.	Waist circumference	121 cm	115 cm
2.	Fasting blood sugar levels	146 mg/dl	98 mg/dl
3.	Triglyceride levels	243 mg/dl	162 mg/dl
4.	HDL levels	35 mg/dl	46 mg/dl
5.	Blood pressure	124/80 mm of Hg	120/76 mm of Hg
6.	Blood C –Reactive protein levels	10.6 mg/dl	2 mg/dl
7.	Body weight	93 kg	89.1 kg
8.	BMI	37	35.2
9.	Skin fold Thickness	36 mm	32 mm
10.	TMT	Normal	Normal
11.	Urine analysis	Microalbumin +	NS

Follow up: The patient persistently followed the diet and exercise patterns advised to him during the follow up period. There is further reduction in weight and improvement is maintained consistently during the period of these 30 days.

Virechana on Prameha and Staulya

The therapy can increase the Insulin sensitivity in the receptors in skeletal muscles as it has shown the decrease of fatty acid in the storage like liver, kidney, heart, and adipose tissue thus works on decreasing the insulin resistance.^[8]

- *Sramsana* and *Rechana* work on *Bahu abaddha meda*, *Bahu drava shleshma* respectively.
- *Virechana* is highly effective on the site of *Pitta – Agnisthaana*^[9]

By acting primarily on liver and pancreas it may help to reduce hepatic glucose production and overcome the impaired insulin secretion. *Virechana* is effective in the management of the metabolic syndrome with decrease in the fecal fat content, fasting blood glucose, serum triglyceride, and reduced fatty changes in liver, heart, and kidney.^[10]

Virechana works on *Pitta* and *Kapha* morbidity and also on *Ama meda* which removes the *Avarana* to *Vata*. Along with *Kapha* it also eliminates *Kapha dharmiya Dravya* accumulated in the body thus clearing the *Srotas*. The phenomenon of *Virechana* causes irritation to the liver and pancreas, which induces raised secretion of intestinal secretin and also Cholecystokinin (CCK) which reduces postprandial hyperglycemia without altering post prandial insulinemia in type 2 DM.^[11]

Virechana manipulates the gut hormones like peptide YY (PYY), pancreatic polypeptide (PP), glucagon-like peptide 1 (GLP-1), oxyntomodulin (OXM), ghrelin, amylin and cholecystokinin (CCK)³⁷ by stimulating the pancreas and liver lead to contraction of Gall bladder. As these hormones are key mediators which send signals for the food intake to the brain, raised levels of them modulate the activity of gut-brain axis and modify the appetite, hunger and energy balance in the person, thus contribute to manage obesity.^[12]

- ❖ *Virechana* induces minor inflammation in the GIT and increases the permeability which in turn drains many components that is not possible in normal condition.
- ❖ Absorption in the GIT occurs by 2 pathways namely paracellular and Trans- cellular. In the trans cellular mechanism, Na⁺ pump present in the basolateral membrane actively transports Na⁺ out of the mucosal cells into the intracellular space. The process is reversed during secretion facilitating large amount of fluid drained towards the intestines. Thus *Virechana* drains out excess *Kledamsha* from the body reducing *Bahudrava Shleshmata*^[13].

***Virechana* on Low Grade Inflammation in the Dhatus**

The link between the gastrointestinal endocrine axis and the immune system is established through the interaction of pro-inflammatory cytokines, including C - reactive protein and TNF- α and the gut hormones^[14]. The immune-modulatory role of these gut hormones are capable of modulating the altered cytokine network and autoimmune inflammatory

reactions. Thus *Virechana* prevent stimulation of inflammatory mediators by acting on gut hormones.^[15]

CONCLUSION

- *Virechana* is an effective therapeutic procedure to treat *Pitta dosha* as major target and also quite effective in disorders of *Kapha* and *Vata* association, *Vata avarana* by *Kapha pitta*, *Rakta* and *Meda dhatu*.
- *Virechana* plays a major role in management of *Medoroga* in terms of metabolic syndrome –
 - By evacuating excessively deposited and circulating Lipids and draining excess fluid from body.
 - By acting on liver and pancreas as well as insulin resistance and hyperglycemia.
 - Reduces inflammation and thus effectively works on reducing the inflammatory markers like CRP.

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