CHAPTER - 2

DIABETES

1. Introduction

Diabetes is a life-long disease marked by high levels of sugar in the blood circulation. Diabetes commonly known as having Sugar Diabetes or Madhumeh in Hindi.

It is a disease in which the body either does not produce enough insulin or is unable to use the insulin the way it should be. Insulin is a hormone produced in the pancreas, that helps the body to convert the glucose into energy.

Maintaining an ideal body weight and an active lifestyle may prevent the onset of type 2 diabetes. Currently there is no way to prevent type 1 diabetes.

[http://health.nytimes.com/health/guides/disease/diabetes/overview.html,

2. DIABETES: meaning and definitions

According to Medicines health

Diabetes: Diabetes mellitus and diabetes insipidus share the name "diabetes" because they are both conditions characterized by excessive urination.

The term diabetes was coined by Aretaeus of Cappadocia. It was derived from the Greek diabainein, itself formed from the prefix dia-, "across, apart," and the bainein, "to walk, stand." The verb diabeinein meant "to stride, walk, or stand with legs asunder"; hence, its derivative diabētēs meant "one that straddles," or specifically "a compass, siphon." The sense "siphon" gave rise to the use of
diabētēs as the name for a disease involving the discharge of excessive amounts of urine. Diabetes is first recorded in English, in the form diabete, in a medical text written around 1425. In 1675, Thomas Willis added the word mellitus, from the Latin meaning "honey", a reference to the sweet taste of the urine. This sweet taste had been noticed in urine by the ancient Greeks, Chinese, Egyptians, and Indians.¹


3. TYPES OF DIABETES:

(3.1) INSULIN DEPENDENT DIABETES.

(3.2) NON-INSULIN DEPENDENT OR MATURITY ONSET DIABETES.

(3.3) GASTATIONAL DIABETES.

3.1. INSULIN DEPENDENT DIABETES.

It is usually diagnosed in childhood. The body makes little or no insulin, and daily injections of insulin are needed to sustain life. It started before age 30 and in children before age 13, but many acquire at any age, it accounts for 10% of cases of diabetes.

3.2. NON-INSULIN DEPENDENT OR MATURITY ONSET DIABETES.

It is estimated that 20.8 million people in US or 7% of the population has diabetes. Nearly 1/3 are unaware of it and are undiagnosed.

Throughout the world, estimated is 150 million people have diabetes.

80 to 90% have type 2 diabetes.

3.3. GASTENSIONAL DIABETES:

It is high blood glucose that develops at any time during pregnancy in a woman who does not have diabetes.


4. SYMPTOMS:

- Frequent urination
- Excess thirst
- Extreme hunger or constant eating
- Unexplained weight loss
- Presence of glucose in the urine
- Tiredness or fatigue
- Changes in vision
- Numbness or tingling in the extremities
- Slow-healing wounds or sores
- Abnormal high frequency of infection (as shown in fig.1,2)

Always tired

Blurred vision

Numbness and tingling of feet

Wounds that won't heal

Infections

Fig. 1

Fig. 2

Key to Line Color
- causes
- produces
5. Risk Factors:

There are many risk factors for diabetes, including:

- A parent, brother, or sister with diabetes
- Obesity
- Age greater than 45 years
- Some ethnic groups (particularly African Americans, Native Americans, Asians, Pacific Islanders, and Hispanic Americans)
- Gestational diabetes or delivering a baby weighing more than 9 pounds
- High blood pressure
- High blood levels of triglycerides (a type of fat molecule)
- High blood cholesterol level
- Not getting enough exercise


6. Complication of diabetes:

6.1. Heart disease.

Evidence of CHD in 7.5% - 20% of diabetes patients

>45 years old in the US

-55% of deaths in diabetes patients are caused by cardiovascular disease

5-year average cost of surviving acute MI >$51,000

Stroke occurs 2X - 4X more often in diabetes patients.
6.2. **Vision problem, potentially blindness.**

- It is estimated that retinopathy affects 80%-97% of patients with diabetes of > 15 years’ duration

- Diabetes is the leading cause of new cases of blindness in adults

- Diabetes retinopathy accounts of blindness for working-age adult is estimated at $12,769 per year

6.3. **Kidney disease leading to kidney failure.**

- 27,8571 new cases of ESRD in diabetes patients in 1995

  - 40% of all new cases in the US

- Nearly 99,000 diabetes patients required dialysis or kidney transplantation that year

  - Annual cost of ESRD:

    - $45,000 in diabetes patients ages 45-64

6.4. **Poor circulation.**

6.5. **Neuropathy.**

[http://www.rchr.com/wellness/LinkClick.aspx?fileticket=q10tClnedI%3D&tabid=481&mid=1181]

7. The World Health Organisation (WHO):

It estimated that there are 135 million diabetic individuals in the year 1995 and it has projected that this number would increase to 300 million by the year 2025.
also declared that diabetes had reached epidemic proportions and predicts that most of the increase will be contributed by developing countries.

Diabetes type 1 is accompanied with idiopathic or autoimmune insulin deficiency and constitutes 5-10% of all diabetic cases. Diabetes type 2 is characterized with insulin resistance and its relative deficiency and constitutes 90-95% of cases. Gestational diabetes affects 3-5% of all pregnancies.

In young people (less than 40 years), prevalence of diabetes type 1 is less than 0.3%. Type 2 has prevalence around 2-3% among people aged 40 or older. The prevalence increases with age. Annual incidence of type 1 diabetes in the world is 0.8 to 50/100000. The rate shows an upward movement.

8. Diabetes in India:

In India it is estimated that presently 19.4 million individuals are affected by this deadly disease, which is likely to go up to 57.2 million by the year 2025. The reasons for this escalation are due to changes in lifestyle, people living longer than before (aging) and low birth weight could lead to diabetes during adulthood. Diabetes related complications are coronary artery disease, peripheral vascular disease, neuropathy, retinopathy, nephropathy, etc. People with diabetes are 25 times more likely to develop blindness, 17 times more likely to develop kidney disease, 30-40 times more likely to undergo amputation, two to four times more likely to develop myocardial infarction and twice as likely to suffer a stroke than non-diabetics.
9. Conclusion:

Prevalence of diabetes is increasing globally. India have the maximum increase during the last few years. Type 2 diabetes mellitus is the commonest form of diabetes. Prevalence of impaired glucose tolerance is also high in the urban population. The important risk factors for high prevalence of diabetes include: High familial aggregation, obesity specially central one, insulin resistance and lifestyle changes due to rapid urbanisation. Lifestyle modifications, inclusive of dietary modification, regular physical activity and weight reduction are indicated for prevention of diabetes.
References


6. [http://www.rehr.com/wellness/LinkClick.aspx?fileticket=q10tClnedI%3D&tabid=481&mid=1181]

7. [http://www.pgmee.org/articles_Postgraduate_Medical_Eottage_Examination.htm]

8. [http://www.pgmee.org/articles_Postgraduate_Medical_Eottage_Examination_on.htm]