N.I.D.D.M. IN HOMOEOPATHIC PRACTICE

INTR ODUCTION

Diabetes mellitus is a metabolic syndrome resulting from chronic miasmatic state, which results in relative or absolute deficiency of insulin (a hormone secreted by the beta cells pancreas) and is characterized clinically by hyper-glycaemia with or without glycosuria, polyuria especially nocturia, increased appetite and thirst, muscular wasting, progressive weakness and many other systemic complications. This metabolic disorder of chronic hyper-glycaemia usually results from defects in insulin secretion, insulin resistance

About 1000 AD, Greek physicians prescribed exercise, preferably on horseback, to "employ moderate friction" and alleviate excess urination. [1]

Apollonius of Memphis probably coined the name "Diabetes" sometime around 250 BC. The literal translation, "to go through" or siphon, reflects the early understanding of a disease that drained patients of more fluid than they could consume. In the first century AD, the Greeks described the disease as "*a melting down of the flesh and limbs into urine*." Gradually the Latin word for honey, "mellitus," was appended to diabetes because of its link with sweet urine.

It wasn't until 1798 that John Rollo actually documented excess sugar in the blood as well as the urine, and about 15 years later, Claude Bernard linked diabetes with glycogen metabolism. Before the mid 1800s, treatment often consisted of bleeding, blistering, and doping, often doing more harm than good. In 1915, Sir William Osler talked about using opium for treating diabetes. Another early treatment was overfeeding to compensate for the loss of fluids and weight [2]

In 1869, Paul Langerhans, a German medical student, found islet cells in the pancreas, but he was not able to explain their function. Twenty years later, Joseph von Mehring and Oskar Minkowski learned that diabetes developed when they removed the pancreas of dogs. [3]

The search for an extract: - As soon as the link between the pancreas and diabetes was recognized research focused on treating the disease with pancreatic extracts. The most persistent and important of the early "extractors" was Georg Ludwig Zuelzer, a young internist in Berlin. In the early 1900s, Zuelzer experimented with pancreatic compounds and in fact injected a substance he called "acomatrol" into a dying diabetic patient. The patient improved but later died when Zuelzer's acomatrol supply was exhausted [4]

In 1911, a European pharmaceutical company funded a small lab and some workers to help Zuelzer, who took out an American patent on his "Pancreas Preparation Suitable for the Treatment of Diabetes." Early results were poor, however, and eventually Zuelzer's lab was turned over to the military during World War I [5]

About this time, more thought and research were going into the islets of Langerhans than any other organ or tissue of the body. Lydia Dewitt, E. L. Scott, and Anton Carlson played important roles in encouraging John James Rickard Macleod at the University of Toronto to continue to pursue his work in carbohydrate metabolism. Macleod eventually hired Frederick Grant Banting, and Banting enlisted Charles Herbert Best, a student, to assist him in experiments with pancreatic extracts in dogs. Banting and Best secured a place in history with their crude but eventually highly successful insulin. [6]

Macleod and Banting were awarded the Nobel Prize for insulin in 1923, even though most experts agree Best contributed more than Macleod. Banting eventually split his prize with Best, and Macleod split his with James

B. Collip, a biochemist who had joined the team late in 1921 and worked on development of the extract [7].

About the time insulin was being developed, treatment of diabetes was centered on starvation. Frederick Allen, the leading American diabetologist, believed that since the diabetic's body could not use food, perhaps limiting the amount of food allowed would reduce the strain.[8]

In 1940s link was made between diabetes and long-term complications of the disease diabetes mellitus. (Kidney and eye disease).

In 1944 standard insulin syringe was developed, helping to make diabetes management more uniform.

In 1969 two major types of diabetes were recognized: type 1 (insulin-dependent) diabetes and type 2 (non-insulin-dependent) diabetes.

or both. Sustained hyper-glycaemia is associated with complications in the microvasculature, macro-vasculature and nerves, causing protracted morbidity and premature mortality.

Two main categories of diabetes mellitus are distinguished, Type 1, formerly known as insulin dependent diabetes mellitus (IDDM) and Type 2 formerly known as non insulin dependent diabetes mellitus (NIDDM).9

Type 1 diabetes or insulin dependent diabetes mellitus or juvenile onset diabetes mellitus usually manifests before adulthood and accounts for 5% of all the cases of diabetes mellitus.

Type 2 diabetes mellitus formerly known as non-insulin dependent diabetes mellitus (NIDDM) or maturity onset diabetes mellitus usually manifests in later adult life and accounts for 95% of all the cases. This type of diabetes develops mostly through a combination of insulin resistance and

defective beta cell functions. This causes less severe hyperglycaemia that is not usually life threatening. However the cetalogue of chronic complications of type 2 diabetes represents a serious clinical burden eroding quality of life and reducing life expectancy.

The prevalence of type 2 diabetes is increasing all over the world particularly in the developing countries. It has emerged as a major public health problem in our country. The WHO has estimated that there are 19.4 million persons with diabetes in India, in 1995 and that the number is likely to be 57.2 million in 2025. India has the distinction of largest number of diabetics in the world. Studies in the 1980 showed the higher prevalence rate of type 2 diabetes mellitus amongst migrant Indians in several countries compared with their native population and other migrant ethnic groups.

Recent prevalence rates are 11-12% in the urban Indian adult population. There is evidence that prevalence of type 2 diabetes mellitus or non-insulin dependent diabetes mellitus is increasing in rural population also. Type 2 diabetes mellitus or non-insulin dependent diabetes mellitus amongst Indians occurs at an early age. This early age of occurrence, delayed diagnosis and improper care led to an increase in morbidity and mortality resulting in loss of productivity.

Despite the extensive research and better treatment modalities the morbidity and mortality is increasing and is a matter of concern.

As the condition type 2 diabetes mellitus or non insulin dependent diabetes mellitus is a chronic disease and affect the individual as a whole, so the homoeopathic system of therapeutics, which is based on the holistic concept can provide an efficacious therapy to control the condition. Being a homoeopathic physician our aim should not be only to bring down the blood sugar level but to take care of fundamental cause and disease process completely and not only the ultimate cause of disease.

Managing patients with the diabetes mellitus effectively requires a great deal of time, effort and patience. The task of rendering quality care to our diabetic patients is stupendous and challenging.

The main objective of this study is to find out an efficacious homoeopathic therapy in treatment and management of type 2 diabetes mellitus or non insulin dependent diabetes mellitus with reliable homoeopathic medicines with their reliable indications, an appropriate repetition schedule ..

AIMS & OBJECTIVES

1. To conduct a prospective randomized control trial on the efficacy of constitutional homoeopathic treatment in N.I.D.D.M.
2. To find out the prevalence of N.I.D.D.M. in different sex groups.
3. To find out the prevalence of N.I.D.D.M. in different socio-economic groups.
4. To find out the prevalence of N.I.D.D.M. in different nativity groups.
5. To find out the various risk factors for the development of N.I.D.D.M.
6. To compare efficacy of centesimal potency and Fifty Millesimal potency in N.I.D.D.M.
7. To prepare a comprehensive repertorial index for the management of N.I.D.D.M

MATERIALS & METHODS

SET UP

A prospective study was conducted for a period of about thirteen years between 1990 to 2003. The study was carried out at the OPDs and IPD of the attached Hospital Dr. Abhin Chandra Homoeopathic Medical College & Hospital, Bhubaneswar, Orissa. And Author's clinic.

A. DEFINITION OF THE POPULATION UNDER STUDY :

Patients presenting the features of Non Insulin Dependent Diabetes Mellitus (type 2 diabetes), attending above places were screened out for the purpose of this present study. Patients of both the sexes, different age groups, different socio-economic status, different nativity (rural/urban) and of different occupations were selected.

DIAGNOSIS -

INCLUSION CRITERIA

Patients presenting with the features of the disease or its complications as like-

- Having to urinate more often than usual
- Sudden, unintended weight loss
- Constant thirst
- Extreme hunger
- Weakness and fatigue

- Being cross or irritable
- Blurred vision or decline in sight
- Cuts that heal slowly, especially on the feet
- Frequent infections
- Tingling or numbness in legs, feet, or fingers
- Frequent skin infections or itchy skin [41]

Fasting blood sugar level equal or more than 111mg/100 ml of blood.

- Post prandal blood sugar level more than 140 mg/100 ml of blood.
- Random blood sugar level more than 200mg/100 ml of blood.

Previously diagnosed patients, with any level of glycaemia, when taking any kind of hypoglycaemic agent were also included in the study.

EXCLUSION CRITERIA:-

1. Patients, which were not taking any of the hypoglycaemic agent with -

Fasting blood sugar level less than 111mg/100 ml of blood.

Post prandal blood sugar level less than 140mg/100ml of blood.

Random blood sugar level less than 140mg/100 ml of blood.

2. Patients with any level of blood sugar presenting with following -

- Islet cell autoantibodies (ICAs)
- Autoantibodies to insulin (IAAs)
- Autoantibodies to glutamic acid decarboxylase (GAD65)
- Autoantibodies to the tyrosine phosphatases IA-2 and IA-2ß.

3. Patients presenting with hyperglycaemia (F.B.S. more than 126mg/100ml of blood and P.P. more than 200 mg/100ml of blood) during pregnancy..

4. Patients presenting with hyperglycaemia (F.B.S. more than 126mg/100ml of blood and P.P. more than 200 mg/100ml of blood) during childhood.

5. Patients presenting with one of the following -

- Genetic defects of beta cells function, e.g. MODY syndrome.
- Genetic defect in insulin action.
- Diseases of the exocrine pancreas e.g. Pancreatitis.
- Secondary to endocrinopathies e.g. Acromegaly.
- Drug or chemically induced.
- Due to infections e.g. Congenital rubella.
- Uncommon forms of immune mediated diseases e.g. Anti insulin receptor antibodies.
- Other genetic syndromes associated with diabetes mellitus e.g. Dawn's syndrome.

B. SELECTION OF THE SAMPLE-

(a) **Sample size**- To avoid any kind of sampling errors of bias a sufficiently large sample has taken for the study. In total 392 patients were chosen randomly. Out of these392 patients196 were treated by indicated constitutional homoeopathic medicines, while the other 196 patients were treated with placebo. .

(b) **Sampling method** -Patients, which were selected for the study, were treated with medicines and placebo randomly.

C. **NATURE OF STUDY -** A randomized clinical trial was conducted for the efficacy of constitutional homoeopathic medicines in the treatment of Non Insulin Dependent Diabetes Mellitus, now known as Type 2 Diabetes Mellitus.

D. **RULING OUT OBSERVERS AND INSTRUMENTAL ERROR:-** Sufficient care was taken to avoid any kind of observers or instrumental error. To avoid any kind of observers error, diagnosis of disease was done strictly on blood sugar level of the patient and in all the cases blood sugar analysis was done by trained pathologist only.

E. RECORDING OF DATA :-

For maintaining clinical profiles, cases were recorded in a standard case recording format prepared as per homoeopathic guidelines .Information regarding the history, presenting features in the past, family history as well as changes in the mind and disposition were reflected in that case recording format.

F. WORK SCHEDULE:- Clinical examination as well as laboratory investigations were incorporated into that format. Details of the treatment schedule including, dose, potency and repetition as well as details of the follow up visits with analysis were reflected in that format. This format included general management/ dietary advise etc. Finally the results of the treatment or remarks if any were recorded in this format. Besides the above mentioned information the bio-data of the patients including age, sex, residence, occupation, religion, socio-economic status, weight, waist - hip ratio and their presenting complaints were incorporated into that standard case taking format. A master chart also has been prepared incorporating all the important data..

While recording the case, more importance was given to family history, characteristic symptoms among the clinical presentation including recent changes in mind and disposition. Plasma glucose examination and other laboratory investigation were done and recorded in that case recording format.

G. DIAGNOSIS OF DISEASE:-

The cases of Non Insulin Dependent Diabetes Mellitus (type 2 diabetes mellitus) were diagnosed from nosological standpoint basing on clinical presentation as well as laboratory findings which are as follows-

- Random plasma glucose concentration more than or equal to 200mg/dl.
- Fasting plasma glucose more than or equal to 126mg/dl.
- Two hour plasma glucose more than or equal to 200mg/dl during a 75g OGTT.

Impaired fasting glucose:- It is an intermediate group with fasting plasma sugar level more than 110mg/dl but lower than 126mg/dl.

Impaired glucose tolerance:- Impaired glucose tolerance is defined as two hours post glucose levels of more than 140mg/dl but less than 200mg/dl.

Impaired fasting glucose and Impaired glucose tolerance group of individuals are important they have high risk of becoming diabetic and are prone to develop macro-vascular complications.

Clinical Features:-

- Polydypsia.
- Polyuria.
- Polyphagia.

- Weight loss.
- Weakness.
- Non healing ulcers.
- Recurrent skin infections.
- Any sign or symptom of long term complication of macro-vascular and micro-vascular diseases as explained in literature review.

H. CATEGORIZATION OF THE PATIENTS :-

All 392 patients were categorized according to the following age groups -

Age Groups:-

40 years and below.

41 years to 50 years.

51 years to 60 years.

61 years to 70 years.

71 years and above.

Patients were randomly categorized into two groups alternatively (every alternative patient belong to the same group) for first prescription as follows-

1. Patients treated with constitutional homoeopathic remedy.
2. Patients treated with placebo.

In the group of patients treated with constitutional homoeopathic remedy, for first prescription, two groups were also made i.e. patients treated with centesimal potencies and patients treated with fifty millesimal potencies. Those patients who were treated with indicated medicine in the Centesimal

potency were given 6^{th}, 30^{th}, 200^{th} , 1000^{th}, $10,000^{th}$ $50,000^{th}$ or $1,00,000^{th}$ potency. On the other hand patients who administered with indicated medicine in the Fifty Millesimal potency were started from 0/1 potency.

During the second prescription where the presenting totality during follow up, again demanded the same medicine without showing any remarkable improvement, the potency was changed without changing the medicine, keeping in view that potency was not correct. Where remarkable improvement was observed after the first prescription, either placebo was given or repetition was done as per necessity.

After first prescription, the results were assessed and analyzed, basing on both the scale of potencies for different age groups, both the sexes and of different socio-economic status within a period of 3 month to 6 months.

I. TREATMENT SCHEDULE

Selection of simillimum:-

Simillimum was selected basing on the presenting totality. Importance was given to the presenting totality, family history and any alteration in mind and disposition during selection of simillimum. Characteristic symptoms including peculiar symptoms/ recent changes in mind, disposition and physical sphere were given due credence.

Determination of dose:-

Under Centesimal scale of potencies, remedy was administered in globule form (size 20). Number of globules in a dose varied from single

globule to 4 globules as per the age of the patient. Under Fifty Millesimal scale of potencies the remedy was administered in the form of medicinal solution of the lowest degree of dynamization where it is succused ten times necessary before use. When one dose is taken in a clean glass containing seven to eight spoonful of water, then it is stirred thoroughly. From this glass one dose is taken which is the first dose. All subsequent doses are administered in this way**.**

Selection of potency:-

Potencies of the indicated medicines were selected strictly according to the instructions given by Hahnemann in sixth edition of Organon of Medicine.

Repetition Schedule:-

Repetition was done strictly according to the instructions given by Hahnemann in sixth edition of Organon of Medicine.

General Management:-

Patients were given necessary advise on diet, regimen, and other general non medicinal measures as per the need of the case as detailed in literature review.

Follow up:-

Patients were instructed to report at required intervals and they were followed up clinically and necessary laboratory investigations were done whenever required to evaluate the modality of the treatment. Laboratory

investigations were also done at the end of the treatment for the final assessment of the result.

J. PARAMETERS FOR ASSESSMENT OF CASES:-

Parameters fixed to assess the response of prescribed medicine were as follows :

Positive Responses

a) **Marked Improvement -** Complete removal of subjective symptoms and objective symptoms with reduction of blood sugar level within normal limits.

b) **Moderate Improvement** – Removal of subjective or objective symptoms with some reduction in blood sugar level, but not up to the normal limits.

c) **Mild Improvement** - Partial relief in subjective or objective symptoms or some reduction in blood sugar level.

Negative Responses-

a) **No Improvement** – No relief in subjective symptoms and objective symptoms (including blood sugar level).

b) **Dropped Out** - Patient did not stick to the treatment for sufficient period of time.

In the above parameters **"cure"** was not there as one among them, because at that time we can not declare the patient to be cured. For this, we will have to watch the patient for a very long period of time. Thus for this reason, cure was not a parameter for the assessment of the result.

OBSERVATIONS AND ANALYSIS

392 patients presenting with the features of non-insulin dependent diabetes mellitus were screened out for this study. Patients of different age groups, both the sexes, residing in different areas (rural or urban) and of different socio-economic status were taken into account for this present study. Detailed observations on those368atients are as follows: -

SEX DISTRIBUTION

TABLE - 1 SEX DISTRIBUTION

SEX GROUP	NUMBER(S)	PERCENTAGE
MALE	228	61.97%
FEMALE	140	38.13%
TOTAL	368	100%

The sex distribution as observed is shown in TABLE 1. Total number of male patients were228 (61.97%) and total number of female patients were 140(38.12%). (Fig.1)

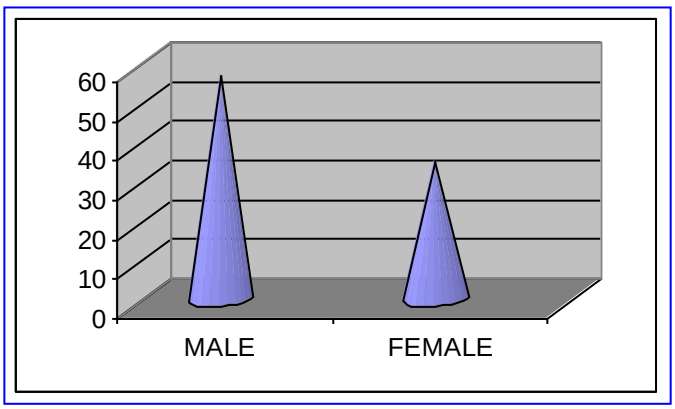

FIGURE 1 SEX DISTRIBUTION

AGE DISTRIBUTION

TABLE 2 – AGE DISTRIBUTION

AGE GROUPS	NUMBER(S)	PERCENTAGE
40 YEARS OR BELOW	**12**	**3.26%**
41- 50 YEARS	**96**	**26.08%**
51- 60 YEARS	**136**	**36.95%**
61 -70 YEARS	**108**	**29.34%**
71 YEARS OR MORE	**16**	**04.37%**
TOTAL	**368**	**100%**

The age distribution as observed is shown in TABLE-2. It has been observed that the highest number of cases belong to age group of 51 years to 60 years i.e.136 (36.96%) and lowest number of cases belong to the age group of below 40 years i.e.12 (3.282%). Total number of cases belonging to the age groups 41-50 years, 61-70 years and 71 years and onwards was (26.08%), (29.34% and (4.34 % respectively (Fig 2).

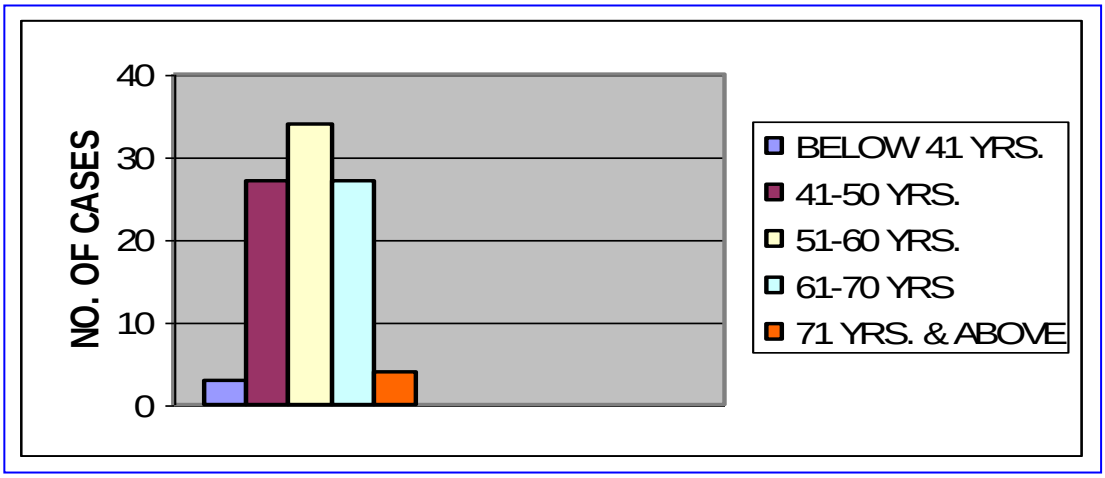

FIGURE 2 - AGE DISTRIBUTION

SOCIO-ECONOMIC STATUS DISTRIBUTION

TABLE -3 SOCIO-ECONOMIC STATUS DISTRIBUTION

SOCIO- ECONOMIC CLASS	NUMBER(S)	PERCENTAGE
UPPER CLASS	**100**	**27.18%**
MIDDLE CLASS	**232**	**63.04%**
LOWER CLASS	**36**	**9.78%**
TOTAL	**368**	**100%**

TABLE -3

The distribution according to socio economic status as observed is shown in TABLE -. 3.The highest number of patients belongs to the middle class i.e. 232 (63.04%) while the number of patients belonging to the upper class was 100 (27.18%). Total number of cases in the lower class was36 (9.78%). (Fig -3)

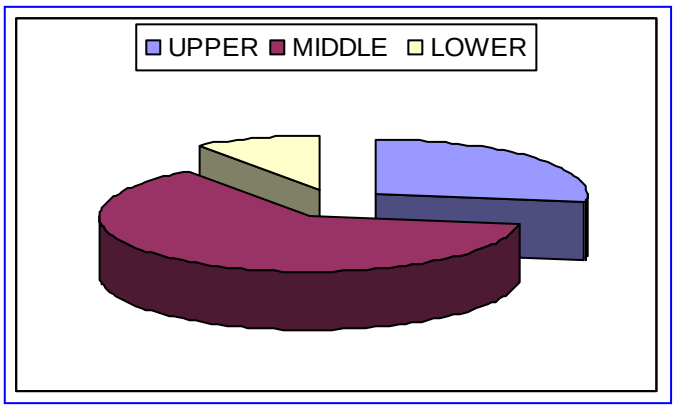

FIGURE –3 SOCIO-ECONOMIC STATUS DISTRIBUTION

DISTRIBUTION ACCORDING TO BODY MASS INDEX

TABLE -4 DISTRIBUTION ACCORDING TO BODY MASS INDEX

BMI	NUMBER(S)	PERCENTAGE
BELOW 18.5	**8**	**2.17%**
18.5-25.0	**136**	**36.95%**
ABOVE 25.0	**224**	**60.88%**
TOTAL	**368**	**100%**

Distribution according to body mass index as observed is shown in TABLE -12. It has been observed that among all 368 patients, which were included in the study, (60.88%) patients were overweight (with a BMI of more than 25), (2.17%) patients were underweight (with a BMI of less than 18.5) and (36.95%) patients had their weight within normal limits (BMI between 18.5 and 25). (Fig -4)

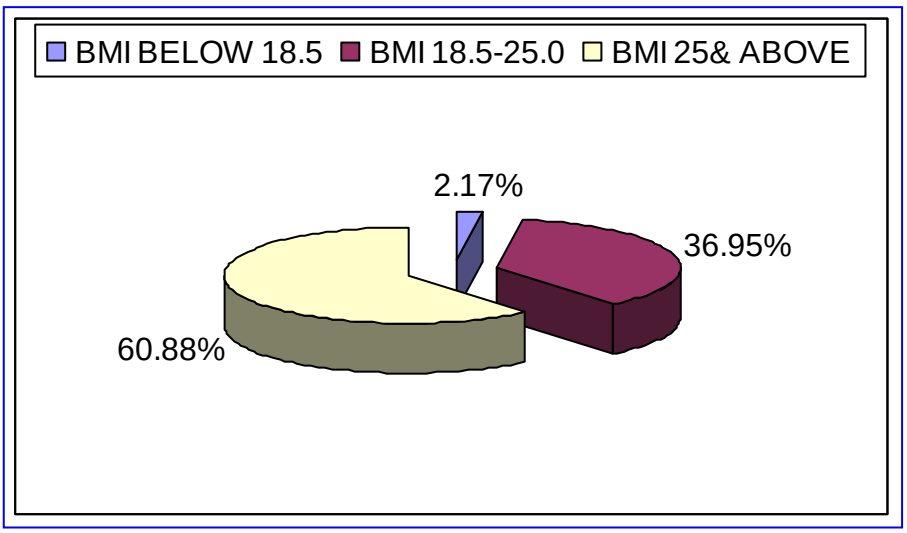

FIGURE –4 DISTRIBUTION ACCORDING TO BODY MASS INDEX

DISTRIBUTION ACCORDING TO NATIVITY

TABLE -5 DISTRIBUTION ACCORDING TO NATIVITY

NATIVITY	NUMBER(S)	PERCENT
RURAL	**148**	**40.21%**
URBAN	**220**	**59.79%**
TOTAL	**368**	**100%**

The distribution-according nativity as observed is shown in TABLE -5. Out of all 368 patients, which were included in the study, (40.21%) were the native of rural areas, while the other (59.79%) patients were the native of urban areas. (Fig.5)

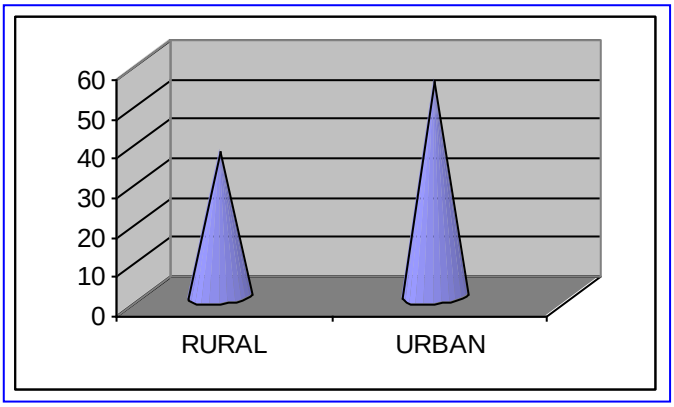

FIGURE 5- DISTRIBUTION ACCORDING TO NATIVITY

GENERAL RESPONSE OF THE TREATMENT

TABLE -6- GENERAL RESPONSE OF THE TREATMENT

GROUP	+VE RESPONSE	-VE RESPONSE	DROPPED OUT	TOTAL
TEST GROUP	76	96	12	184
CONTROL	20	124	40	184
TOTAL	96	220	52	368

General response of the treatment as observed is shown in TABLE -6. Among total 92 patients, who were included in the study, 184 were treated with indicated constitutional homoeopathic medicines and the other 184 were treated with placebo. Out of 184 patients, treated with indicated constitutional homoeopathic medicines (Test Group), 76 (41.31%) showed improvement, 96 (52.17%) showed no improvement, while the other 12 patients did not stick to the treatment for sufficient period of time. Out of another 184 patients, treated with placebo (Control Group), 20 (10.86) showed improvement, 124(67.39) showed no improvement, while the other 40 (21.75%) patients did not stick to the treatment for sufficient period of time. (Fig. -6)

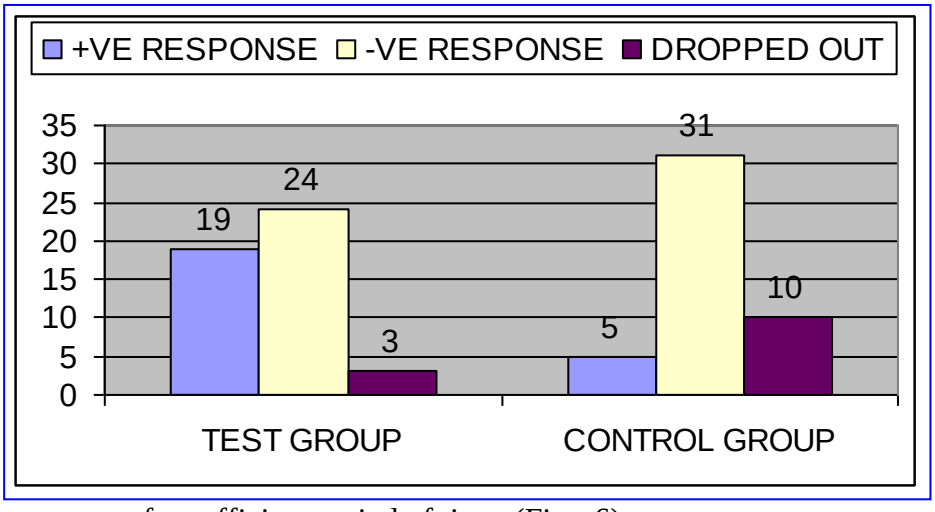

FIGURE 6- GENERAL RESPONSE OF THE TREATMENT

RESPONSE OF THE TREATMENT WITH CENTESIMAL POTENCIES

TABLE –7 RESPONSE OF THE TREATMENT WITH CENTESIMAL POTENCIES

RESPONSE	NUMBER(S)	PERCENTAGE
IMPROVEMENT	**32**	**50.00%**
NO IMPROVEMENT	**28**	**43.75%**
DROPPED OUT	**4**	**06.25%**
TOTAL	**64**	**100%**

Response of the treatment with Centesimal potencies as observed is shown in TABLE -7. It has been observed that the total number of patients who were treated with centesimal potencies was 64, among them 32 (50.00%) showed improvement, 28 (43.75%) showed no improvement and 4(6.25%) patient could not stick to the treatment for sufficient period of time. (Fig. 7)

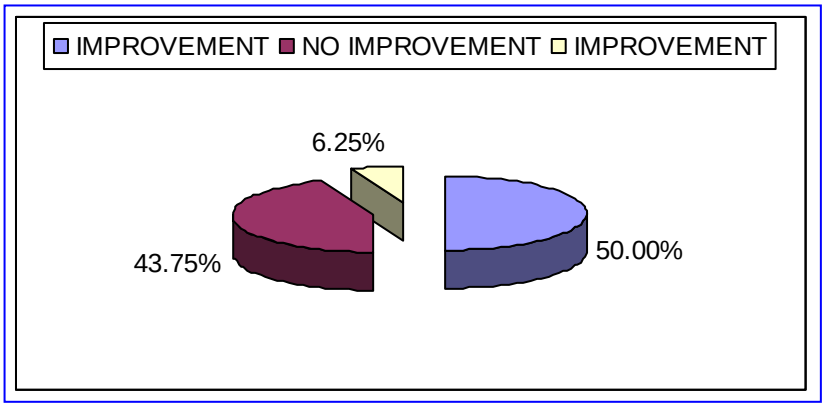

FIGURE 7- RESPONSE OF THE TREATMENT WITH CENTESIMAL POTENCIES

RESPONSE OF TREATMENT WITH 50 MILLESIMAL POTENCIES

TABLE -8 RESPONSE OF THE TREATMENT WITH FIFTY MILLESIMAL POTENCIES

RESPONSE	NUMBER(S)	PERCENTAGE
IMPROVEMENT	**44**	**36.66%**
NO IMPROVEMENT	**68**	**56.66%**
DROPPED OUT	**08**	**06.68%**
TOTAL	**120**	**100%**

Response of the treatment with Fifty Millesimal potencies as observed is shown in TABLE -8. Among the 120 cases, which were treated with Fifty Millesimal potencies, 44 (36.66%) cases showed improvement, 68 (56.66%) cases showed no improvement, while number of cases which were dropped out was 8 (06.68%) (fig. 8).

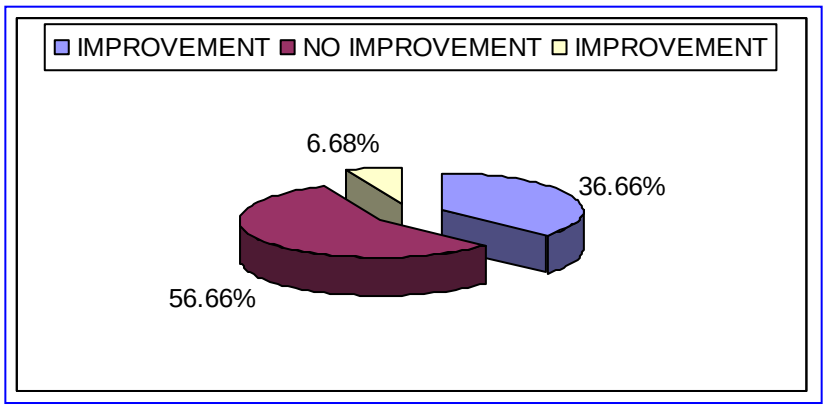

FIGURE 8- RESPONSE OF THE TREATMENT WITH FIFTY MILLESIMAL POTENCIES

COMPARISON OF IMPROVEMENT IN THE CASES TREATED WITH FIFTY MILLESIMAL & CENTESIMAL POTENCIES

TABLE –9 COMPARISON OF IMPROVEMENT IN THE CASES TREATED WITH FIFTY MILLESIMAL & CENTESIMAL POTENCIES

SCALE OF POTENCY	NUMBER(S) OF IMPROVRD CASES	PERCENTAGE
FIFTY MILLESIMAL	**44**	**36.66%**
CENTESIMAL	**32**	**50.00%**

Comparison of improvement in the cases treated with Centesimal and Fifty Millesimal potencies as observed is shown in TABLE -9. When the cases of diabetes mellitus were treated homoeopathically by the Centesimal and Fifty Millesimal potencies, improvement was observed in 32 (50.007%) patients which were treated with Centesimal potencies and in 44 (36.66%) cases, which were treated with Fifty Millesimal potencies. (Fig. 9)

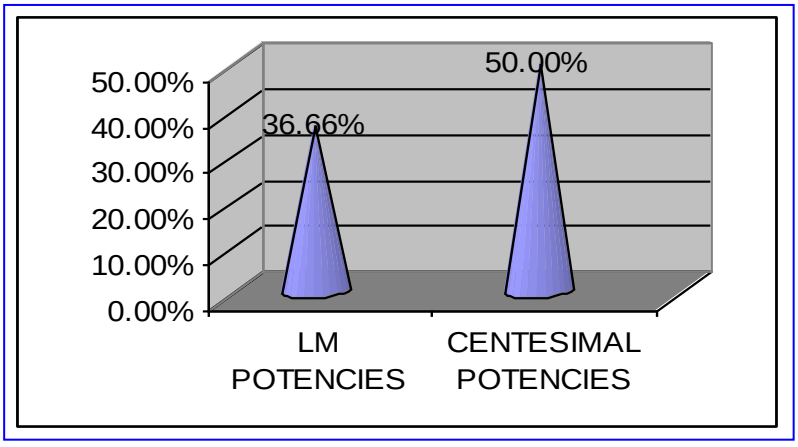

FIGURE 9- COMPARISON OF IMPROVEMENT IN THE CASES TREATED WITH CENTESIMAL & FIFTY MILLESIMAL POTENCIES

PRESCRIBED HOMOEOPATHIC MEDICINES

TABLE -10 PRESCRIBED HOMOEOPATHIC MEDICINES WITH NUMBER OF IMPROVED CASES

PRESCRIBED MEDICINES(S)	NUMBER OF IMPROVED CASES	PRESCRIBED MEDICINES(S	NUMBER OF IMPROVED CASES
Sulphur	20	Silicea.	4
Natrum mur.	8	Argentum nit.	4
Calc. Carb.	8	Acid phos.	4
Natrum sulph.	8	Causticum.	4
Mercurius.	8	Sepia.	4
Lycopodium.	4		

Medicines, which were prescribed and found to be effective, are shown in TABLE -10 with number of improved cases. Out of all 184 patients, which were included in test group and were treated with homoeopathic medicines, 76 (41.30) showed improvement. Out of those 76 improved cases 20 showed improvement with sulphur, 8 with Natrum mur. 8 with Natrum sulph., 8 with Calc. carb. 8 with Mercurius and four cases each with Lycopodium, Silicea, Argentum nitricum, Acid phos., Causticum and Sepia (Fig. 10).

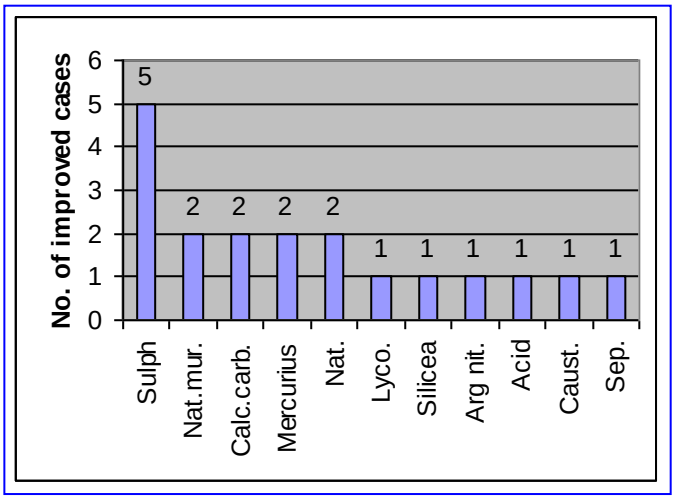

FIGURE10- EFFECTIVE HOMOEOPATHIC MEDICINES

STATISTICAL ANALYSIS

In this experiment it has been observed that among total 368 patients, which were included in the study, 184 were treated with indicated constitutional homoeopathic medicines and the other 184 were treated with placebo. Out of 184 patients, treated with indicated constitutional homoeopathic medicines (Test Group), 76 (41.31%) showed improvement, 96 (52.17%) showed no improvement, while the other 12 patients did not stick to the treatment for sufficient period of time. Out of another 184 patients, treated with placebo (Control Group), 20 (10.86) showed improvement, 124(67.39) showed no improvement, while the other 40 (21.75%) patients did not stick to the treatment for sufficient period of time.

GROUP	IMPROVEMENT	NO IMPROVEMENT	TOTAL
TEST GROUP	76	96	184
CONTROL	20	124	184
TOTAL	96	210	368

Results obtained above were processed for Chi-Squire test.On referring the χ^2 table, as 1 degree of freedom the value of χ^2 under probability of 0.05 is 3.84, while the calculated value of χ^2 is 8.99, which is much higher than tabular value. Hence

alternative hypothesis of significant difference is accepted and null hypothesis or hypothesis of no difference is rejected. In other words we can say that there is a significant difference in the results test group and control group.

COMPARISON OF IMPROVEMENT IN THE CASES TREATED WITH FIFTY MILLESIMAL & CENTESIMAL POTENCIES

When the cases of diabetes mellitus were treated homoeopathically by the Centesimal and Fifty Millesimal potencies, improvement was observed in 08 (50.007%) patients which were treated with centesimal potencies and in 44 (36.66%) cases, which were treated with fifty millesimal potencies.

TABLE- COMPARISON OF IMPROVEMENT IN THE CASES TREATED WITH CENTESIMAL &FIFTY MILLESIMAL POTENCIES

Results obtained were processed forChi-Squire test.On referring the χ^2 table, as 1 degree of freedom the value of χ^2 under probability of 0.05 is 3.84, while the calculated value of χ^2 is 0.64, which is much lower than tabular value. Hence null hypothesis is accepted..Hence there is no difference between two results In other words we can say that there is no significant difference in the results obtained in two potencies.

DISCUSSION

The prevalence of type 2 diabetes is increasing all over the world particularly in the developing countries. It has emerged as a major public health problem in our country. Despite the extensive research and better

treatment modalities the morbidity and mortality is increasing and is a matter of concern.

As the condition type 2 diabetes mellitus or non-insulin dependent diabetes mellitus is a chronic disease and affect the individual as a whole, so the homoeopathic system of therapeutics, which is based on the holistic concept can provide an efficacious therapy to control the condition.

The main objective of this study is to find out an efficacious homoeopathic therapy in treatment and management of type 2 diabetes mellitus or non insulin dependent diabetes mellitus with reliable homoeopathic medicines with their reliable indications, an appropriate repetition schedule .

.

.

Non-insulin dependent diabetes mellitus may be regarded as disease of late adult life and elderly population. It has been observed that the highest number of cases belong to age group of 51 years to 60 years i.e. (36.96%) and lowest number of cases belong to the age group of below 40 years i.e. (3.282%). Total number of cases belonging to the age groups 41-50 years, 61-70 years and 71 years and onwards was (26.08%), (29.34% and (4.34 % respectively It validates the observations of Harris that the incidence of non insulin dependent diabetes mellitus is related with increasing age.

According to *F. Azizi*, distribution pattern of diabetes shows higher rates among people of developing countries, and in lower socio-economic group of more developed countries, whereas the present study reveals that in present region of Orissa, India, middle and upper class population is the main victim of the disease. The highest number of patients belongs to the middle class i.e. (63.04%) while the number of patients belonging to the upper class was (27.18%). Total number of cases in the lower class was only (9.78%). So

it can be assessed that upper and middle class population of Orissa is more prone to develop type non insulin dependent diabetes mellitus.

The present study proves that increasing weight and obesity are directly related to non-insulin dependent diabetes mellitus. It has been observed that among all368pts, which were included in the study, (60.88%) patients were overweight (with a BMI of more than 25), (2.17%) patients were underweight (with a BMI of less than 18.5) and only (36.95) patients had their weight within normal limits (BMI between 18.5 and 25). So the present study confirms the findings of Ramachandran A, Snehalatha C, Latha E, Vijay &, Viswanathan M. of relation of increased weight, and BMI to non insulin dependent diabetes mellitus.

Out of all 368patients, who were included in the study, (40.21%) were the native of rural areas, while the other (59.79%) patients were the natives of urban areas, with a ration of urban/rural of 1.61, which is slightly more than the ration of urban to rural population i.e. 1.38 according to WHO, World Health Report 1997. The same has to be judged with a fairly large sample.

Among total patients, which were included in the study, 168 treated with indicated constitutional homoeopathic medicines and the other 168 treated with placebo. Out of 168patients, treated with indicated constitutional homoeopathic medicines (Test Group), (41.31%) showed improvement, (52.17%) showed no improvement, while the other patients did not stick to the treatment for sufficient period of time. Out of another patients, treated with placebo (Control Group), (10.86) showed improvement, (67.39) showed no improvement, while the other (21.75%) patients did not stick to the treatment for sufficient period of time. Although there seems to be difference between the results of treatment between two groups, but to confirm it Chi Square (χ^2) test is applied. On calculation of (χ^2) and on referring the $\chi^{2\ table}$,

as 1 degree of freedom, the value of χ^2 under probability of 0.05 is 3.84, while the calculated value of χ^2 is 8.99, which is much higher than tabular value. Hence alternative hypothesis of significant difference is accepted and null hypothesis or hypothesis of no difference is rejected. In other words we can say that there is a significant difference in the results of test group and control group and that difference is due to constitutional homoeopathic treatment. So we can say that constitutional homoeopathic treatment can undoubtedly help in the management of the patients suffering from non-insulin dependent diabetes mellitus.

. Both the scales of potencies or we can say that both the types of potencies are equally effective in the management of the patients suffering from non-insulin dependent diabetes mellitus.

Out of all the drugs Sulphur emerged as the most efficacious drug.

-

SULPHUR

Symptoms	**Frequency of appearance**
Hot patient.	20
Desire for sweets.	20
Thirst profuse.	16
Wound healing delayed	12
Desire for warm food.	12
Stool early morning.	11
Laziness	11
Burning palms and soles.	11
Appetite ravenous.	10
Dreams vivid	10

NATRUM-MUR.

Symptoms	**Frequency of appearance**

Hot patient.	8
Desires salt.	8
Sweat from palms and soles.	8
Appetite increased.	8
Thirst profuse.	8
Obsessive behavior	8
Constipation.	7
Desire to be alone.	6
Consolation<	6
Fear of robbers.	4
Desires bitter.	4

CALC-CARB.

Symptoms	Frequency of appearance
Chilly patient.	8
Desires aggs.	8
Sweat from palms and soles.	8
Constipation.	8
Tendency to take cold.	8
Obesity	8
Forgetfulness.	4
Perspiration profuse	4

MERCURIUS

Symptoms	**Frequency of appearance**

Reacts severely to extremes of temperature	**8**
Tendency to anger	8
Dissatisfied	8
Night aggravation	8
Desires butter	**4**

CONCLUSION

“

In recent years Non Insulin Dependent Diabetes Mellitus has posed a serious threat to humanity because of its magnitude and prevalence. It is understood that every 7^{th} adult is diabetic. Complications can extend to various problems like retinopathy, nephropathy, neuropathy etc. resulting into increased morbidity and mortality.

It is concluded that there is ample of scope in Homoeopathy for Non Insulin Dependent Diabetes Mellitus with constitutional homoeopathic medicines, which was established statistically to convince the scientific world in general and medical world in particular, that constitutional homoeopathic medicines do act curatively in combating and controlling the said disease.

Non-insulin dependent diabetes mellitus may be regarded as disease of late adult life and elderly population.

On the basis of present study it has been assessed that both the types of potencies are equally effective in the management of the patients suffering from non-insulin dependent diabetes mellitus.

With this present study it is ascertained that following medicines are regarded as most effective in the treatment of non insulin dependent diabetes mellitus-

- Sulphur.
- Natrum mur.
- Calc carb.
- Mercurius.

The above conclusions are based on the results obtained from the study. This study can be undertaken on a more extensive basis with a large number of patients to have a greater grasp of the subject.

BLIOGRAPHY

1,2,5, - HISTORY, Diabetes Forum, Gopi memorial Hospital, Salem, Tamilnadu, India.

3,4,6,8 - The History of Diabetes, Canadian Diabetic Association

7,9,10 - Joan MacCracken, From ants to analogues, Puzzles and promises in diabetes management, VOL 101 / NO 4 / APRIL 1997 / POSTGRADUATE MEDICINE

.

11 - Hahnemann S, The Chronic Diseases, B. Jain Publ. Pvt. Ltd. Reprint edition-1993, Page- 214.

12 - Zandwoort R. V., The Complete Repertory, Hompath Classic, 8.0 version.

13 - Murphy R., Homoeopathic Medical Repertory, IBPS, reprint 2002.

14 - Gentry's Repertory , Hompath Classic- Version 8.0.

15 - Knerr's Repertory, Hompath Classic- Version 8.0.

- ********