Prevention of Type 2 Diabetes and Treatment of Pre-Diabetes

This department covers selected points from the 2007 Endocrine Update: A CME Day from the Division of Endocrinology and Metabolism at McMaster University and the University of Western Ontario.
Program Chairs: Aliya Khan, MD, FRCPC, FACP, FACE and Terri Paul, MD, MSc, FRCPC

Report by Sultan Chaudhry of a talk given by Hertzel C. Gerstein, MD, MSc, DABIM, FRCPC

Type 2 diabetes mellitus (T2DM) is a metabolic disorder characterized by hyperglycemia and has been associated with multiple chronic consequences. Some of the major concerns include:

- Macrovascular complications including stroke, CV disease and peripheral vessel disease
- Microvascular complications of nephropathy, retinopathy and neuropathy
- Other complications including liver cirrhosis, non-vertebral fractures
- Depression and cognitive decline
- Early death

Pre-diabetes is defined by intermediate blood glucose levels that are higher than normal but not high enough for a diagnosis of diabetes. It can also be referred to as impaired glucose tolerance (IGT) or impaired fasting glucose (IFG). Although almost everyone who develops T2DM had pre-diabetes, not all cases of pre-diabetes progress to diabetes.

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There is now scientific evidence to prove that T2DM can be prevented. The benefits of diet and exercise in reducing the risk of T2DM are well established. Treatment of pre-diabetes can also delay or prevent the onset of T2DM.

The Diabetes Reduction Assessment with Ramipril and Rosiglitazone Medication (DREAM) trial was an international landmark trial of pharmacological intervention for diabetes prevention in high-risk patients. This trial consisted of 5,269 participants with IGT or IFG who were treated with rosiglitazone (a thiazolidinedione), ramipril (an ACE inhibitor), a combination of both drugs, or placebo. It found that therapy with rosiglitazone, when combined with a healthy diet and physical activity, can reduce the risk of developing T2DM by 62% compared with placebo and promoted regression of IFG/IGT to normal by > 70%; ramipril promoted regression to normal by > 17%.

Whether prevention of T2DM also reduces its consequences remains unknown. Dx

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