CLINICAL APPROACH TO DIABETIC NEPHROPATHY AS SHOTHA - A COMPLICATION OF PRAMEHA

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ABSTRACT
Any food and drink in combination with physical activity that vitiates Kapha, Medas and Mutra causes Prameha. This runs a chronic course precipitating multiple complications and finally turns incurable and even proves fatal. In a clinical set up of inadequate treatment, perpetuation of severe Prameha, excessive morbidity of Medas or depletion of body elements; the vitiated Vata Pitta and Kapha Dosha tend to precipitate Upadrava (complications) of Prameha. Multiple comorbidities that associate the Prameha in a long run give it the convenient label of Vyadhi Sankara (syndrome). Shotha is an important complication as it may prove fatal at occasions. Edema is a presentation of end stage renal disease (ESRD) of diabetic nephropathy as per the conventional medicine. In the present day the diabetic nephropathy can be diagnosed in its earliest stage and the same is applicable to the diagnosis of Basti Marmabhighata and the complication of Shotha in Prameha. Among the different oral medications that are prescribed for Shotha, the prescription of Shunthi (Zingiber officinale Rosc) in combination with jiggery (Saccharum officinarum) is important as is effective both in Shotha Roga as well as Prameha.

Keywords: Prameha, Nephro Abhaya, morbidity of Basti Marm, diabetic nephropathy

INTRODUCTION
Illness related to the Mutravaha Srotas is categorized into two, based on increase or decrease in amount and frequency of urination. 20 diseases are identified where in urination is obstructed or decreased¹. In contrast to this 20 more diseases are enlisted that present with excessive urination and are named as Prameha. Morbidity of all three Vata, Pitta and Kapha dosha afflicting ten Dushya which include Rasa, Shonita, Mamsa, Medas, Majja, Shukra, Ojas, Sharira Kleda, Vasa and Lasika manifests as Prameha². Based on the involvement of Dosha, Prameha is further categorized into ten types of Kaphaja Prameha, six types of Pittaja Prameha and four types of Vataja Prameha. Progression of Kaphaja Prameha initially into Pittaja Prameha and then to Vataja Prameha is the usual
course\(^3\). This runs a chronic course and finally turns incurable and even proves fatal.

In general any food and drink in combination with physical activity that vitiates Kapha, Medas and Mutra causes Prameha\(^4\). Excessive intake of foods having sour or salty taste, foods that are heavy for digestion, foods that are slimy, cold, unctuous properties are said to cause Prameha. More to add, excessive consumptions of fatty foods, liquids, curds, sweets, drink prepared from fresh stock of grains, meat soup prepared from meat of domesticated, wet land or aquatic animals, dairy foods, sugarcane products alcoholic beverages and glutinous eating habit may predispose to Prameha. The activities that may lead to Prameha include excessive sleep, day sleep, habituation to inactivity, mostly staying lazy, inclination to sitting in a place for a prolonged period, comfortable sitting without physical activities, habit of not partaking in walking and habit of staying for days without bathing\(^5\). Also the illness is known to inherit the progeny from parents\(^6\).

The exclusive mutually supportive combinations of etiology, Dosha and Dushya rapidly progresses to the manifestation of Prameha. Due to the laxity of body parts the vitiated Kapha Dosha quickly circulates all over the body. Concomitantly, there occurs excessive accumulation non condensed form Medas. Since the vitiated Kapha Dosha and non condensed form of Medas have similar qualities, the Kapha Dosha tends to mix with Medas. More over as the Kapha is viti-ated, it tend afflicit Medas. The pathological combination of Kapha and Medas mixes with body fluid as well as Mamsa Dhatu. Due to excess increase of Kleda and Mamsa; the Mamsa gets afflicted and causes occurrence of Sharavika and similar other suppurative skin eruptions. The excessively accumulated body fluid is further affected by the Kapha Dosha and transforms it into urine. Again the opening of the Mutravaha Srotas originating from the Basti and Vankshana is turned heavy by the Medas and Kleda. Such changed opening of the Mutravaha srotas is obliterated by Shleshna. These pathological events eventually lead to serious lingering disease Prameha\(^7\).

In a clinical set up of inadequate treatment, perpetuation of sever Prameha, excessive morbidity of Medas or depletion of body elements; the vitiated Vata Pitta and Kapha Dosha tend to precipitate Upadraya (complications) of Prameha. The possible complications are excessive thirst, diarrhea, febrile, illness, and burning sensation in the whole body, debility, lack of taste in the mouth, indigestion, suppurative skin eruptions or abcess\(^8\). The inadequate management at this stage, due to excessively morbid Dosha causes injury to the Basti Marma which eventually manifests as Shotha\(^9\). Injury to any Marma (vital organs) may be exogenous or endogenous. The external trauma leading to injury to the Marma (vital organs) is cited as Bahya Marmabhiggata (exogenous vital organ injury). Contrary to this without an external trauma, if the morbid Dosha cause any injury to the Marma (vital organ); then is known as Abhyantara Marmabhiggata (endogenous vital organ injury)\(^10\). Relating this to the present context, when the morbid Dosha involved in the pathology of Prameha inflicts the Basti Marma; then is referred as Abhyantara Basti Marmabhiggata (endogenous injury to Basti Marma). This endogenous injury of Basti Marma clinically manifests as complication Shotha\(^11\).

This pathophysiology of Prameha causing Shotha is described as Nidanarthakara Roga (an illness causing another illness). Again the Nidanarthakara illness is said to be of two types. If the causative illness ceases to manifest after the development secondary illness then is referred as Ekarthakara Vyadhi (perpetuation of consequent illness alone). In contrast to this; if the causative illness as well as the second illness continues to exist, then is known as Ubhayarthakara Vyadhi (perpetuation of both causative as well as resultant disease)\(^12\). The Basti Marmabhiggata leading to Shotha due to Prameha belongs to the second category, where in Prameha as well as Shotha continue to coexist.

For descriptive purposes the different terminologies are mentioned to describe this concept of one illness causing another illness. The causative illness that manifest initially is also termed as Purvarupa Vyadhi (predisposing illness). The second illness that devel-
glomerular sclerosis is characteristic of diabetic thickening of the glomerular basement membrane and onset of microalbuminuria patients will pass into ESRD in about 10 years after the onset of microalbuminuria. Also it is estimated that the patients suffering from the type II diabetes mellitus for about 10-20 years are likely to suffer from this illness. Diabetic nephropathy should be suspected in patient of type II diabetes mellitus presenting with passing of foamy urine, unexplained proteinuria, hypertension, diabetic retinopathy, fatigue, foot edema secondary to hypo-albuminemia. Other co morbidities that may associate diabetic nephropathy include peripheral vascular occlusive disease, coronary artery disease, diabetic neuropathy and non healing skin ulcers and osteomyelitis. In general the diabetic nephropathy is diagnosed after a routine urinalysis and screening for microalbuminuria in the setting of diabetes. Abnormal values of Cystatin C and estimated GFR is the most sensitive tests in detecting early decline in renal functions in patient of diabetes mellitus.

Evidences suggest that early diagnosis prompt control of diabetes delays or prevent the onset of diabetic nephropathy. However in patients having the diabetes nephropathy a combination treatment of diabetes and nephropathy is the most ideal approach. In this regard it can be said that diabetes is treated by the principles of Prameha Chikitsa and the nephropathy is managed by the Shotha Chikitsa. Combination of the two treatments proves more beneficial.

With the objective of planning rational treatment, the patients of Prameha are classified based on the nutritional status. The patients of Prameha are categorized into two as overweight diabetic and emaciated diabetic. Overweight diabetic patient is treated with Apatarpana (reducing measures), Shamana (remitting management), Tarpana chikitsa (nutritional supplementation) as well as Vyayama (physical exercise). Apatarpana measures (reducing measures) include Shodhana (elimination of dosha), Langhana (restricted nutrition), Vyayama (physical exercise) and Nidana parivarjana (avoidance of etiological factors). Emaciated diabetic is treated with measures like Shamana (remitting management), Tarpana (nutritional sup-
The patient of Prameha who is well nourished and overweight is initially treated by Shodhana (elimination of Dosha). Sequential administration of Rukshana (causing unctuousness), Dipana pachana (augmenting the digestive ability), Snehapanama (oral administration of medicated fat), Snigdha sveda (unctuous sudation) helps in mobilization of Dosha from the whole body into the gastrointestinal tract. The Dosha mobilized in the trunk is then eliminated from the body; either through the upper route by therapeutic emesis; or through the lower route by way of therapeutic purgation. Vamana is specially indicated in Kapha Prameha. In contrast to this Pittaja Prameha is best treated by Virechana. Also it is said that in Pittaja Prameha should be treated by potent medication for Virechana as patients of Prameha are more or less resistant to purgation. It should be remembered that therapeutic enema in general and nourishing oil enema is contraindicated in Prameha. As the morbid Dosha exhibit a tendency to affect the lower half of the body, therapeutic purgation will be nearest route for elimination. Thus the therapeutic elimination targeted at the elimination of accumulated Dosha is effective both in Prameha and its complication Shotha. This should be the approach of purification in patients diagnosed with diabetic nephropathy. Proper nutritional supplementation is always advisable even in well nourished patient following purification of the body. food that are heavy for digestion but are less nutritious is the general principle of feeding the patients in Prameha. Literature has mentioned the risk of certain complications on over employment of Shodhana Chikitsa (elimination of Dosha). The complications due to excessive Shodhana are Gulma (abdominal pain), Kshaya (emaciation), Mehana Shula (penile pain), Basti Shula (pain in the bladder or kidney region) and Mutragraha (impaired urination). Therefore effective Tarpana (nutritional supplementation) is advisable. The food of the patients suffering from Prameha should contain grains pulses meat honey and vegetables and edible oils. Shali (rice) Godhuma (wheat) Yava (barley), Venuyava (bamboo seed) and Trina Dhanya (Millet) can be the staple food for patients suffering from Prameha. Purana Shali (old rice) and Shashtica Shali (rice that matures in 60 days) may be preferred among the rice varieties. Also the patient should be encouraged to use dishes of Yava as the predominant food. More to add, the Yava pretreated with decoctions that are effective in Kaphaja Prameha is opted for preparation of dishes. The Yava (barley) soaked in decoction of Triphala (three myrobalans) for overnight is used for the food preparation is just an example. Thus obtained Yava may be consumed in the form of Yavaudana (boiled barley of which the liquid portion is drained off) Ruksha Vatya (hulled barley gruel without addition of any edible fat) Yavasaktu (flour of dehusked and roasted barley), Apupa (roti prepared from barley) and Dhana (roasted barley). In the same manner one can use the rice wheat and other millets. Alternatively one can use dal soup prepared from Mudga (green gram). This should be the dietary management of the patient suffering from Prameha associated with Shotha as complication ample use of pulses in the food is more beneficial in patients with hypoalbuminaemia due to diabetic nephropathy and resultant edema. Following Shodhana (elimination of Dosha) the patient should be treated with Shamana Chikitsa (remitting measures). If the Shodhana (elimination of Dosha) is contraindicated as in physically week the treatment begins with Shamana (remitting measures) itself. Shamana includes both Antahparimarjana (internal medication) as well as Bahiparimarjana (external treatment) measures. Internal Shamana may be achieved by administering the medicines like Haridra (Curcuma longa), Amalaki (Emblica officinalis), Gudamara (Gymnema sylvestrae), Jambu (Syzygium cumini), Vijayasara (mursupium Pterocarpus), Methika (foenum graecum), Shilajatu (asphalt), Swarna maksha Bhasma, Trivanga Bhasma and are prescribed in the form of Kashaya (decoction), Churna (powder), Vati (tablet) Leha (confectionary), Mantha (mixed beverage) and light Bhakshya (dish). Vyayama (physical exercise) is the invariably advised as Shamana Langhana. Bahiparimarjana Chikitsa
(external treatment) is also advisable. Decoctions are suitable in all types of Prameha and particularly in Kaphaja Prameha and Pittaja Prameha. Oil or ghee processed with drugs that are curative of Prameha should be used in Vataja Prameha. Again if the Pitta is associating the Vataja Prameha then one should prescribe medicated ghee. If Vataja Prameha is associated with Pitta and Kapha Dosha then one can use the mixture of medicated oil and ghee. The addition of medications that are effective in Shotha Roga is mandatory when the Basti Marma involvement is diagnosed.

Among the different oral medications that are prescribed for Shotha, the prescription of Shunthi (Zingiber officinale Rosc) in combination with jiggery (Saccharum officinarum) is important as is effective both in Shotha Roga as well as Prameha. More to add the medicine can be administered in large dose by the Rasayana Vidhi for a shortest period of one month. 24 g of ginger paste is added with equal amount of jiggery is administered on the first day. Same amount is increased every day for five days to reach 120 g of ginger paste added with equal amount of jiggery. From 5th day to 35th day same dosage is maintained. This completes the course of Rasayana. This is said to be very effective in Shotha and Prameha and hence should be an ideal prescription in diabetic nephropathy18.

DISCUSSION
A clinical study entitled “Effectiveness of the Nephro abhaya on glomerular filtration rate in patients of chronic diabetic nephropathy” was conducted during the period January 2016 to January 2018. Nephro abhaya is plant based formulation manufactured by SDM pharmacy consisting Ardraka (Zingiber officinale Rosc) and jiggery (Saccharum officinarum) as main ingredient. This study was an Interventional, Randomized, Parallel Assignment, double blind, Efficacy Study in 97 patients suffering from diabetic nephropathy attending the outpatient department of Sri Dharmasthala Manjunatheshwara Ayurveda hospital, Udupi. The objective was to investigate whether the medication with the plant based formulation Nephro abhaya is effective in improving the glomerular filtration rate in patients suffering from morbidity of Basti Marma / diabetic nephropathy thus improving the life expectancy of patients. 97 patients with diabetic nephropathy were randomly assigned 1:1 to oral administration of Nephro abhaya (n=50) or placebo (n=47). The randomization sequence was done by computer generated permuted block randomization with block size of 6 and is concealed using sealed sequentially numbered drug containers. Main outcome measures were Cystatin c, eGFR, and microalbuminuria, serum creatinine, blood urea and HbA1c. The study recorded the initial value of Cystatin c in Nephro abhaya group at base line was 1.331 (±SE 0.0355) and which reduced 1.160 (±SE0.0355) after the medication. The initial mean value of eGFR in Nephro abhaya group was 56.693 ml/min/1.73m² (±SE 2.152), that improved to 69.739 ml/min/1.73m² (±SE2.902) following medication thus recording an improvement to the tune of 13.383 ml/min/1.73m². The mean value of microalbuminuria at base line in Nephro abhaya group was 92.420 mg/dl (±SE 14.021) that came down to 53.360 mg/ dl (±SE8.494) after 96 days of medication thus recording a mean reduction of 39.06 mg/ dl. Also this change was statistically significant as analyzed by paired t test showing p = 0.019. This clinical study concluded that Nephro abhaya is effective in reducing the Cystatin c and improving the eGFR without elevating the blood sugar level. The serum creatinine and blood urea level is also improved by the medication with Nephro abhaya. The observed improvement in the renal function, point towards the requirement of continuing the same for the longer duration for improving the life of ailing kidney.

CONCLUSION
To sum up, any food and drink in combination with physical activity that vitiates Kapha, Medas and Mutra causes Prameha. Morbidity of three, Vata, Pitta and Kapha Dosha afflicting specific ten Dushya lead to Prameha. This runs a chronic course and finally turns incurable and even proves fatal. In a clinical
set up of inadequate treatment, perpetuation of severe Prameha, excessive morbidity of Medas or depletion of body elements; the vitiated Vata Pitta and Kapha Dosha tend to precipitate Upadrava (complications) of Prameha. The inadequate management at this stage, due to excessively morbid Dosha causes injury to the Basti Marma which eventually manifests as Shotha. Edema is a presentation of end stage renal disease (ESRD) of diabetic nephropathy as per the conventional medicine and is comparable to Shotha complication of Prameha. In the present day the diabetic nephropathy can be diagnosed in its earliest stage and the same is applicable to the diagnosis of basti Marma highata and the complication of Shotha in Prameha. Persistent albuminuria (>300 mg/d or >200 μg/min) Progressive decline in the glomerular filtration rate (GFR) Elevated arterial blood pressure characterizes diabetic nephropathy. Overweight diabetic patient is treated with Apatarpana (reducing measures), Shamana (remitting management), Tarpana Chikitsa (nutritional supplementation) as well as Vyayama (physical exercise). Among the different oral medications that are prescribed for Shotha, the prescription of Ardraka (Zingiber officinale Rosc) in combination with jiggery (Saccharum officinarum) is important as is effective both in Shotha Roga as well as Prameha.

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