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Role of Vamana (Therapeutic Emesis) and Virechana (Therapeutic Purgation) on BSL (Blood Sugar Level) in Diabetes Mellitus W.S.R. to Madhumeha: A Case Study

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Case report

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Abstract

Diabetes mellitus (DM) is a clinical syndrome characterized by hyperglycemia due to absolute or relative deficiency of insulin. Long standing metabolic derangement can lead to the development of complications of diabetes, which characteristically affect the eye, kidney and nervous system. DM occurs worldwide and is a major burden upon health care facilities in all countries. The characteristic features of DM have close resemblance with Prameha (disorder with excessive urination and turbidity) in Ayurveda. Madhumeha is a type of Vataja Prameha and is most close to DM. One variety of this Madhumeha (DM) is Aavaranjanya (due to occlusion) in which Vayu aggravates due to occlusion by Pitta or Kapha. This type of Madhumeha (DM) can be managed by Samshodhana (bio-purification) Chikitsa. Panchakarma is becoming popular in the prevention and management of lifestyle disorders. Vamana (emetic therapy) and Virechana (purgation therapy) are the two Panchakarma procedures of Samshodhana Chikitsa that are compatible to overcome this Aavarana (occlusion). A study was planned to assess their combined efficacy in controlling blood sugar level in the patient with DM by adopting classical methods of Vamana and Virechana. Although this is a single case study, but the study yields some very interesting results in reducing the blood sugar levels.

Keywords: Diabetes Mellitus; Madhumeha; Vamana; Virechana

Introduction

Diabetes mellitus (DM) is a progressive life style disorder with the prevalence rates rising steeply in developing economies. DM has become a global burden with its devastating consequences. In India, the epidemic of diabetes continues to increase and is experiencing a shift in diabetes prevalence from urban to rural areas and from older to younger people. The lifelong expenditure associated with diabetes and its complications, individuals, families and the society are unable to cope with the economic, emotional and social disease burden due to diabetes [1]. For the awareness of DM, **World Diabetes Day** (WDD) was created in 1991 by IDF (International Diabetes Federation) and the World Health Organization in response to growing concerns about the escalating health threat posed by diabetes. WDD is the world's largest diabetes awareness campaign reaching a global audience of over 1 billion people in more than 160 countries. World Diabetes Day became an official United Nations Day in 2006 with the passage of United Nation Resolution 61/225. It is marked every year on 14 November, the birthday of Sir Frederick Banting, who co-discovered insulin along with Charles Best in 1922. India is one of the 6 countries of the IDF SEA region. 425 million people have diabetes in the world and 82 million people in the SEA Region; by 2045 this will rise to 151 million. There were over 72.946.400 cases of diabetes in India in 2017 [2].

As per the WHO, "Diabetes mellitus is a heterogeneous metabolic disorder characterized by common features of chronic hyperglycemia with disturbance of carbohydrate, fat and protein metabolism due to absolute or relative deficiency in insulin secretion and/or action or both" [3]. The characteristic features of DM resembles with different Prameha in Ayurveda [4]. Madhumeha (DM), a Vataja subtype of Prameha, is similar to DM. One variety of this is Madhumeha, characterized by passing of urine resembling honey. Madhumeha is of two types: they are caused by aggravation of vata due to tissue depletion or because of the Avarana (blockage) of Dosha [5]. When the normal passage of Vata is disrupted it vitiates the food nutrients without any other cause thus leading to the aggravation or depletion of the Dosha. This facilitates the manifestation of Madhumeha that is difficult to cure. Basic pathological factor for this Aavarana is Bahudravakapha (excess Kapha in liquid form) along with Bahu-abaddhameda (excess and loosely bound fat) [6]. By excess intake of heavy, unctuous, sour and saline tasting food, freshly harvested rice and freshly prepared wine, excess sleep, sedentary lifestyle, lack of physical and mental activities, Asamsodhana (who do not undergo Samshodhana therapy at proper time), Kapha, Pitta, Medas and Mamsa gets aggravated excessively. The normal passage of Vata gets obstructed, that combines with Ojas and reaches the bladder causing the disease called as Madhumeha [7]. This type of Madhumeha ((DM) can be treated if Samshodhana is used in early stages of disease followed by palliative treatment [8]. Vamana and Virechana are the two Panchakarma procedures of Samsodhana Karma that is compatible to overcome this Aavarana and suitable in Diabetic patient who is very strong [9] (AH.Ci.12/1-3). The study was planned to assess the combined efficacy of Vamana and Virechana in controlling blood sugar levels in the patient with DM.

Aims and Objectives

1. To assess the blood sugar level before and after Vamana.
2. To assess the blood sugar level before and after Virechana.
3. To assess the combined efficacy of Vamana and Virechana in controlling the raised blood sugar level.

Materials and Methods

A 34 year old female having 78kg body weight, housewife, residing in an urban area, suffering from Type-2 DM (since 7 years) attended the OPD of Department of Panchakarma, National Institute of Ayurveda, Jaipur during "Vasantika camp" organized every year in Vasant Ritu by the department. Patient came to know about the Vasantika camp and was willing for Samshodhana (purification therapy). The patient was having fasting blood sugar level in the range of 126-250 mg/dl and postprandial blood sugar level in the range of 200-350 mg/dl. The patient was taking Glycomet GP (metformin 500mg, glimipride 0.5mg) once a day since last seven years. Blood sugar level was not controlled.

The patient was not having any of the long-term complication of DM. The patient was strong enough to undergo Vamana and Virechana. The patient was overweight according to age. The patient had never taken insulin to control her blood sugar. There was no family history of DM.

Plan of Study

The patient was assessed for purification therapy and informed consent was taken in advance. The patient was explained about the Vamana and Virechana therapy. Any ongoing treatment for DM was withheld before a week of Samshodhana and then subjected to blood examination.

The blood sugar level was considered as basal level. There after the following management plan was implemented.

Procedure	Drug and Dose	Duration
Deepana and Pachana (appetizers and digestives)	Panchakola Churna 5g twice a day with warm water	3 days
Snehapana (internal oleation)	Go-Ghrita (cow ghee) as per the assessment of the patient. (in this case 30ml, 60ml, 75ml, 90ml, 110ml, 130ml, 150ml)	7 days
Abhyanga (massage) and Swedana (fomentation)	Dashmoola Tail (prepared in the pharmacy of NIA, Jaipur) after Samyaka Snehapana	1 day
Vamana Karma	Madanphalla pippali Churna 3g, Vacha Churna 1g, Saindhava Lavana 500mg, honey in required quantity with Madhuyashthi Phanta 3-4 litres. Lavanodaka (salted water) and plain water as per expelled Dosha.	1 day
Samsarjana Krama	Specific diet as per Shudhi	7 days
Rest day	-	1 day
Deepana and Pachana (appetizers and digestives)	Panchakola Churna 5g twice a day with warm water	3 days
Snehapana (internal oleation)	Go-Ghrita (cow ghee) as per the assessment of the patient. (in this case 50ml, 100ml, 150ml)	3 days
Abhyanga (massage) and Swedana (fomentation)	Dashmoola Tail (prepared in the pharmacy of NIA, Jaipur) after Samyaka Snehapana	3 days
Virechana Karma	Trivrita Churna 5g, Danti Churna 1g mixed in Triphala Kwath 100ml. Warm water in regular interval to induce purgation.	1 day
Samsarjana Krama	Specific diet as per Shudhi	7 days

Table 1: Plan of Study.

Treatment Schedule

The treatment schedule planned consists of standard protocol of Vamana and Virechana. Each shodhana procedure includes unique Purvakarma, Pradhanakarma and Pashchatkarma and requires certain days for completion. Sequence of procedure adopted was: Deepana-paachana (digestive and appetizer medication), Abhyantara Snehapana (internal oleation), Sarvaanga Abhayanga-Swedana (whole body massage and fomentation), Vamana and Virechana, and Samsarjanakrama. Panchakola Churna in a dose of 3-6 g/day in two divided doses was used for 3-5 days for the purpose of Deepana-paachana. After proper Deepana-paachana, Aabhyantara Snehapana was started with Go-Ghrita (cow ghee) in increasing dose as per the Koshtha (Bowel) and Agni (digestive power) of the subject for the period of 3-7 days [9]. When the signs of proper Snehana (oleation) were achieved, Sarvaanga Abhayanga (whole body massage) with Dashmoola Taila was done followed by Sarvanga (whole body) Swedana (fomentation). Fomentation was given only in mild form [10]. The patient was asked to take specific food that provokes Kapha dosha in the evening prior to Vamana. This is essential for the easy expulsion of Kapha Dosha during the Vamana Karma. After the 3rd day of Sarvanga Snehana and Swedana, Vamana was given by Madanphala (Emetic nut, Randia Dumetorum), Vacha Churna and Saindhava lavana mixed with honey as per the assessment of the patient. Dhoompana was given after the Vamana. Samsarjana Krama (special diet advised after purification to maintain and increase digestive power) was advised after Vamana for 7 days. Blood sugar level was checked before and after the procedures. After the completion of Samsarjana Krama, 1 day rest was given (gap day). Vamana Karma was then followed by Virechana Karma. Abhayantara Snehapana with Go-Ghrita was started for three days in increasing doses was given for second time followed by Kapha reducing diet. Warm liquid food that does not aggravate Kapha Dosha was preffered before Virechana karma during Sarvanga Abhyanga and Sarvanga Swedana for three days. Virechana (purgation therapy) was given on the last day of Sarvanga Abhayanga and Sarvanga Swedana with Trivrita Churna, Danti Churna mixed in 100ml of Triphala Kwath as per the assessment of the patient. After the Samsodhana karma, Samsarjana krama was followed for 3-7 days as per Shuddhi (outcome of bio-cleansing) achieved [11]. After completion of Samsarjana krama blood sugar level was checked. Patient was instructed not to take any anti-diabetic medication for the next 15 days but to follow the advised anti-diabetic

diet and daily regimen. The patient was advised to report at the earliest in case of any kind of medical problem during this period. On the completion of this follow up period all the patient was again investigated for blood sugar level.

Drugs used in the Trial

Panchakola Churna (Sharangadhra Samhita, Madhyama Khanda 6/13-14): This was prepared by mixing equal amount of Pippali (Piper longum), Pipplimula (root of Piper Longum), Chavya (Piper Retrofractum), Chitraka (Plumbago Zeylanica) and Shunthi (Zingiber officinale) powder. This was used for Deepana-paachana needed prior to Snehapana. It improves digestion, relieves bloating, ascites, indigestion, anorexia etc.

Go-Ghrita (Cow Ghee): Plain Go-Ghrita was given to the patient for Snehpana before Vamana and Virechana. Same methodology as mentioned by Sharangdhara for Ghrita Paka (processing of ghee) was adopted to prepare Ghrita [12].

Madanphala Pipalli *(Randia Dumetorum)* Churna: It induces vomiting and considered to be the best drug for Vamana karma. The powder of Madanphala Pippalli along with honey and Saindhava Lavana (rock salt) was used as Vamana drug. Honey and Saindhava were used for the purpose of liquefaction and Chedana (alleviation) of Kapha (mucus) [13].

Vacha *(Sweet Flag, Acorus Calamus)* Churna: Powder of dried rhizome was used to induce vomiting along with other drugs. Its active constituents enter into the various channels in the body, stimulate the metabolic power and induce elimination of the toxins from the body.

Madhuyasthi *(Glycirhizia Glabra)* Phanta: Phanta (cold infusion) of Madhuyasti (*Glycirhyza glabra*) was used as Vanmanopaga (medicine to induce vomiting).

Trivrita *(Operculina Turpethum)* Churna: Trivrta Churna has cleaning and purgative properties. It helps in easy passage of stool and increases bowel movements. It is also used in constipation. Dried powder was used for Virechana Karma in the present study.

Danti *(Baliospermum Montanum)* Churna: Danti Churna acts as purgative, induces diarrhea. It is used in liver disorders, digestive disorders, hemorrhoids and many other diseases.

Triphala Kwath (Hot Decoction): This was prepared by boiling equal quantity of Haritaki (*Terminalia Chebula*), Vibhitaka (*Terminalia Bellirica*) and Amalaki (*Emblica Officinalis*) in 16 parts of water and reducing it to 1/4th part, filtered and used. It eases bowels and shrinks the pile mass size.

Criterion for Assessment

The overall assessment of therapy was done by comparing the change in fasting and postprandial blood sugar levels before treatment and after the procedures. Blood sugar level was also checked on follow-up of 15 days after the completion of Samsarjana Krama after Virechana karma. The results were compared to assess the actual efficacy of procedures. To calculate the change in blood sugar, the normal range of fasting blood sugar (FBS) (≤125 mg/dl) and postprandial blood sugar (PPBS) (≤200 mg/dl) were considered as base line.

Observation and Results

The outcome of Samshodhana therapy was as described below:

Analysis of Blood Sugar Level before and after Vamana

Before treatment the FBS was 249 mg/dl while PPBS was 338 mg/dl. After Deepana pachana and Snehapana FBS reduces to 192mg/dl before starting of Vamana procedure. On the day after the completion of Vamana karma, it further reduces to 182mg/dl. Blood sugar level after the completion of Samsarjana Krama of seven days (after Vamana karma) FBS comes to 170 mg/dl and PPBS was found to be 239mg/dl.

Analysis of Blood Sugar Level after Virechana

After the completion of Virechana Karma FBS was 178mg/dl and PPBS was 220mg/dl. On the completion of Samsarjana Krama, FBS and PPBS were found to be 161mg/dl and 218mg/dl respectively.

Combined Efficacy of Vamana and Virechaan on FBS and PPBS

On follow-up after 15 days of the completion of Samsarjana Krama (after Virechana Karma), the FBS level was improved and further reduced to 156mg/dl and PPBS was found to be 228mg/dl.

Discussion

Type-2 diabetes occurs due to impaired insulin secretion, peripheral insulin resistance, and excessive hepatic glucose production. Insulin resistance impairs glucose utilization by insulin sensitive tissues and increase hepatic glucose output, both these effects contribute to the hyperglycemia. Increased hepatic glucose output predominantly accounts for increased fasting hyperglycemia, whereas decreased peripheral glucose uptake results rise in postprandial hyperglycemia [14]. Bahudravasleshma and Bahuabaddhameda are the basic pathological factors for Prameha (obstinate urinary disorders including diabetes). Bahudravasleshma can be some sort of target tissue defect, whereas Bahu-abaddhameda can be correlated with free fatty acids, which are released from intra-abdominal central adipose tissues. Free fatty acids may cause insulin resistance [15]. As far as Vamana is concerned it alleviates primarily Kapha and to some extent pitta also [16]. Here Vamana seems to reduce the peripheral insulin resistance in muscles by alleviating Bahudravasleshma and so helping to increase the glucose uptake. As Vamana also reduces the Meda, it must be promoting the function of insulin by reducing the circulating free fatty acids in the body [17]. As role of Virechana is on the site of Pitta it can be assumed that by acting primarily on liver and pancreas it may help to reduce hepatic glucose production and overcome the impaired insulin secretion. On the basis of results found, it is found that both Vamana and Virechana have role in reducing both FBS and PPBS considerably on all the occasions. Vamana acts on the basic pathology of Bahudravasleshma and Bahuabadhameda. Prameha has been mentioned as Aanushangivyadhi (disease having relapsing nature), which literally means a relapsing nature [18]. Thus, FBS and PPBS can be controlled by Vamana and Virechana. For long term results Samshodhana therapies along with the anti-diabetic diet regimen and life style changes can control DM and its complications.

Conclusion

It can be summarized that Samshodhana therapies like Vamana and Virechana cause marked reduction in FBS and PPBS levels. Samshodhana therapies are the choice of treatment in strong patients with dominant Kapha and Pitta. It seems that Vamana by reducing Kapha and Meda helps to minimize insulin resistance, whereas Virechana by lowering down the hepatic glucose production helps to control blood sugar levels. As Prameha is an Aanushangivyadhi, neither Vamana nor Virechana alone acts as the complete treatment for it. To get definite output regarding specific role of Vamana and Virechana on FBS and PPBS, further study is necessary. The present study was a single case study in which both Vamana and Virechana has been done. As it showed encouraging results, further research must be done on a large sample to evaluate the long term results on FBS and PPBS in diabetic patients.

Conflict of Interest

There is no conflict of interest.

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