



Screening for madhumegam (Pre-diabetes & diabetes mellitus) on Patients reporting in the Out patient department of Ayothidoss Pandithar Hospital at National Institute of Siddha, Chennai.

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ABSTRACT

Introduction: Madhumegam is characterized by frequent and excessive urination which ultimately leads to deterioration of seven body constituents and three humours. Its signs and symptoms may be correlated with Diabetes Mellitus in Modern science. Type 2 Diabetes often asymptomatic in its early stages and can remain undiagnosed for many years and causes micro and macro vascular complication, so earlier diagnoses of Diabetes Mellitus is crucial. **Aim and objective:** To determine the prevalence of Madhumegam (Type 2 Diabetes Mellitus and Prediabetes) in previously undiagnosed subjects who attended the outpatient Department in Ayothidoss Pandithar Hospital, National Institute of Siddha, Chennai. **Method:** A cross-sectional survey has conducted on a population of 500 subjects aged above 20 who were randomly selected. A study questionnaire of American Diabetes Association was used for obtaining information from study subjects. **Result:** The prevalence of Madhumegam among 500 patients reported is 4.0 %. The progression of old age, male gender, sedentary life style, occupational stress, family history, High Blood Pressure, Obesity, Kaba Pitha Theagam, Vatha Pitha Naadi are strongly associated with Diabetes Mellitus and prediabetes prevalence. **Conclusion:** This study emphasized the importance of Diabetic education to the risk group of the society, especially Prediabetic and Diabetic subjects.

Keywords:

Diabetes, Prediabetes, Kaba Pitha Theagi, Vatha Pitha Naadi, Obesity

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INTRODUCTION

Siddha an ancient, deep rooted scientific system of medical science, is one of the six recognized streams of Indian medicine, it is well prevalent for more than two thousand years in south India and northeast Srilanka.

In siddha literature, Mega Noi is classified into twenty types in which four comes under Vatham, six under Pitham and ten under kabam. Madhumegam/Neerizhivu one of the 20 types of Mega Noi is classified under Pitham category.

As per **Siddhar Theraiyar** the principal cause of Megha Noigal is derangement of Pitham humour.

“Pakar Pitha Vinthaiyalaathu Megam Varathu”

-Siddhar Theriyar pinimuthar karanam^[11]

“Kuriudanae Megamdhan Kodumai Seithu Kurainthu Varum Thathuvellam Kunripogum”

-Pathinen siddhar naadi nool

Which means increased pitham humour enhances the vayus (vatham)by heat, which in turns affects Iyyam. The deterioration of three humour affects the function of seven udalkathukal^[12]

In one of the Siddha classical text **“Theran karisal”** Siruneerga noigal (kidney diseases) is classified into two major types **“Neer perukkalnoigal”**and **“Neer arugalnoigal”**. Any pathology which gives rise to increased urination in quantity or frequency irrespective of the varied causes is included under Neerperukkal noigal or Neerizhivu or Mega neer or Vegu Moothiram or Inippu Neer or Madhumegam^[14].

The classical textbook **“Yugi vaidhaya Chintamani 800”** clearly defines the clinical symptoms of Madhumegam. Premonitory symptoms of Madhumegam include polyuria, polyphagia, polydipsia, tastelessness, general debility, mood changes & irritability, numbness on palms and soles^[13]. These symptoms can be correlated with Non-Insulin Dependent Diabetes Mellitus (NIDDM) in modern medicine.

In the past three decades, the prevalence of Diabetes mellitus has risen dramatically in countries of all income levels. There is a globally agreed target to halt the rise in Diabetes and Obesity by 2025. About 422 million people worldwide have Diabetes, the majority living in low-and middle-income countries, and 1.6 million deaths are directly attributed to Diabetes each year. Both the

number of cases and the prevalence of Diabetes have been steadily increasing over the past few decades^[15].

Chronic hyperglycemia is associated with long term microvascular (Retinopathy, Nephropathy, Neuropathy) and macrovascular (Ischemia Heart Disease, Stroke Peripheral Vascular Disease) complication. The complication of DM become very severe in the delay of an early diagnosis .Comorbidities of DM lead to substantial decrease in the quality of life as well as socio eco nomic consequences ,Diabetes related complication are the major cause of premature death and disability in the world ,which is 2 -4 times more prevalent in patients with DM than in the general population, so this study emphasis early diagnosis of Diabetes as early as possible, enabling patients to be treated and thus avoiding or reducing the risk of complications economical burdening and to increase the quality of life.

MATERIAL AND METHODS

1. The aim of the study is Screening of Madhumegam (Type 2 Diabetes mellitus) for Prediabetes and Diabetes Conditions in previously undiagnosed subjects attending Out Patient Department of Ayothidoss Pandithar hospital, National Institute of Siddha
2. The study protocol was prepared and submitted before Institutional Ethical Committee (IEC) of National Institute of Siddha. The date of IEC approval & IEC number is (IEC No. NIS/IEC/2020/MP-8) Registered on (09/05/2020).
3. The trial was registered in Clinical Trial Registry of India (CTRI/2020/06/026140) Registered on (25/06/2020)
4. The subjects are recruited on basis of Diabetes screening profoma of American Diabetes Association.
5. Subjects who had Diabetes risk score ≥ 5 are intervened to laboratorial oral glucose tolerance test
6. The individual data were fed simultaneously into an MS excel. After obtaining data from required sample size (500 subjects), the frequency for each factor was obtained.

OBSERVATION AND RESULTS

Figure 1: subjects are diagnosed on basis of Diabetes screening proforma of American Diabetes Association

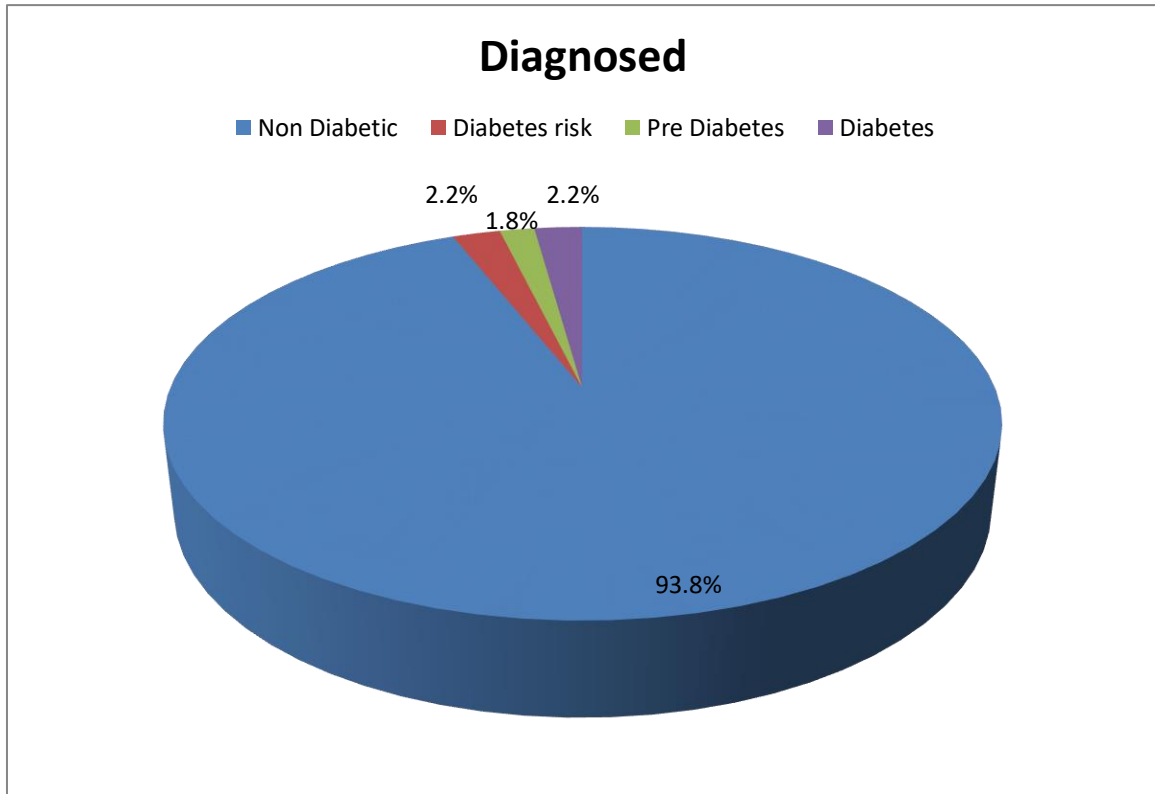


Figure: 2 Theaga Ilakkanam:(Diabetic risk test –satisfied Prediabetic)

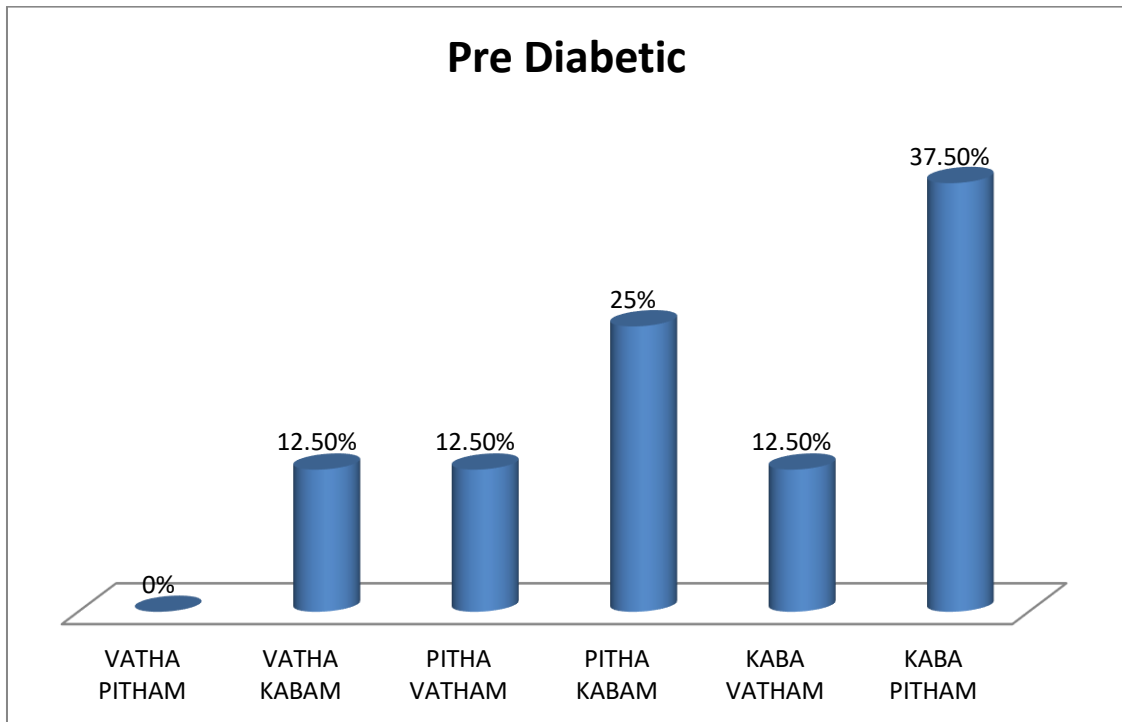


Figure:3 Theaga Ilakkanam:(Diabetic risk test –satisfied diabetic)

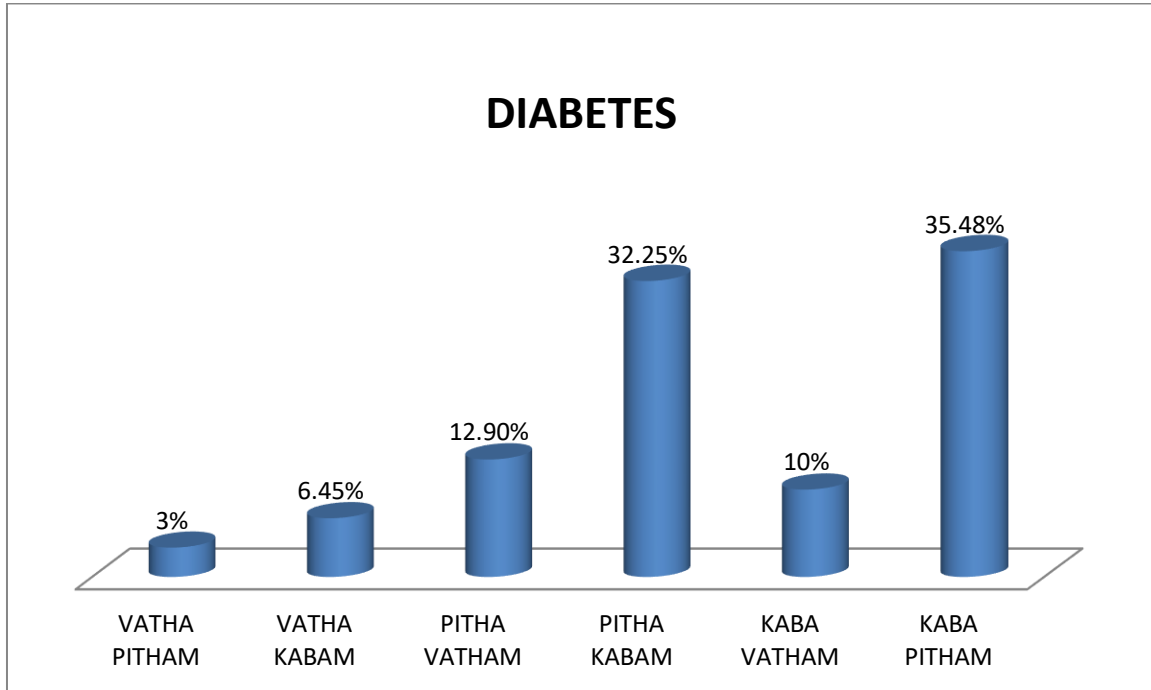


Figure:4 Naadi:(Diabetic risk test –satisfied diabetic)

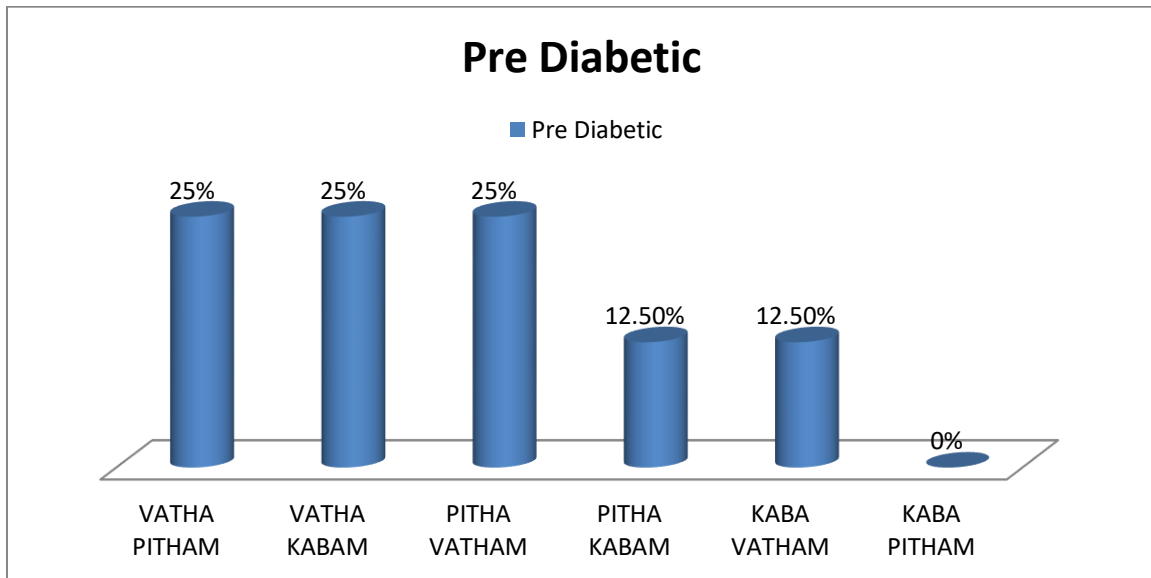
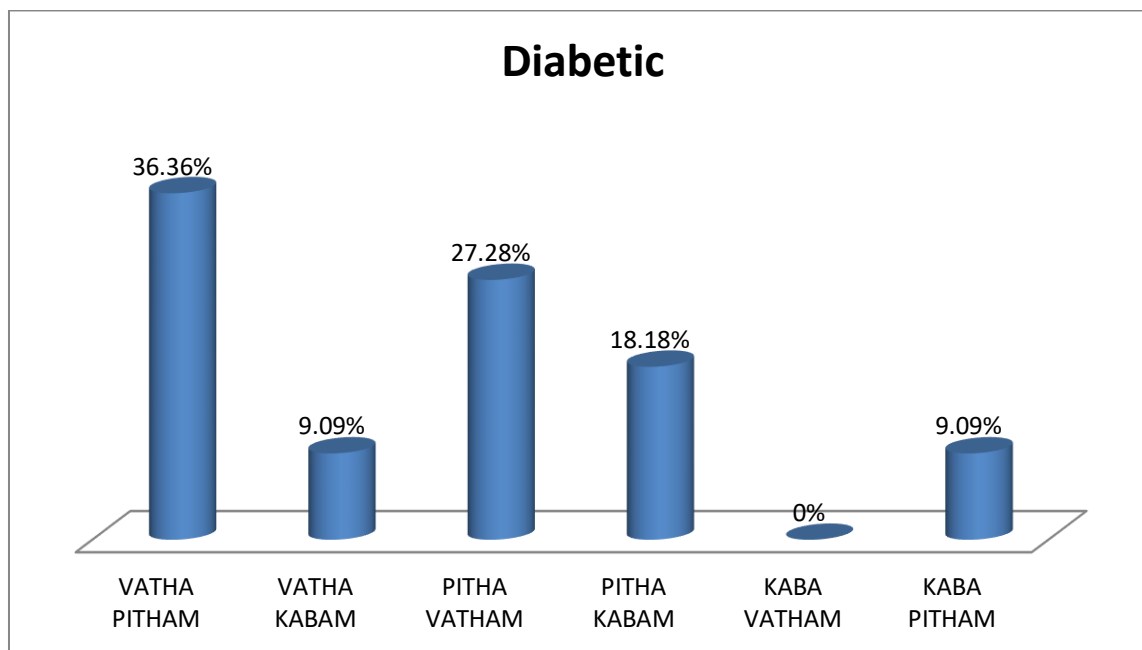


Figure: 5 Naadi:(Diabetic risk test –satisfied Diabetic)



CONCLUSION

A cross-sectional study was conducted to determine the prevalence of Type 2 Diabetes (Diabetes and prediabetes) in patients reporting in National Institute of Siddha. On statistical observing shows significant result 31(50 %) patients 12 (13 %) patients are only with Diabetic risk, 19 (37 %) patients are Diabetes and Prediabetes and Pearson Chi-Square is 11.888, Continuity Correction is 9.528, Likelihood Ratio is 12.909, Fisher's Exact Test is null, Linear-by-Linear Association is 11.504, total Number of Valid Cases is 31. Type 2 diabetes to be significantly higher (2.2 %) than Prediabetes (1.8 %).

In the gender category, Male had a higher prevalence of Diabetes Mellitus compared to Female which was similar in the previous study, It's possibly due to differences in insulin sensitivity and regional fat deposition higher in male than female [8,5].

11 patients with diabetes (100 %) and 6 (75 %) patients with prediabetes are from urban area. Subjects are living in an urban area are more prevalent to diabetes compared with the rural area, on reason of sedentary lifestyle and higher pollutions in urban area [8].

In this study, 37.50 % of the 50-59 age group and 54.55 % of the 40-49 age group had a higher prevalence of diabetes and pre-diabetes. The prevalence of diabetes increases with age 40, so preventive measures should be

taken for the subject in the above age groups. This prevalent age limit is attributed due to poor immunity, lack physical exercise and a lot of psychosocial stress, Its due to the combined effects of increasing insulin resistance and impaired pancreatic Islet function with aging [8,5].

In this study, we observed Prediabetes prevalence (75 %) and Diabetes (81.81 %) are associated with less physical activity, this is the result of work nature and urbanization.

The family history of diabetes prevalence is 45.45 % in diabetes and 50 % in Pre-Diabetes is compared with patients with no family history, this due to genetic susceptibility.

The patient who was diagnosed with high blood pressure is only 25 % and 36 % in Prediabetes and Diabetes group and incidence of Diabetes in those with a family history of Diabetes is 50 % and 45.45 % in Prediabetes and Diabetes patients [8,5].

This study recorded more prevalence of diseases in shop owners/farmers and semiskilled Workers, they are mostly from an urban area, this prevalence may be reason of stress full environment and lack nutrient in foods [8].

In Siddha system of medicine, Theaga ilakkanam and Naadi not only helpful for diagnosis and also help in preventive measure. In this study, Kaba Pitha Theagam 37.50 % in prediabetes and 45.45 % in Diabetes, this

shows Kaba Pitha Theaga Illakanam is most prevalent Theaga Illakanm in Diabetes and Pre Diabetes patients .Excessive intake of sweet and oily foods, lack of exercise, excessive caloric ingestion , stress intolerance, excessive sleep and sedentary life style are the main causative factors found in Type II Diabetes and most of them are correlated with psychosomatic characteristics of Kabapitha body constitution ^[1] All Naadi types were observed in all group of Diabetic risk satisfied Non Diabetic Prediabetes and Diabetes.

Vatha pitha Naadi was more prevalent with Diabetes 36.36 % and 37.5 % in Pre-Diabetes Symptoms of diabetes are mentioned in Vathapitha Naadi pome in siddha literature ^[1]. So Siddha precautionary and preventive measure is advised to patients with kaba pitha theagam and vatha pitha Naadi about diabetes. All Naadi types were observed in all group of Diabetic risk satisfied Non-Diabetic Prediabetes and Diabetes.

Female patients were screened for a history of Gestational Diabetes Mellitus (GDM) no one had a history of GDM in both Diabetes and Pre-Diabetes group, this is maybe due to poor knowledge about GDM ^[9].

Body mass index BMI is 62.50 % and 63.64 % of pre-obese/overweight category is most prevalent in both Prediabetes and Diabetes patients, The prevalence of obesity causes insulin resistance and Insulin resistance with impairment of β -cell function leads to the development of diabetes, there is strong and compatible evidence that obesity management can delay the progression from Pre-Diabetes to type 2 Diabetes and is beneficial in the treatment ^[10].

About half of the Diabetic population (49.3 %) was undiagnosed in world and this fact means us the necessity of periodic screening diabetic survey among the population. American Diabetes Association recommended yearly screening for Diabetes Mellitus of subjects above 45 years and persons with Diabetic risk ^[8]. All collected data were entered into the computer using MS excel software version 2019 16.0.6742.2048 and analyzed by statistical product and services solution (SPSS) version 25.

CONCLUSION

This study indicated 4.0 % prevalence of Type 2 Diabetes Mellitus among 500 patients reported in National Institute of Siddha. The progression of old age is a

significantly higher risk of Diabetes and the existence of prediabetes is precariously increasing diabetes risk. Sedentary life, occupational stress, family history, Kaba Pitha Theaga Illakanam, Vatha Pitha Naadi are at a higher risk factors of Diabetes Mellitus. This study emphasizes the importance of Diabetic education to the risk group of the society, peculiarly to Prediabetes and Diabetes to prevent them from serious complications associated with Diabetes Mellitus.

CONFLICT OF INTEREST

None Declared

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