

MEDICINE **UPDATE**

Continuing Medical Education

Diabetes & its **COMPLICATIONS**



Dr. Brij Mohan Makkar

MD, FIAMS, FICP, FRCP(Glasg), FACP(USA),
FACE(USA), FRSSDI

Diabetologist & Obesity Specialist
Course Director - Cleveland Clinic Advanced
Certificate Course in Diabetes
Diabetes & Obesity Centre, Paschim Vihar,
New Delhi – India

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Program Information

CME objectives

1. Updation on conventional and emerging concepts related to natural history and pathophysiology and progression of diabetes
2. Updation on the current diagnostic and management approach for diabetes
3. Updation on potential complications, which may arise due to poorly-controlled diabetes.

Target participants

Physicians/Diabetologists/Endocrinologists

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Method of participation in the CME

- Enroll for the program by filling enrollment form
- Receive the program module containing complete CME with post-test questions
- Study all parts of the educational activity
- Complete the questions and submit your answers
- Get a Medicine Update CME Certificate (on scoring 60% or above).

CME activity

Start Date : 1st August 2019

End Date : 31st October 2019



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Diabetes & its Complications

DIABETES: BURDEN ACROSS THE GLOBE AND IN INDIA

Diabetes is a complex chronic metabolic disorder primarily known to affect the glucose homeostasis in human body.¹ Type 2 Diabetes is characterized by presence of chronic hyperglycemia, which occurs because of an underlying insulin resistance and defective insulin secretion. Often, a large number of patients with type 2 diabetes remain asymptomatic, and hence the disease frequently remains undetected for several years until advancing to late stage and resulting in complications along with increased healthcare cost and burden.

In last few decades, the prevalence of diabetes has rapidly risen at an alarming rate, because of which it has reached epidemic levels worldwide; making it a pre-eminent global health challenge.^{2,3} Such a tremendous escalation in the prevalence of diabetes, mainly type 2 diabetes, may be attributable to changing lifestyle of the people coupled with a rising prevalence of obesity. Latest data given by the International Diabetes Federation (IDF) estimates that 425 million people worldwide are diabetic and the prevalence is likely to rise by 48% to reach an estimate of 629 million by the year 2045 (figure 1).^{4,5} Furthermore, the data suggests that 4 out of 5 people with diabetes live in low and middle-income countries, and that almost half of people with diabetes do not know that they have diabetes.^{4,6} Type 2 diabetes is the major contributor in this rising burden of diabetes, as it accounts for approximately 95% of all cases of diabetes, with growing incidence reported in developing countries.⁷ These figures clearly provide an estimate of the

escalating prevalence of diabetes, and consequent public health threat and economic impact on the healthcare system; thereby reinforcing the need for employing effective interventions for early diagnosis and management of diabetes.⁸

DEVELOPMENT AND PROGRESSION OF TYPE 2 DIABETES

There are several host and environment related risk factors, like genetic susceptibility, obesity and lack of physical activity, which contribute to decreased insulin sensitivity in individuals and predispose them to develop diabetes. In the initial phase of the disease development, pancreatic islet cells adapt to the increasing insulin resistance by increasing the pancreatic beta-cell mass and enhancing their function, thereby causing a state of compensatory hyperinsulinemia. The insulin resistance is thus offset by a sufficient release of insulin from beta-cells, and hence the body maintains glucose homeostasis with glucose tolerance remaining normal. However, when beta-cells are continuously challenged by increasing insulin resistance, they fail to adequately compensate for the degree of insulin resistance, thereby resulting in development of impaired glucose tolerance (IGT). As such, there is a sequential increase in the plasma glucose concentration, first postprandial and then fasting, leading to overt diabetes. It is now well-recognized that beta-cell failure presents much earlier in the course of disease, and is well advanced by the time there is clinical recognition of the overt diabetes.^{9,10} In fact, evidence suggests that by the time of clinical diagnosis