ABSTRACT

Present study was carried out to understand the strength (rogibala) as well as to know the intensity of disease (rogabala) madhumeha (DM) by adopting Sushrutokta Dwadashavidha Pariksha. Present clinical study reveals that most of the madhumeha patients are belonging to madhyaama bala (moderate strength of the disease) followed by avara bala (poor strength of the disease). Due to gross abnormality in the investigations in respect to plasma glucose levels, lipid profile etc along with clinical presentation & complications it can be inferred that disease madhumeha belongs to moderate intensity followed by powerful intensity. That’s why treatment principles vary from patient to patient. For example if the strength (rogibala) of madhumeha patient is low associated with powerful intensity (rogabala) of madhumeha, such patients need samshodhana therapy for the eradication of intensity of morbidity of doshas but it is not possible to undergo powerful samshodhana therapy because of the weak strength of the patient. In such circumstances, it may be managed by mild samshodhana therapies followed by appropriate rasayana therapies like shilajatu etc to boost up strength of the patient. Treatment also varies depending on the nature of agnidusti and prakriti to get successful outcome. At last it may be concluded that understanding of Sushrutokta Dwadashavidha Pariksha is essential to understand the rogibala & rogabala to plan suitable therapeutics. More clinical data’s are required for easy understanding of Sushrutokta Dwadashavidha Pariksha and to implement it as applied tool at O.P.D. and I.P.D. level to plan suitable therapeutics interventions based on ayurvedic principles. Further clinical study is required to simplify and to make the scientific validation of Sushrutokta Dwadashavidha Pariksha

Key words – Madhumeha, Diabetes Mellitus, Genes, MODY, Type-I, Type II, IGT, FPG, FFA, LDL, HDL, Kapha, Meda, Baddha meda, Abaddha meda and CAD

INTRODUCTION

Prameha comprises of 20 sub varieties of diseases with various physical and chemical changes in mutra. Madhumeha is one of the variety included under vataja prameha and it is also mentioned that if prameha not cured or treated in due course of time it gets converted to madhumeha. Madhumeha may be compared to diabetes mellitus because of the similarities in both disease for example in respect to etiology, pathogenesis, clinical features & prognosis. Classical signs & symptoms of prameha are Prabhuta mutrata & Avila mutrata it signifies the metabolic abnormality as well as urinary tract pathology. Prameha can be diagnosed based on either of the following two important criteria -

1. Slight increase in quality of urine associated with premonitory symptoms.
2. Complete appearance of premonitory symptoms or half of the premonitory symptoms associated with excessive urination.

Diabetes mellitus is one of the most common endocrine disorders affecting almost 6% of the world population. According to WHO “Diabetes is a major threat to global public health that is rapidly getting worse, and the biggest impact is on adults of working age in developing countries”. The total no. of recorded diabetes patients till year 2000 are 171 million and expecting to be increase by 366 million in year 2030. As per WHO report, it is estimated that diabetes mellitus is one of the major killer of the recent time. The South East Asian population is more at risk of diabetes and coronary heart disease. Indian ‘s stand at first in the whole world to have the largest numbers of diabetic patient i.e. 31.7 million will be increase up to 79.44 million by year 2030.
Aims and Objectives
- To understand the Rogibala and Rogabala in madhumeha (DM) by Sushrutokta Dwadashavidha Pariksha.
- Scientific assessment of Sushrutokta Dwadashavidha Pariksha in madhumeha by using clinical & ancillary investigations.

MATERIAL AND METHODS

Inclusion criteria
- Age of patients in between 10-70 years
- Patients who fulfill the criteria of Diagnostic features of Madhumeha as well as diabetes mellitus.
- Both male and female patients.

Exclusion criteria
1. Diabetes Mellitus associated with systemic Viral/Bacterial infections like HIV, Hepatitis, Tuberculosis, and Malignancy. etc

Selection and distribution of patients
In present study the patients of Madhumeha (DM) have been registered from O.P.D. and I.P.D. of Kayachikitsa and Vikriti Vigyana of S.S. Hospital, B.H.U., Varanasi. The selection of cases has been done on the basis of the patients who fulfilled the diagnostic criteria of madhumeha (DM) have been selected for the present study.

Clinical Examination
A standardized clinical proforma was prepared, covering the present and past medical history of first degree relatives and controls, including current and previous medications, diet pattern, and activities related to Kaya, Vaka and Manas, information about hypertension, coronary heart disease and stroke. On the basis of clinical history, clinical examination and ancillary investigations were carried out to diagnose the patients of Madhumeha (DM).

Subjective criteria

Demographic profile
The patients fulfilling the diagnostic criteria were taken for the study and interrogated thoroughly to collect the data for the study of demographic profile of the sample and pattern of disease incidence. The following points were recorded- Name, Age, Sex, Address, Religion, Occupation, Habitats, Socio-economic status, Dietary habits, Addictions, Seasonal variation etc.

Clinical profile
After preliminary registration, each patient was subjected to detailed history taking, clinical examination and ancillary investigations. The method of clinical examination was based on Ayurvedic system of medicine as well as modern system of medicine. The perform of each patient was filled up by interrogation, clinical examination and ancillary investigations with special emphasis to Sushrutokta Dwadashavidha Pariksha was done.

CRITERIA FOR DIAGNOSIS
The diagnostic criteria are as follows:
1. Clinical Signs and Symptoms (Rupa) table no.1 & Vishesha Rupa table no.2
2. Objective Criteria

I. Laboratory Investigation
Routine Hematological examination or Complete Blood Count-
- TLC
- DLC
- Hb%
- ESR

II. Biochemical investigations
- Fasting plasma glucose (FPG)
- Two Hours plasma glucose (PPPG)
- Lipid profile
- Blood urea
- Serum Creatinine

III. HbA1c

IV. Urine Examination:
Routine and Microscopic

Observations and Results
Present clinical study entitled was carried out in the department of Vikriti Vigyana and Clinical Laboratory (I.M.), S.S. Hospital, IMS, BHU, Varanasi in 100 patients of madhumeha (DM) patients. Observation & results of the present study are as follows-

Demographic Profile
- Age wise distribution of 100 patients of Madhumeha

Present clinical study shows the Age wise distribution of patients in which predominant of 51-60 yrs i.e. 45.00% and then 41-50 yrs, 31-40 yrs, 61-70 yrs was 21.00%, 18.00%, 16.00% respectively.

Occupational Status
Present clinical study reveals that higher incident observed in businessman and Govt. employee i.e. 28.00% & 24.00% respectively.

Incidence of addiction
Out of 100 registered cases one or different type (Mainly Alcohol, Smoking and Tobacco) of addiction habit detected in about half cases i.e. 61.00% cases. The above table shows that the incidence of addiction of tobacco was found to be 14.00% followed by 11.00% of betel leaves (Pana) + Tobacco addiction and 09.00% of alcohol addiction, also there were five patients 05.00% observed who taking all three addiction. So addiction has the significant role in the cases of Diabetes mellitus.
Distribution according to Physical Activity
The present clinical data suggest shows that maximum 69.00% of patients were related with sedentary type of work followed by moderate work i.e. 27%.

Family history Madhumeha in 1st degree relative
Present clinical study reveals that maximum no. of patients i.e. 71.00% patients out of total 100 registered cases having history of diabetes mellitus in their first degree relatives.

Frequency of Food intake
Present clinical study reveals that maximum number of patients i.e. 45.00% had three times meal/day followed by four times and two times i.e. 39.00% and 16.00% respectively.

Study of Habitual consumption of parched barley, corn flour, Mudga and Amalaka
Present clinical study shows that habitual consumption of parched barley, dry corn flour, Mudga and Amalaka absent in all the cases.

Vihara Sambandhi
Present clinical study reveals that maximum number of patients i.e. 62.00% were having a habit of sleeping for 1-2 hrs in a day. Present study reveals that maximum numbers of patients i.e. 68.00% were not indulging in Ratrijagarana.

Present clinical study shows that maximum numbers of patients i.e. 61.00% were having both physical and mental stress.

Present clinical study reveals that maximum number of patients i.e. 69.00% had sedentary life style followed by physical and both (sedentary and physical) i.e. 27.00% and 04.00% respectively.

Samanya lakshana
Present clinical study reveals that the swedadhikya was absent in 60.00% of patients out of the 100 cases. Angagandha was absent in 57.00% of patients. Maximum number of patients i.e. 82.00% had the complaint of Anga Shaithilya. Danteshu Malotpati, Ghanangata and Keshavriddhi is present in 84.00%, 10.00% and 05.00% cases respectively

Samanya lakshana
Present clinical study reveals that swetadhikya was absent in all the cases followed by four times and two times i.e. 39.00% and 16.00% respectively.

Samanya lakshana
Present clinical study reveals that the swetadhikya was absent in all the cases followed by four times and two times i.e. 39.00% and 16.00% respectively.

Samanya lakshana
Present clinical study reveals that maximum number of patients had the complaint of Pipasa, moderate number of patients i.e. 62.00% had swhasa daurgandhya, 78.00% of patients had tandra, kara suptata and pada suptata absent in majority of the cases i.e. 82.00% and 86.00% respectively.

Samanya lakshana
Present clinical study shows that minimum number of patients i.e.08% had the complaint of Anga Suptata, maximum number of patients i.e.88.00% had lakshana of alasya, 82.00% of the patients had the lakshana of Mukha shosha, no one were having the lakshana of Kayachchidhresh Upadeha, 25.00% of patients had the lakshana of Sarva Kala Nidra and all the patients i.e.75.00% were having the lakshana of Pipilika sharirabhisaranam.

Vishesha Lakshanas
Present clinical study reveals that i.e. 100% had the Lakshana of Prabhuta mutrata, 74.00% of Prabhuta had the Lakshana of Avila mutratra, 58.00% of the patients comes under the category of Sthauliya, 56.00% of the patients had the lakshana of Bahuashi, 77.00% of the patients had the Lakshana of Snigdhangana and maximum number of patients i.e.88.00% had lakshana of Shavyasana swapna shila.

Vishesha lakshana
Present clinical study reveals that 04.00% of the patients had the lakshana of Krisharta, 03% had lakshana of Alpashi, only 07.00% of the patients had Rukshata, no patients had the lakshana of Paribhramana Shila, and the Lakshanas like Mutramadhurya and Tanumadhuraya was present in all patients i.e. 100%.

OBJECTIVE
Incidence of Sama/Nirama Mutra /Purisha Pariksha in different groups of Madhumeha.
It has been observed from the present clinical study that maximum number of patients belongs to sama mutra category i.e. 90.00%. Nirama purisha observed in majority of cases i.e. 90.00%.

Involvement of Srotas (Abhyantara) in different groups of Madhumeha (DM).
Present clinical study reveals that rasavaha, mutravaha, udaka vaha, raktavaha, mamsavaha, medovaha, asthvaha, majjavaha and shukravahasrotas involvement observed in all the cases followed by annavaha.
Involvement of srotodusti in different groups of Madhumeha(DM).

Present clinical study reveals that atipravritti and vimargagamana srotodusti observed in all the cases of madhumeha.

Fasting Plasma Glucose

Present clinical study reveals that maximum number of patients i.e. 41.00% was having very high FPG level followed by high FPG & normal FPG level 33.00% & 26.00% respectively.

2 h Plasma Glucose

Present clinical study reveals that the maximum numbers of patients i.e. 41.00% were having very high 2h PG level followed by high 2h PG & normal 2h PG level i.e. 35.00% & 28.00% respectively.

Random Plasma Glucose

Present clinical study reveals that maximum number of patients i.e. 36.00% had RPG level i.e. 351-400mg/dl followed by Borderline 200-250mg/dl, 251-300mg/dl and 160-199mg/dl i.e. 24.00%, 20.00% and 20.00% respectively.

Random Urine Sugar

Present clinical study shows that Majority of the patient’s i.e.36.00% was having 02% of the Sugar in the urine followed by 1.5, 1.0 and 0.5 i.e. 22.00%, 22.00% & 20.00% respectively.

Serum Cholesterol

Present clinical study shows that maximum patients i.e. 63.00% were having the desirable levels of serum Cholesterol <200mg/dl followed by Borderline 200-240mg/dl and High risk >240mg/dl i.e. 21.00% and 16.00% respectively.

Serum HDL

Present clinical study reveals that maximum patients i.e. 55.00% were having the Borderline levels of serum HDL followed by Desirable < 60 mg/dl and High risk<35mg/dl i.e. 27.00% and 18.00% respectively.

Serum LDL

Present clinical study reveals that the maximum numbers of the patients (i.e. 47.00%) were having the Borderline levels of serum LDL and followed by Desirable <130mg/dl and High risk 160mg/dl i.e. 30.00% and 23.00% respectively.

Serum Triglyceride

Present clinical study reveals that maximum patients i.e. 55.00% were having the BORDERLINE-HIGH 150 mg/dL - 199 mg/dL serum TG followed by HIGH 200 mg/dL - 499 mg/dL and VERY HIGH Over >500 mg/dL serum tryglycerides i.e 20.00% and 25.00% respectively.

Glycosylated hemoglobin (HbA1c)

Present clinical study reveals that majority of the patients belongs to good control category i.e.32.00% followed by poor control i.e.40.00 % and fair control 28.00%.

Incidence of Ayu pariksha Table no.3

Present clinical study reveals that all patients were belong to madhyamayu i.e. 100.00%

Distribution according to Sara Table no.4

Present clinical study reveals that maximum number of the patients were belongs to twak sara i.e. 32.00% followed by rakta, mamsa, & asthi sara i.e. 18.00%, 19.00% & 15.00% respectively.

Incidence of BMI Table no.5

Present clinical study shows that the incidence of patient in the overweight group of 25.0-29.9 kg/m² (39.00%) was the highest, followed by normal group of 18.5-24.9 kg/m² (35.00%).

Distribution according to Vyadhi Table no. 6

Present clinical study reveals that maximum no. of patients belongs to prakvevala & anyalakshana i.e. 70.00% followed by aupasargika vyadhi i.e. 30.00%

Distribution according to Ritu Table no. 7

Present clinical study reveals that maximum no. of patients registered in the vasanta ritu, i.e. 20.00% followed by hemanta, grishma, varsha & shishira ritu i.e. 18.00% 16.00%, 16.00%, and 15.00%.

Distribution of the Patients according to Agni Table no.8

Present clinical study reveals that maximum no. of patients were suffering from vishamagni followed by tikshagni, mandagni & samagni state i.e. 25.00%, 25.00% & 20.00 respectively.

Distribution of the Patients according to Vaya Table no. 9

Present clinical study is suggesting for the predominance of parihani age groups of the patient in present study i.e. 82.00%.

Distribution of the Patients according to Deha Table no.10

Present clinical study is suggesting for the maximum patients were sthula i.e. 58.00% followed by Madhya deha 35.00% and krisha were only 07.00%.

Distribution of the Patients according to Bala Table no.11

Present clinical study shows maximum patients i.e. 66.00% belonged to Madhyama bala, 21.00% belonged to Avara bala and 13.00% belonged to Pravara bala.
Distribution according to Satya Table no.12
Present clinical study shows Maximum patients i.e. 67.00% belonged to Madhyama satva, 23.00% belonged to Avara satva and 10.00% belonged to Pravara satva.

Distribution according to Satmya Table no.13
Present clinical study reveals that maximum patients i.e. 60.00% were having madhyama satmya followed by avara satmya i.e. 40.00%

Distribution according to Bheshaja Table no.14
The study reveals that 40.00% of the patients were taking modern medicine followed Modern + Ayurvedic drugs, homeopathic drugs & modern +homeopathic drugs i.e. 17.00%, 16.00%, 14.00% & 13.00% respectively.

Incidence of predominance of Deha Prakriti Table no.15
Present clinical study shows that Vata-Kaphaja predominant Prakriti has greater risk (53.00%) for developing the disease than the Vata-Pittaja (16.00%) and Kapha-Pittaja (31.00%).

Incidence of predominance of Manasika Prakriti Table no.16
Present clinical study shows that maximum 66.00% patients belonged to Rajasika prakriti, 28.00% belonged to Tamasika prakriti, and 06.00% patients belonged to Satvika prakriti.

Desha Table no.17
Present clinical study shows that all 100.00% of patients belonged to sadharana desha.

DISCUSSION
Prameha comprises of a number of diseases with various physical and chemical changes in urine. It is also believed that if not cured or treated properly in due course of time, prameha changes into madhumeha4 (Diabetes mellitus). Prameha is a disease characterized by urinary disorder but it may not be inferred that all the urinary disorders caused by urinary tract pathology may be included in prameha. In forth coming pages, it will be clear that it is a metabolic disorder not localized to urinary tract alone. Thus the manifestations of metabolic abnormality as well as urinary tract pathology are included in two symptoms: prabhuta mutrata (excessive urination) and avila mutrata (urine turbidity). It may be also suggested that the former is more akin to metabolic changes and the latter to urinary tract pathology. Therefore a greater significance should be attached to the former i.e. prabhuta mutrata. The excessive urination is due to osmotic diuresis which in turn is due to hyperglycemia. Prabhuta mutrata may be of significance at a late stage. This prabhuta mutrata is turbidity in the urine, which occurs in various disorders of urinary tract and extra urinary tract. But the disorders vary with one another depending on colour (concentration), volume etc. of the urine, which occurs due to body reaction with the doshas.

Madhumeha is one of the types of vatika prameha and the last in the list of twenty types pramehas described by Charaka. Astringency associated with sweetness distinguishes it from ikshumeha or ikshuvalikameha in which urine is extremely sweet without any trace of astringency because of profuse excretion, loss of ojas is an important feature in madhumeha. In fact, where there is loss of ojas due to negligence every type of prameha can be converted to madhumeha6. It is to be noted that ojas has been mentioned as one of the pathogenic materials (dushya) in prameha generally and specially in madhumeha. Here the term rasaojas quite significant, which means the essential nature of ojas. Explaining the pathogenesis of madhumeha, Charaka says that ojas is of sweet nature but yavu associated with astringency (kashayatva) carries into urinary bladder and manifest madhumeha. Thus the ojas play an essential role in diabetes from beginning to end. In prameha all aspects of ojas are affected. It check the normal development, reduces immunity, which further causes appearance of pidakas and other complications, diminishes the sexual power, energy and finally leads to death. All these process of affects are related to ojas. Hence the treatment of ojomaha (madhumeha) is to promote the ojas and this is the important point to be kept in mind and this can be achieved with drugs having rasayana and pramehaghna properties.

Etiology of Madhumeha (Diabetes Mellitus)

Diet and exercise
The Apathya nimittaja prameha may be due to over eating, lack of exercise and other sedentary life styles and it may be compared to the non insulin dependent (Type-II) Diabetes mellitus. Excessive sleep during day and night, lack of exercise, laziness and frequent and excessive use of new grains like Hayanaka, Yavaka, Chinaka etc., use of new peas, black gram and other pulses along with Ghi, Tila, Tilapishti etc. and the use of sugar cane juice, milk and its products, fresh wine, Dadhivikara, meat soups of different animals, residing in water or near water and all other materials vitiating Kapha, results into prameha in susceptible individuals. All the above etiological factors of prameha are similar to the modern concept of Diabetes mellitus, which is a major health hazard affecting millions of people all over the world. In addition to the above mentioned factors, Charaka has emphasized that anxiety, anger, worry, grief and similar other stress producing factors lead to the development of prameha in susceptible individuals.
Consuming foods that are low in fiber and high in glycemic loads is associated with increased risk of DM\(^8\). Lack of exercise is an independent factor from the body mass index. Reduced activities are associated with the development of type II DM.

**Genes**
The sahaja prameha may be due to some genetic defect and it may be inherited from parents. It is due to some abnormality in sperm or ovum (i.e. bija dosha) and it manifests early in life\(^9\). This sahaja type of prameha can be compared with Type-I Diabetes mellitus. It is important, therefore, to distinguish between diabetogenic genes and diabetes-related genes (e.g., those regulating appetite, energy expenditure, and intra abdominal fat accumulation). The latter class of genes may be defined as not being specific (i.e. not being mainly limited to people with diabetes), as by themselves not being sufficient to cause diabetes and not necessarily being essential. These genes are best considered as genetically determined risk factors.

**Mental factors**
DM is an established psychosomatic disorder. It is combined with anxiety, fears and fear of death, inappropriate assessment of their abilities, hypothermia, anxiousness, and vegetative dysfunctions. High risk of complications of DM was associated with influence of psycho stressors and depressive disorders\(^10\).

So both sciences have accepted the role of diet, activities and mental factors in the development of diabetes Mellitus.

**Pathogenesis of Madhumeha (Diabetes Mellitus)**
Doshas like kapha, pitta and vata and dusshyas like medas, rakta, shukra, ambu, vasa, lasika, majja, rasa, ojas & mansa are responsible for the causation of prameha which is of twenty types\(^11\). Prameha manifest due to complex interaction of bijadushti, doshas & dusshyas and causes several distinct types of prameha\(^12\).

According to Sushruta due to prameha janaka ahara (diet) and Vihara (life style and behavior), aparipakva ama, vata, pitta and kapha become excited and vitiate mainly medo dhatu along with other dhatus. These excited doshas and vitiated dhatu reaches basti via mutravaha srotas and remain there for some time and cause prameha of various types by excreting vitiated dhatu with urine\(^13\). Type II DM is characterized by impaired insulin secretion, insulin resistance, excessive hepatic glucose production, and abnormal fat metabolism. Obesity, particularly visceral or central (as evidenced by the hip-waist ratio), is very common in Type II DM. In the early stages of the disorder, glucose tolerance remains near-normal, despite insulin resistance, because the pancreatic beta cells compensate by increasing insulin output. As insulin resistance and compensatory hyper insulinemia progress, the pancreatic islets in certain individuals are unable to sustain the hyper insulinemic state\(^14\).

The overall metabolic dysregulation associated with madhumeha(DM) causes secondary patho-physiologic changes in multiple organ system that impose a tremendous burden on the individual with DM & on the health care system. There is a complex interaction among doshas, dusshyas & bija dushhti brings disequilibrium state of humors, which inturn causes agnidushhti resulting into abnormal digestion & metabolism. Proper functioning of agni & patency of srotas is vital for proper utilization of nutrients but in case of madhumeha both are decreased causing abnormal secretion of insulin, excess hepatic glucose production & abnormal fat & muscle metabolism.

**Clinical features of Madhumeha**\(^15\) (Diabetes Mellitus)

Classical symptoms of DM are polyurea, polyphagia, Polydipsia, Weakness, Cramps on Walking, Libido Joint pain, Weight Loss, Burning sensation in feet, White spots on shoes (Glycosuria), Dry mouth & tongue, Deep sighing respiration (Kussmaul breathing), Skin infections, Banalities (devoid of freshness or originality), Blurred vision, Cardiac pain, Neuropathy, Nephropathy, Ulceration, Dementia, Cognitive impairment, Fatigue, Pruritus vulvae, Incontinence of urine and stool and Weight loss. It shows that there is a similarity between Madhumeha & DM in relation to clinical features\(^16\).

**Age**
The age wise distribution of patients in the present study, in which predominant of 51-60 yrs i.e. 45.00% and then...
41-50 yrs, 31-40 yrs, 61-70 yrs was 21.00%, 18.00%, 16.00% respectively. It suggests that the prevalence of Type II DM is more in the middle to old age and increasing age is associated with high risk of diabetes mellitus. Most of the patients belonged to the age group between 51 – 60 years, as the disease madhumeha is considered to be variety of vataja prameha and its manifestation takes prolonged period, and also for interaction of dosha- dushya and hetu. All prameha if not treated gets converted to madhumeha and it takes longer duration of time. The prevalence of diabetes is rapidly rising all over the globe at an alarming rate. Over the past 30 yr, the status of diabetes has changed from being considered as a mild disorder of the elderly to one of the major causes of morbidity and mortality affecting the youth and middle aged people.

**Occupation**

Present study reveals that, maximum i.e. 28.00% Businessmen and 24.00% patients were Govt. employee followed by person who does service in field work, Retired Govt. employee, farmer, house wife and retired from field work i.e. 14.00%, 11.00%, 09.00%, 08.00% and 06.00% respectively. The spread of risk factors of diabetes disease due to the expansion of urban and industrial lifestyle will extend the prevalence of this disease in world. Therefore, life style behaviors changes through health education approaches should be in health priorities in order to prevent the burden of the disease. Lack of physical exercise is one of the potential risk factor for the development of DM.

**Addiction**

Present study reveals that patients using one or different type (Mainly Alcohol, Smoking and Tobacco) of addiction habit which was about half cases i.e. 61.00% cases. The study shows that the incidence of addiction of tobacco was found to be 14.00% followed by 11.00% of betel leaves (Pana) + Tobacco addiction and 09.00% of alcohol addiction, also there were five patients 05.00% observed who taking all three addiction. Evidence regarding the association between alcohol consumption and Type II diabetes risk remains inconsistent. Alcohol influences glucose metabolism in several ways in diabetic patients as well as in non-diabetic patients. Since alcohol inhibits both gluconeogenesis and glycogenolysis, its acute intake without food may provoke hypoglycaemia, especially in cases of depleted glycogen stores and in combination with sulphonylurea.

**Distribution according to physical activity**

The study shows that maximum 69.00% of patients were related with sedentary type of work followed by moderate work i.e. 27%. Ayurveda says that factors which favor the exacerbation of kapha, meda & mutra are responsible for the genesis of madhumeha. Sedentary life style is the one of the potential causative factors for the aggravation of kapha, meda & mutra.

**Family History**

Present study reveals that most of the patients i.e. 71.00% were having the family history of Diabetes while the rest of i.e. 29.00% patients were not having any family history. Prameho anushanginam means disease recurs again & again from generation to generations due to bija dushhti. All pramehas are gets converted into madhumeha in the later stage and role of hereditary was well established in the development of madhumeha. Type-II diabetes is probably caused by a complex interaction of environmental factors and predisposing genetic factors. Obesity is an important component of metabolic syndrome X and predisposes to the development of type II diabetes mellitus. The incidence of obesity, Type II diabetes mellitus and metabolic syndrome X is increasing, and the cause(s) for this increasing incidence is not clear. Although genetics could play an important role in the higher prevalence of these diseases, it is not clear how genetic factors interact with environmental and dietary factors to increase their incidence.

**Study of habitual consumption of parched barley, corn flour, mudga and amalaka**

Present study reveals that habitual consumption of parched barley, dry corn flour, mudga and amalaka absent in all the cases. It indicates that people are not interested in taking traditional foods rather they likes to eat fast foods, dairy products, sweets etc., which act as etiology for DM.

**Vihara Sambandhi**

Present study reveals that maximum number of patients i.e. 62.00% was having a habit of sleeping for 1-2 hrs in a day. Above table reveals those maximum numbers of patients i.e. 68.00% were not indulging in Ratrija. Study shows that maximum numbers of patients i.e. 61.00% were having both physical and mental stress. Study reveals that maximum number of patients i.e. 69.00% had sedentary life style followed by physical and both i.e. 27.00% and 04.00% respectively. Swapnasukha is one of the nidana of madhumeha, the above data substantiate that excessive involvement in diva swapna is one of the cause for madhumeha. Ratrijagarana does not have much role in the manifestation of madhumeha. A 1996 study by the University of Chicago Medical Center showed that sleep deprivation severely affects the human body's ability to...
metabolize glucose, which can lead to early-stage Diabetes Type II. The stress with mainly psychic component exacerbated the diabetes in streptozotocin treated rats and the glucose levels increased significantly also in non diabetic controls, but no glucose was detected in their urine. Recent research indicates that diabetes mellitus may be precipitated by stress. Psychological and physical stresses play a significant role in the development of hyperglycemia in the setting of type II diabetes.

**Samanya Lakshanas**

The study reveals that Swedadhikya is absent in 60.00% patients out of the 100 cases. It is also same in case of Angagandha i.e. 57.00% of patients didn’t have this complaint. Maximum number of patients i.e. 82.00% had the complaint of Anga Shaitiliya, Danteshu Malotpatti Ghanangata and Keshaviridhvi were present in 84.00%, 10.00% and 05.00% cases respectively.

Study reveals that Lakshana of Kesha Jatilatva and Nakhativirdhvi were absent in 100% patients, maximum number of patients’ i.e.84.00% had Shitapriyatvam lakshana, 82.00% had the Gala shosha & Talu shosha both and only 28.00% of the patients had Asyamadhurya. The study reveals that 28.00% of the patients had karadaha, 56.00% of the patients had padadaha, and the maximum number of patients i.e. 92% had mutrapipilikabhisaraman, only 17.00% of the patients had shuklamutrata, 74.00% of the patients had Snigdha gatatra and moderate number of patients i.e. 58.00% had the complaint of Picchila gatatra.

The study shows that 72.00% of the patients had the lakshana of Guru Gatrata, maximum number of patients’ i.e.86.00% had lakshana of Pipasa, moderate number of patients i.e. 62.00% had shwasa daurgandhya, 78.00% of patients had Tandra, Kara Suptata and Pada Suptata absent in majority of the cases i.e. 82.00% and 86.00% respectively.

The study shows that minimum number of patients i.e.08% had the complaint of Anga Suptata, maximum number of patients i.e.88.00% had lakshana of alasya, 82.00% of the patients had the lakshana of Mukha shosha, no one were having the lakshana of Kayachidreshu Upadeha, 25.00% of patients had the lakshana of Sarva Kala Nidra and all the patients i.e.75.00% were having the lakshana of Pipilikara Sharirabhisaranam.

By this above mentioned data one can come to conclusion that if the person who is presenting with most of these symptoms can be diagnosed as madhumehi. Kesha ativriddhi, Nakhativriddhi, Kesha Jatitlata and Kaychhidreshu Upadeha are the lakshana which were not found in any of the patients, these lakshana may manifest in the severe condition of the disease or due to adaptation of hygienic measures. Classic presentation of signs & symptoms may be due to abnormal interaction of doshas with dashyas causing deranged metabolism.

**Vishesha Lakshanas**

The present clinical study reveals that i.e. 100% had the lakshana of prabhuta mutrata, 74.00% had the lakshana of avila mutrata, 58.00% of the patients comes under the category of sthaulya, 56.00% of the patients had the lakshana of bahuashi, 77.00% of the patients had the lakshana of snigdhanga and maximum number of patients i.e.88.00% had lakshana of shayyasana swapna shila.

The study reveals that 04.00% of the patients had the lakshana of krisharta, 03.00% had lakshana of alpashi, only 07.00% of the patients had rukshata, no patients had the lakshana of paribhramana shila, and the lakshanas like mutramadhurya and tanumadhurata was present in all patients i.e. 100.00%.

**Sama/Nirama Mutra /Puriksha Pariksha**

It has been observed from the above table that maximum number of patients belongs to sama mutra category i.e. 90.00%. Nirama purisha is observed in majority of one case i.e. 90.00%. Sama mutrata may be due to abnormal interaction of doshas with dashyas.

**Srotas (Abhyantara)**

The study reveals that rasavaha, mutravaha, udakavaha, raktavaha, mamsavaha, medovaha, asthivaha, majjavaha and Shukravaha srotasa involvement observed in all the cases followed by annavaha, purishavaha and swedavaha i.e.30.00%, 30.00% and 40.00% respectively. Involvement of more number of srotas indicates the severe nature of the disease and it also requires special attention while prescribing management techniques.

**Srotodushti**

The study reveals that atipravritti and vimargagamana srotodushti observed in all the cases of madhumeha. It indicates the excessive and abnormal movement of doshas and dashyas in their respective srotas.

**Fasting Plasma Glucose**

The study reveals that maximum number of patients i.e. 41.00%was having very high FPG level followed by high FPG & normal FPG level 33.00% & 26.00% respectively. It signifies that some patients are newly diagnosed and some are under medication and some are under irregular medication and some are not following proper dietetic and exercise regimen.

**2 h Plasma Glucose**

The study reveals that the maximum numbers of patients i.e. 41.00% were having very high 2h PG level followed...
by high 2h PG & normal 2h PG level i.e. 35.00% & 28.00% respectively. It signifies that some patients are newly diagnosed and some are under medication and some are under irregular medication and some are not following proper dietetic and exercise regimen all leading to abnormal metabolism, causing excessive hepatic glucose production. It may also due to insulin resistance or abnormal insulin secretion.

**Random Plasma Glucose**
The study reveals that maximum number of patients i.e. 36.00% had RPG level i.e. 351-400mg/dl followed by 200-250mg/dl, 251-300mg/dl and 160-199mg/dl i.e. 24.00%, 20.00% and 20.00% respectively. As the newly diagnosed cases of diabetes was taken for the study the above mentioned data suggest that most of the patient had to come to the physician in the initial stage of diabetes or taking proper medicament or taking irregular medication or erratic diet & life style leading to increase RPG.

**Random Urine Sugar**
The study shows that Majority of the patient’s i.e.36.00% was having 02% of the Sugar in the urine followed by 1.5, 1.0 and 0.5 i.e. 22.00%, 22.00% & 20.00% respectively. It indicates the mutramadhuryata concept of madhumeha.

**Serum Cholesterol**
The study shows that maximum patients i.e. 63.00% were having the desirable levels of serum Cholesterol <200mg/dl followed by Borderline 200-240mg/dl and High risk >240mg/dl i.e. 21.00% and 16.00% respectively. DM patients should be encouraged to stop smoking and take a healthy diet containing low saturated and trans-fatty acids, and low in dietary cholesterol because these act as a risk factor in the development of this disease and these may not be the etiological factors. These may favor the development of complications.

**Serum HDL/ Serum LDL/ Serum TG**
The study shows that maximum patients i.e. 63.00% were having the desirable levels of serum Cholesterol <200mg/dl followed by Borderline 200-240mg/dl and High risk >240mg/dl i.e. 21.00% and 16.00% respectively.

The study reveals that maximum patients i.e. 55.00% were having the Borderline levels of serum HDL followed by Desirable < 60 mg/dl and High risk <35mg/dl i.e. 27.00% and 18.00% respectively.

The study reveals that the maximum patients i.e. 47.00% were having the Borderline levels of serum LDL and followed by Desirable <130mg/dl and High risk160mg/dl i.e. 30.00% and 23.00% respectively.

**Glycosylated hemoglobin (HbA1c)**
The study shows that the majority of the patients belong for good control category i.e.32.00% followed by poor control i.e.40.00 % and fair control 28.00%. In general, the normal range of glycosylated haemoglobin found in healthy persons is quite low, just about 4.00%–06.00%. Higher level of glycosylated haemoglobin is found in people with persistently elevated blood sugar, as in diabetes mellitus, particularly type I diabetes. A diabetic person with good glucose control has HbA1c level that is close to or within the reference range. Persistent elevations in blood sugar (and therefore HbA1c) increase the risk for the long-term vascular complications of diabetes such as coronary disease, heart attack, stroke, heart failure, kidney failure, microangiopathy, neuropathy and demyelination of axons, blindness, loss of sensation, especially in the feet, gangrene etc. Poor blood glucose control also increases the risk of short-term complications of surgery such as poor wound healing20.

**Incidence of Ayu pariksha**
The study reveals that all patients were belongs to madhyamayu (16-70years) i.e. 100.00%. While Type II diabetes mellitus traditionally has been thought to affect individuals older than 40 years, it is being recognized increasingly in younger persons, particularly in highly susceptible racial and ethnic groups and the obese. In some areas, more Type II than Type I diabetes mellitus is being diagnosed in prepubertal children, teenagers, and young adults. Virtually all cases of diabetes mellitus in older individuals are Type II.

**Distribution according to Sara**
The study reveals that maximum number of the patients were belongs to twak sara i.e. 32.00% followed by rakta, mamsa, & asthi sara i.e. 18.00%, 19.00% & 15.00% respectively. It may be inferred that twak sara, rakta sara, mamsa sara and asthi sara people are more prone to develop madhumeha. Kashyapa says that twak sara people never suffer from twak vikara and in the same way meda sara people may not develop madhumeha because of purest form of meda dhatu.

**Incidence of BMI**
The study shows that the incidence of patient in the overweight group of 25.0-29.9 kg/m² (39.00%) was the highest, followed by normal group of 18.5-24.9 kg/m²(35.00%). In contrast, individuals with Type II DM often exhibit the following features: (1) develop diabetes after the age of 30; (2) are usually obese (80% are obese, but elderly individuals may be lean); (3) may not require insulin therapy initially; and (4) may have associated conditions such as insulin resistance,
hypertension, cardiovascular disease, dyslipidemia, or PCOS. In Type II DM, insulin resistance is often associated with abdominal obesity (as opposed to hip and thigh obesity) and hypertriglyceridemia. Ayurveda included madhumeha under medodhatu dushhti vikara justifies above statement.

**Distribution according to Vyadhi**
The study reveals that maximum no. of patients belongs to prakkevala & anyalakshana i.e. 70.00%followed by aupargika vyadhi i.e. 30.00%. Present study indicates that patients of madhumeha(DM) develop signs and symptoms of purvarupya and rupa in maximum number of patients followed by complications. It signifies that patients are belonging to moderate to severe grade of disease.

**Distribution according to Ritu**
Present clinical study reveals that’s maximum no. of patients registered in the vasanta, ritu, i.e. 20.00% followed by hemantha, grishma, varsha & shishira ritu i.e. 18.00% 16.00%, 16.00%, and 15.00%. It reveals the influence of kapha and vata in the exacerbations of signs and symptoms of the disease.

**Distribution of the Patients according to Agni**
The study reveals that maximum no. of patients were suffering from vipshamagni 30% followed by tikshagni, mandagni & samagni state i.e. 25.00%, 25.00% & 20.00 respectively. It signifies the imbalanced state of dosha, which influences on functions of agni. Majority of the patients were having agnidushti which influences on digestion and metabolism process inside the body. Type II DM is characterized by impaired insulin secretion, insulin resistance, excessive hepatic glucose production, and abnormal fat metabolism.

**Distribution of the Patients according to Vaya**
The study is suggesting for the predominance of parihani age (40 to 70 yrs) groups of the patient in present study i.e. 82.00%. The incidence of diabetes increases with age, with most cases being diagnosed after the age of 40 yrs. This equates to a life time risk of developing diabetes of 1 in 10 (Neil et al., 1987). Madhumeha manifest due to predominance of vata along with kapha. Most cases are diagnosed at the stage of parihani avastha because vata dominates at this age. Kapha dosha declines at this age leading to loss of vyadhikshamatva and which favors the classical presentation of madhumeha.

**Distribution of the Patients according to Deha**
The study is suggesting for the maximum patients were sthula i.e. 58.00% followed by Madhya deha 35.00% and krisha were only 07.00%. Madhumeha (DM) is highly susceptible in obese than non obese. Few cases may show weight gain due to increased appetite. Factors like loss of water (polyuria), glucosuria, metabolism of body fat and protein may lead to weight loss. It reveals that obesity is one of the potential risk factor for the development of madhumeha. Due to enhanced appetite patient may gain weight. Hence present study comprises of maximum number of obese patients.

**Distribution of the Patients according to Bala**
The maximum patients i.e. 66.00% belonged to Madhyama bala, 21.00% belonged to Avara bala and 13.00% belonged to Pravara bala. Due to inefficiency of the cell to metabolize glucose, reserve fat of body is metabolized to gain energy. When fat is broken down in the body, it uses more energy as compared to glucose; hence body goes in negative calorie effect, which results in fatigue. Present study emphasis that the most of the patients are belongs to moderate strength category due to disturbed metabolism as mentioned above.

**Distribution according to Satva**
The maximum patients i.e. 67.00% belonged to Madhyama satva, 23.00% belonged to Avara satva and 10.00% belonged to Pravara satva. Person of madhyama satva follows strict dietetic regimen and exercise for certain period followed by not adopting the same for some time. This irregularity may support the development of madhumeha as well as complications. Avara satva people may not adopt any preventive measures as a result these people are more prone to Madhumeha and its complications.

**Distribution according to Samyta**
The maximum patients i.e. 60.00% were having madhyama satmaya followed by avara satmaya i.e. 40.00%. After the development of the disease, patients prohibits the intake of madhura, amla and lavana rasa, ghi, mamsa etc resulting into madhyama satmaya. In certain individuals it coincides with other diseases like hypertension, hyperlipidemia, CVS etc. in such individual’s option of taking madhura, amla, lavana and katu rasa along with ghee, oil, non veg. etc. become restricted resulting into avara satmaya. On the contrary without considering this if person indulges all rasas, ghi, oil etc. leading to development of complications. It suggests the moderate strength of the patients.

**Distribution according to Bhesha**
The study reveals that 40.00% of the patients were taking modern medicine followed Modern + Ayurvedic drugs, homeopathic drugs & modern +homeopathic drugs i.e. 17.00%, 16.00%, 14.00% & 13.00% respectively.

Variations in the medication pattern in the form of modern medicine, Ayurveda & homeopathy may also.
causes abnormal plasma glucose or some patients may get benefit by this therapy.

**Incidence of predominance of Deha Prakriti**
The study shows that Vata-Kaphaja predominant Prakriti has greater risk (53.00%) for developing the disease than the Vata-Pitta (16.00%) and Kapha-Pitta (31.00%). Influence of prakriti in the development disease is well established. Hence Ayurveda says that if vata prakriti persons are suffers from vataja vyadhi then it becomes difficult for management. Vata-kaphaja persons are more prone to develop madhumeha & Vata-kaphaja predominant doshas in the genesis of madhumeha. That’s why while prescribing the medication importance of dietetic regimen & role of exercise has to be conveyed to madhumeha patients for better management. Dynamic association & interaction exist between medicines, dietetic regimen & exercises in the proper control of diabetes mellitus.

**Incidence of predominance of Manasika Prakriti**
The study shows that maximum 66.00% patients belonged to rajasika prakriti, 28.00% belonged to tamasika prakriti, and 06.00% patients belonged to satvika prakriti. rajasika & tamasika prakriti people are exposing themselves to development of madhumeha because of erratic diet regimen & activities.

**Desha**
The study shows that maximum 100.00% patients belonged to sadharana desha. Patients visiting S.S. Hospital IMS, BHU are mostly from sadharana desha. So influence of desha in the exacerbations & development of madhumeha cannot be established.

**Critical application of Sushrutokta dwadashvidha pariksha**

**Factors Modifying Drug Action**
Variation in response to the same dose of a drug between different patients and even in the same patient on different occasions is a rule rather than exception. A multitude of host and environmental factors influence drug response. Though, individual variation cannot be totally accounted for these factors, their understanding can guide choice of appropriate drug and dose for an individual patient. This concept was clearly defined while describing dwadashavidha pariksha by Sushruta to understand and to implement a suitable therapeutics in a suitable dose.

**Various qualitative and quantitative factors modify drug actions-**
A. Quantitatively – The plasma concentration and/or the action of the drug is increased or decreased. This view was clearly defined when describing the state of aharashakti, pramana and samhanana.

B. Qualitatively – The type of response is altered e.g. drug allergy on idiosyncrasy. The various factors are discussed below –

Body size: -It influences the concentration of the drug attained at the site of the action. For exceptionally obese or lean individuals and for children dose may be calculated on body weight (BW) basis;

\[
\text{Individual dose} = \frac{\text{BW(Kg)}}{70} \times \text{average adult dose}
\]

Ayurvedic acharyas defined the samhanana and pramana to implement strong, moderate and mild dose of the medicine depending on their pravara, madhyama and avara characteristics properties respectively.

Age: - The dose of a drug for children often calculated from the adult dose.

\[
\text{Child dose} = \frac{\text{Age}}{\text{Age+12}} \times \text{adult dose (Young’s formula)}
\]

Solid dosage forms and aerosol inhalations are difficult to administer to young children. Children are growing and are susceptible to special adverse effects. This view was described clearly that’s why mild therapeutics was described in ayurveda for the managements of child health problems. That’s why mercurial preparations, purificatory procedures etc. are strictly contraindicated in children to prevent adverse affects.

Elderly – in the elderly, renal function progressively declines (intact nephron loss) and drug dose have to be reduced. This principle is clearly described in ayurveda i.e. elderly patients must be handled delicately and mild therapeutics should be employed to lessen the adverse effects and to gain good results. Keeping this in mind purificatory measures are contraindicated in elderly patients to avoid the incidence of adverse drug reactions and mild to moderate medicaments advised.

Sex: -Females have smaller body size and require doses that are on the lower side of the range. Subjective effects of drugs may differ in females because of their mental makeup. In women consideration must also be given to menstruation, pregnancy and lactation. There are marked physiological changes during pregnancy, especially in third trimester, which can alter drug disposition. This concept was accepted in ayurvedic literature i.e. female are having moderate compactness, measurements, essence of dhatus, power of digestion and exercise etc. That’s why moderate therapeutic must be employed to lessen the incidence of adverse drug reactions. During pregnancy mild therapeutic approach was described and
stronger therapies like alkali, cauterization, purificatory procedures are contraindicated.

Species and race: -There are maybe examples of differences in responsiveness to drugs among different species. Different species having prakriti of different type, this leads to the responsiveness of the medicine.

Genetics: -The dose of the drug to produce the same effect may vary 4-6 folds among different individuals. This is mainly because of differing rates of drug metabolism as the amount of microzomal enzymes in genetically controlled. There are also differences in target organ sensitively. This concept was defined under prakriti and sara pariksha. This is varies in different constitution and essence of dhatus because drug metabolism varies among different sub classification of prakriti and sara.

Environmental factors and time of administration: - Several environmental factors affect drug responses; exposure to insecticides, carcinogens, tobacco, smoke, and consumption of charcoal boiled meat are well known to induce drug metabolism. Type of diet and meals can alter drug absorption. Subjective effect of a drug may be markedly affected by the setup in which it is taken. This view was clearly defined under kala and desha pariksha pathya regimen, time period for the ingestion of medicine was described in detail in Ayurvedic texts, that’s why different time period for the consumption of medicine described to enhance the efficacy of the prescribed compound.

Psychological Factor: -Efficacy of a drug can be affected by patient’s beliefs, attitudes and expectations. This view was clearly stated by our acharyas under satva pariksha and satva sara pariksha in detail.

Pathological states: -Not only drugs modify disease processes, several diseases can influence drug disposition and drug action.

CONCLUSION

Present study has been designed to understand more about madhumeha (DM) and to plan appropriate therapeutics. Ayurveda says that one should initiate action after acquiring full knowledge of karana, karana, karyayoni, karya, karyaphala, anubandha, desha, kala, prarviti & upaya for successful management of disease.

Present study has given emphasis on understanding of some of the above mentioned criteria’s. A patient constitutes karyadesha, that’s why patients should be examined thoroughly to obtain the knowledge of life span (ayu) strength of patient (Rogibala) and intensity of the morbidity (Rogabala) then only principles of treatment can be applied to get desired result.

Present clinical study reveals that most of the madhumeha patients are belonging to madhyama bala (moderate strength of the disease) followed by avara bala (poor strength of the disease). Due to gross abnormality in the investigations in respect to plasma glucose levels, lipid profile etc along with clinical presentation & complications it can be inferred that disease madhumeha belongs to moderate intensity followed by powerful intensity. That’s why treatment principles vary from patient to patient. For example if the strength (Rogibala) of madhumeha patient is low associated with powerful intensity (rogabala) of madhumeha, such patients need samshodhana therapy for the eradication of intensity of morbidity of doshas but it is not possible to undergo powerful samshodhana therapy because of the weak strength of the patient. In such circumstances, it may be managed by mild samshodhana therapies followed by appropriate rasayana therapies like shilajatu etc to boost up strength of the patient. Treatment also varies depending on the nature of agnidushhi and prakriti to get successful outcome. At last it may be concluded that understanding of Sushrutota dwadashvidha pariksha is essential to understand the rogibala & rogabala to plan suitable therapeutics.

REFERENCES
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5. Ashtanga Hridayam composed by Vagbhata nidanasthana 10/7 Chowkhambha krishnadas Academy Varanasi, 2006
Table 1: Samanya lakshana

<table>
<thead>
<tr>
<th>No.</th>
<th>Ayu</th>
<th>No. of Patients</th>
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<tr>
<td>1</td>
<td>Dāriyāya</td>
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</tr>
<tr>
<td>2</td>
<td>Madhyamayu</td>
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</tr>
<tr>
<td>3</td>
<td>Alpayu</td>
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Table 2: Distribution according to Ayu

<table>
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<th>B.M.I. (kg/m2)</th>
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<th>Percentage (%)</th>
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<tr>
<td>&lt; 18.5 (Under weight)</td>
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<td>07.00</td>
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<tr>
<td>18.5-23.9 (Normal)</td>
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</tr>
<tr>
<td>25.0-29.9 (Over weight)</td>
<td>39</td>
<td>39.00</td>
</tr>
<tr>
<td>30.0-39.9 (Obese)</td>
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<td>19.00</td>
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<tr>
<td>&gt; 40 (Severe Obese)</td>
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<td>04.00</td>
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<td>Total</td>
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Table 3: Distribution according to Sara

<table>
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<th>No. of Patients</th>
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<td>Satva Sara</td>
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<td>Rakta Sara</td>
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<td>Manna Sara</td>
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<td>Meda Sara</td>
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<tr>
<td>Asthi Sara</td>
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<tr>
<td>Majja Sara</td>
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<td>Shukra Sara</td>
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Table 4: Distribution according to Vyadhi

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</tr>
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<tbody>
<tr>
<td>Aupasārgika Roga</td>
<td>30</td>
</tr>
<tr>
<td>a. Prakṛetugam Roga</td>
<td>70</td>
</tr>
<tr>
<td>b. Anya Lakshana (Purva Rupa)</td>
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Table 5: Distribution according to Ritu

<table>
<thead>
<tr>
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<th>Percentage (%)</th>
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<tbody>
<tr>
<td>Grīshma</td>
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</tr>
<tr>
<td>Varsha</td>
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</tr>
<tr>
<td>Sharada</td>
<td>16</td>
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<tr>
<td>Hemanthi</td>
<td>18</td>
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<tr>
<td>Shishira</td>
<td>15</td>
</tr>
<tr>
<td>Vasanta</td>
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Table 6: Distribution according to Agni

<table>
<thead>
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<th>Percentage (%)</th>
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<tr>
<td>Sannagni</td>
<td>20</td>
</tr>
<tr>
<td>Vīshagni</td>
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</tr>
<tr>
<td>Tikkagni</td>
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</tr>
<tr>
<td>Mandagni</td>
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Table 9: Distribution of the Patients according to Vaya

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<th>Vaya</th>
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<td>Balya - &lt;15 yrs</td>
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<td>00.00</td>
</tr>
<tr>
<td>Kshirapana upto 1 year</td>
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<td>00.00</td>
</tr>
<tr>
<td>Kshirannada 1-2 yrs</td>
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<td>00.00</td>
</tr>
<tr>
<td>Annada 3-15 yrs</td>
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<td>00.00</td>
</tr>
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<td>Madhya (15-70 yrs)</td>
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<td></td>
</tr>
<tr>
<td>Vriddhi upto 20 yrs</td>
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<td>00.00</td>
</tr>
<tr>
<td>Yauvana upto 20-30 yrs</td>
<td>00</td>
<td>00.00</td>
</tr>
<tr>
<td>Sampunata upto 30-40 yrs</td>
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<td>18.00</td>
</tr>
<tr>
<td>Parihahani upto 40-70 yrs</td>
<td>82</td>
<td>82.00</td>
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<tr>
<td>Vriddha(&gt;70 yrs)</td>
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</tr>
<tr>
<td>Total</td>
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<td>100.00</td>
</tr>
</tbody>
</table>

Table 10: Distribution of the Patients according to Deha

<table>
<thead>
<tr>
<th>Deha</th>
<th>No. of Patients</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sthula</td>
<td>58</td>
<td>58.00</td>
</tr>
<tr>
<td>Madhya</td>
<td>35</td>
<td>35.00</td>
</tr>
<tr>
<td>Krishna</td>
<td>07</td>
<td>07.00</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
<td>100.00</td>
</tr>
</tbody>
</table>

Table 11: Distribution of the Patients according to Bala

<table>
<thead>
<tr>
<th>Bala</th>
<th>No. of Patients</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pravara</td>
<td>13</td>
<td>13.00</td>
</tr>
<tr>
<td>Madhyama</td>
<td>66</td>
<td>66.00</td>
</tr>
<tr>
<td>Avara</td>
<td>21</td>
<td>21.00</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
<td>100.00</td>
</tr>
</tbody>
</table>

Table 12: Distribution according to Satva

<table>
<thead>
<tr>
<th>Satva</th>
<th>No. of Patients</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pravara</td>
<td>10</td>
<td>10.00</td>
</tr>
<tr>
<td>Madhyama</td>
<td>67</td>
<td>67.00</td>
</tr>
<tr>
<td>Avara</td>
<td>23</td>
<td>23.00</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
<td>100.00</td>
</tr>
</tbody>
</table>

Table 13: Distribution according to Satmya

<table>
<thead>
<tr>
<th>Satmya</th>
<th>No. of Patients</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pravara</td>
<td>00</td>
<td>00.00</td>
</tr>
<tr>
<td>Madhyama</td>
<td>60</td>
<td>60.00</td>
</tr>
<tr>
<td>Avara</td>
<td>40</td>
<td>40.00</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
<td>100.00</td>
</tr>
</tbody>
</table>

Table 14: Distribution according to Bheshaja

<table>
<thead>
<tr>
<th>Bheshaja</th>
<th>No. of Patients</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Modern medicine (oral hypoglycemic agents)</td>
<td>Single drug</td>
<td>25</td>
</tr>
<tr>
<td></td>
<td>Combination of drugs</td>
<td>15</td>
</tr>
<tr>
<td>Ayurvedic drugs</td>
<td>16</td>
<td>16.00</td>
</tr>
<tr>
<td>Modern medicine + Ayurvedic drug</td>
<td>17</td>
<td>17.00</td>
</tr>
<tr>
<td>Homeopathic drugs</td>
<td>14</td>
<td>14.00</td>
</tr>
<tr>
<td>Modern medicine + homeopathic drugs</td>
<td>13</td>
<td>13.00</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
<td>100.00</td>
</tr>
</tbody>
</table>

Table 15: Incidence of predominance of Deha Prakriti

<table>
<thead>
<tr>
<th>Deha Prakriti</th>
<th>No. of Patients</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vata-Kaphaja</td>
<td>53</td>
<td>53.00</td>
</tr>
<tr>
<td>Vata-Pittaja</td>
<td>16</td>
<td>16.00</td>
</tr>
<tr>
<td>Kapha-Pittaja</td>
<td>31</td>
<td>31.00</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
<td>100.00</td>
</tr>
</tbody>
</table>

Table 16: Incidence of predominance of Manasika Prakriti

<table>
<thead>
<tr>
<th>Manasika Prakriti</th>
<th>No. of Patients</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Satvika</td>
<td>06</td>
<td>06.00</td>
</tr>
<tr>
<td>Rajasika</td>
<td>66</td>
<td>66.00</td>
</tr>
<tr>
<td>Tamsika</td>
<td>28</td>
<td>29.00</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
<td>100.00</td>
</tr>
</tbody>
</table>

Table 17: Desha

<table>
<thead>
<tr>
<th>Desha</th>
<th>Total</th>
<th>Percent (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sadharana</td>
<td>100</td>
<td>100.00</td>
</tr>
<tr>
<td>Jangala</td>
<td>00</td>
<td>00.00</td>
</tr>
<tr>
<td>Anapa</td>
<td>00</td>
<td>00.00</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
<td>100.00</td>
</tr>
</tbody>
</table>

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