

NEWSLETTER



Monthly Diabetes Educator

A forum for diabetes educators, dietitians and other health care professionals with interest in diabetes.

Aims:

To provide, facilitate and promote education for prevention and management of diabetes and its complications.

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National Diabetes Survey of Pakistan 2016 - 2017

By Prof. Abdul Basit

According to the International Diabetes Federation (IDF) Atlas 2003, 194 million people worldwide were suffering from diabetes and were expected to increase to 333 million by 2025. But IDF Atlas 2015 revealed that prevalence of diabetes had already risen to 415 million and this number will increase to 642 million by 2040.

In Pakistan, we had the National Diabetes Survey conducted during 1994-1998 showing prevalence of diabetes as 8.7%. Since then no national data was available. Hence, we conducted the 2nd National Diabetes Survey of Pakistan (NDSP) 2016-2017 with the joint collaboration of Ministry of National Health Services Regulation & Coordination (MoNHSRC), Pakistan Health Research Council (PHRC), Diabetic Association of Pakistan (DAP) and Baqai Institute of Diabetology & Endocrinology (BIDE). Ethical approval was obtained by National Bio-Ethics Committee (NBC) Pakistan.

Pakistani nationals, aged 20 years or more were included, whereas, pregnant and those who refused to participate were excluded from the NDSP. An estimated sample size of 10697 was calculated by probability sampling design. Multistage, stratified sampling technique was used in this survey. Seventeen teams from all over Pakistan were involved in the survey. The teams were trained to identify households, filling in the questionnaire, anthropometric measurements and blood samples collection and transportation. Fasting and post 75 gm glucose load, 2 hours random blood glucose were done. Fasting lipid profile and HbA1c samples were collected.

Waist circumference, body mass index and blood pressure measurements were undertaken. The results are staggering. The prevalence of diabetes is 26.4% including 19.2% known diabetics and 7.1% newly diagnosed diabetics. Compared to the prevalence rate 20 years ago, it is a threefold rise. Similarly hypertension prevalence is found to be 52.6%, people with known hypertension 27.6% and undiagnosed cases 24.9%. Dyslipidemia as per ATP III criteria is present in 93.7%. Overweight and obesity according to WHO criteria is 62.1% and 47.5% respectively but rises to 76.2% and 62.1% respectively if the Asian cutoffs are used.

The NDSP article has been published in BMJ and PHRC has been notified of the results. Multiple stakeholders are defining strategies to combat this huge epidemic in low resource country of Pakistan.



Type 3c Diabetes

By Dr Saif ul Haq

Type 3c diabetes (commonly known as Pancreatogenic diabetes) is not very uncommon in presentation. It is a form of diabetes that is still under the area of high research and is not well known as compared to other types of diabetes like Type 1 diabetes, Type 2 diabetes and gestational diabetes. Type 3c diabetes commonly involves the exocrine and digestive functions of the pancreas.

The prevalence of this type of diabetes is around 5–10%. Chronic pancreatitis seems to be the most common cause as it is found in around 80% of people suffering from this type of diabetes.



Complications:

The complications are not much different than the type 1 and type 2. They include same microvascular and macrovascular complications, including, retinopathy, nephropathy, neuropathy, cardiovascular disease and stroke.

Patients of type 3 C are advised to follow the same risk reduction guidelines as other type of diabetes and keep blood sugars level under same criterion as of other types of diabetes to avoid any further complications.

Diagnostic Criteria for T3cDM

Major criteria (all must be fulfilled):

- Presence of exocrine pancreatic insufficiency (according to monoclonal fecal elastase-1 or direct function tests).
- Pathological pancreatic imaging: (by endoscopic ultrasound, MRI, or CT)
- Absence of T1DM-associated autoimmune markers (autoantibodies).

Minor Criteria:

- Impaired β -cell function
- No excessive insulin resistance (e.g. as measured by HOMA-IR).
- Impaired incretin (e.g. GIP) or pancreatic polypeptide secretion.
- Low serum levels of lipid (fat) soluble vitamins (A, D, E, or K).

Management

The condition can be managed by many factors.

- Lifestyle Modifications.
- Alcohol, smoking and other toxins responsible for pancreatic inflammation should be avoided. Diet high in fibres is advised to be the intake with normal amount of fat consumption.
- Pancreatic enzymes replacement therapy is considered in patient having frequent diarrhoea and abdominal upset.
- Vitamins especially sufficient levels of Vitamin D can reduce the symptoms and helpful in fighting the progress of the disease.

Medications

Insulin remain the mainstay of treatment as patients of type 3c are usually young, thin and lean adults having gastrointestinal discomforts,

leaving oral agents as second line of management. If sugar levels are moderately high, oral treatments can also be part of management in the form of metformin or sulphonyureas.

Insulin Adjustment by Computer Assistance

By Mansoor Ahmed Siddiqui

The pancreas is a leaf like organ situated behind the stomach which makes a hormone called insulin, it permits our body to use sugar (glucose) from carbohydrates in the diet that we eat for energy or to store glucose for emergency situation when energy is needed. The amount of protein and fat should be watched out because they also need more insulin while achieving optimal glycemic control. Insulin keeps our blood sugar level from getting too high (hyperglycemia) or too low (hypoglycemia). Pancreas in people with diabetes doesn't make enough insulin for body use, especially in the case of Type 1 diabetes where beta cells in the pancreas are destroyed thus very less or no insulin is produced. Therefore, these people will need external insulin through injections to allow their body to process glucose and avoid complications from hyperglycemia.



In the era of technology few microprocessor-based devices have been invented, which can assist individuals with diabetes in the adjustment of insulin therapy. These computer devices are very lightweight and can receive, store, and analyze patients' capillary blood glucose (CBG) data on continuous basis. Their system is based on the intelligent algorithms, these algorithms are designed to bring the premeal CBG levels to any desired target value set by the physician. The first algorithm was developed in 1981 by Skyler. In 2017 US Food and Drug Administration (FDA) has indicated it as a Class II medical device Insulin Algorithms' decision-support software, it is helpful for clinicians to manage insulin for diabetes

treatment. Through this algorithm, clinicians can easily regularly analyze a patient's blood sugar measurements and quickly optimize their insulin regimen. This algorithm is clinically proven to lower HbA1c even in challenging people with diabetes, no matter what insulin regimen they are on. This makes it possible to achieve better health outcomes, save billions of dollars in annual health care spending, and reduce rates of diabetes-related complications. These types of devices may be helpful for people with type 1 diabetes in Pakistan too, if they could be made available at affordable cost.

Diabetes - Lifestyle modification

By Muhammad Qutubuddin

Diabetes is a serious and complex condition. Diabetes can have a significant impact on your quality of life and life expectancy, but with daily self-care and effective management, you can live healthy and normal life. Modifying behavioral and lifestyle factors are the key to managing Type 2 diabetes and to reduce the risk of developing co-morbidities. Carrying excess weight around the waist, insufficient physical activity and unhealthy diet, are the major causes of uncontrolled diabetes. Type 1 diabetes also demands a constant, tedious balancing act of insulin, physical activity, and healthy eating.

What can we offer people living with diabetes?

For people living with diabetes, daily exercise can improve health and keep glucose level in target ranges. Over 80% of glucose is burned by muscle. Insulin resistance can be counted as most important factor associated with development of pre-diabetes and type 2 diabetes. To reverse skeletal muscle insulin resistance, a combination of aerobic activities five days a week and strength training at two to three



times a week can provide good glycemic and health outcomes. Strength training includes resistance tubing exercises or using dumbbells can also be beneficial.

Exercise is the best medicine

Exercise helps increase muscle glucose uptake; improve insulin sensitivity in muscle, fat, and liver; reduce Cardio Vascular Risk factors (BP, cholesterol, A1c); maintain optimal weight and weight loss; strengthen muscle; improve physical mobility. Moreover, exercise decreases depression, comorbidities and complications, and overall health care cost not just for the person with diabetes but also reduce the burden from health care system.

Refresher Training Courses in footwear for people with diabetes

By Dr. Asmat Nawaz

Under the project "Footwear for Every Diabetic", Refresher Training Courses were conducted at six project centers, across the country. The footwear team of each center comprising of many members was trained. The current skills and the knowledge of the teams regarding the foot care, the risk assessment, prescription of footwear according to the risk category, taking accurate measurements and

size, manufacturing of different parts of the footwear and incorporating the required modifications, were thoroughly assessed.



Their errors and mistakes were corrected. Wherever, required detailed explanations and demonstrations, were given.



Students of Diabetes Education

By Amna Mansoor

A diabetes educator is a health care professional whose aim is to help individuals promote behavior changes and improve health. After being diagnosed with diabetes, patients often go into panic and depression, specifically, when patients are suggested by the doctor to use insulin routinely. The educator's task is to relieve stress and fear in persons through counseling, and remove insulin phobia by teaching self-injecting techniques which include properly injecting in subcutaneous areas, such as the outer area of the thigh, arm, buttocks, and in abdomen 2 inches away from naval. As per international standard insulin syringe or insulin pen needles should be changed each day but in Pakistan because of the high ratio of poverty and low purchasing power, most patients

cannot afford to change the needle on daily basis. To deal with the issue the educator advises them to change needles every 3 days. Some people have trepidation about injections, which results in significant distress and impairment in their functioning. This is commonly known as needle phobia. Individuals with needle phobia need to have psychological support which they can attain through educators' counseling in an effective way. Patients with type 2 diabetes are often advised to take medications on time to prevent hyperglycemia and hypoglycemia. Diabetes educator plays a vital role to diminish anxiety and apprehension from patients through counseling and make them aware of diabetic complications such as neuropathy, nephropathy, retinopathy, cardiovascular disease. To prevent complications recommendations on SMBG, self-monitoring of blood glucose, as per standard guidelines are thoroughly provided

diabetes management, which helps the educator and the doctor to understand the person's condition between two follow-up visits and helps them adjust treatment effectively. Other than that, patients are also advised to walk 30 minutes daily for improvement of blood glucose level; reduction of blood pressure, LDL cholesterol level, and increase HDL cholesterol. Exercise should not be vigorous, as it may cause hypoglycemia in diabetic patients. In case of some complications, patients are advised to stop physical exercise or sometimes suggested to workout in limitations.

On the basis of such facts I decided to join the Diploma of Diabetes Education to achieve awareness about complications of diabetes and to be able to help people with diabetes. I learned several methods and strategies from expert diabetes educators on how to educate people with diabetes effectively.



Publications of the Month

Original Article

Association of serum liver enzyme Alanine Aminotransferase (ALT) in patients with type 2 diabetes

Mujeeb Ur Rehman Abro¹, Anum Butt², Kulsoom Baqa³, Nazish Waris⁴, Maria Khalid⁵, Asher Fawwad⁶

Original Article

PAKISTAN JOURNAL OF MEDICAL SCIENCES

Protein requirement and its intake in subjects with diabetic foot ulcers at a tertiary care hospital

Nida Sajid¹, Zahid Miyan², Syed Itaat Hussain Zaidi³, Syeda Sara Abbas Jaffri⁴, Mariam AbdeAli⁵

Patient Corner

Story of Zain with type1 Diabetes (Part-2)

By Ms. Erum Ghafoor, Consultant Diabetes Educator

Summary of Part1: Zain is 12 years old young man who is a football player. He has two siblings. He was feeling weirdly sick since many days which was affecting his overall life. He was not sharing all his condition with anyone because he thought it would be better with time but one day he collapsed with weakness and had to inform his parents who called the doctor immediately.

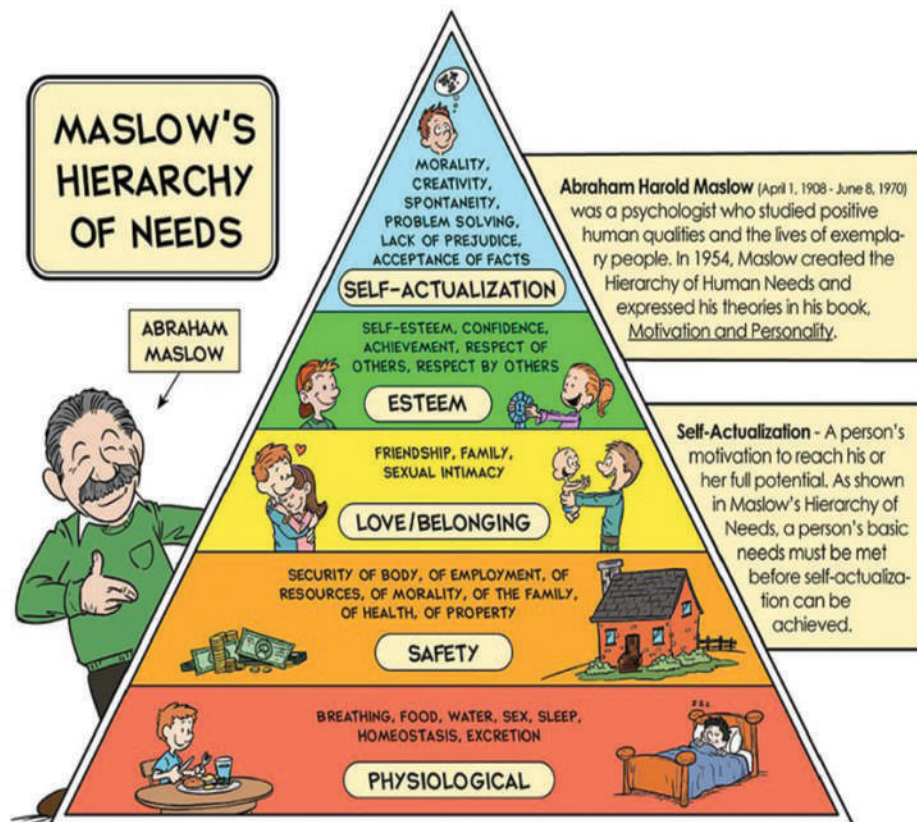
Part2: My family doctor has performed an initial test through glucometer and the worst nightmare has come true. My doctor uncle has instructed to shift me immediately to the nearby hospital where he can confirm his diagnosis. I was shifted to Baqai Institute of Diabetology and Endocrinology, after the initial test I was diagnosed with type 1 diabetes. I could not understand what it meant because I was feeling pain in my stomach,

and at times I felt dizzy but what was 'diabetes'. I was so horrified by the looks of my parents faces, my mom was crying, and my father shocked and silent. I was unable to understand; the doctors were around me, they kept giving me some liquid through a drip and kept injecting something in it time to time. The nurse was pricking my fingers and taking a small amount of blood after each hour. It was too much, and I was scared. I wanted to know what is happening than a smiling lady came in. She had introduced herself as a diabetes educator, she told us she would explain what had happened to me. She said to us that diabetes is a metabolic disorder in which our pancreas either doesn't produce insulin or insulin stops working in our body. My father asked her that what it meant by insulin is not working and how it was affecting my health. She told us that insulin is a substance which performs many roles in our body including providing energy to our body through food which we eat, if insulin is not sufficient or not working than food will stay in our blood causing

high blood sugar and we get sick and weaker day by day. She explained that there are two common types of diabetes. First and most common kind is type 2 diabetes, and the other is type 1 diabetes. Type 2 diabetes is the condition in which insulin is either not sufficient or not working correctly due to many reasons such as obesity, family history of diabetes, bad eating habits, no physical activity and sedentary lifestyle. Whereas type 1 diabetes is autoimmune condition in which our body's defense system considers our pancreatic cells as virus or bacteria and keeps destroying them. Unfortunately, I have been diagnosed with type 1 diabetes which means my immune system has destroyed my pancreatic cells and I need to take insulin all my life. **Continue in Next issue.....**

Moral of the part: Diabetes is a metabolic disorder which can happen to anyone at any age and any time but it can be managed through healthy life style and proper treatment.

Information Corner



In the Next Issue

Latest updates of NADEP activities

- Latest researches and updates in the world of diabetes prevention, care and management
- Multidisciplinary approaches to foot care in diabetes
- Read how Zain adapts to the new lifestyle while coping with challenges associated with diabetes
- The emotional impact of diabetes on families