DiabetesWatch

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Can IDDM be prevented?

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There are two major groups of diabetic patients based on the causes behind their sugar problem. Non-insulin dependent diabetics (NIDDM) are usually older and do not suffer from lack of insulin to the extent that the other group does. Insulin-dependent diabetics (IDDM) on the other hand are usually much younger and suffer from severe insulin lack because their beta-cells have been destroyed, either suddenly or gradually. In the absence of insulin, the blood, sugar goes up because sugar production in the liver gets out of control. Insulin also influences the disposal of fats. Where there is lack of insulin there is a tendency for fat levels in the circulation to go up and for the liver to produce abnormal amounts of "ketones" – acids that could do a lot of harm to the body and eventually lead to coma (diabetic ketoacidosis).

Various factors have been pointed to as causes of the sudden or gradual destruction of the beta cells.

1) In American reports, viruses and chemicals have been observed to inflict direct insult to the beta cells causing acute diabetic symptoms in a short period of time. Such patients make up about 2% of their IDDMs.

2) There are diseases classified as "endocrinopathies" involving all so-called endocrine glands (hormone producers) including the Islets of Langerhans where the beta cells are located. This group makes up some 10% of their cases.

3) Research has recently been shedding light on the cause behind the majority of their IDDMs and it appears like a so-called "autoimmune" process is at play in these patients. Somehow the body changes its feelings towards the Islets of Langerhans especially the beta cells, starts viewing them as foreign bodies and thus as enemies, and sends defensive forces against them in the form of destructive white blood cells and antibodies. Ultimately all the helpless beta cells get wiped out, within weeks or months or years. Surprisingly, the other cells survive.

It has to be conceded at the very beginning that a complete understanding of the disease process is necessary for an intelligent approach to its treatment and possible cure. This is the first disadvantage that is being gradually removed by intensive research efforts currently going on all over the world.

It is now possible to identify potential IDDMs among children properly screened

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ANNUAL MEET SET FOR DECEMBER 1

The annual convention of the Philippine Diabetes Association (PDA) has been set for Thursday, December 1.

The PDA Convention will be a whole-day affair at the Manila Garden Hotel. The morning activities will be an update on oral hypoglycemic agents. Main speaker will be Dr. Jean Louis Chiasson.

A business meeting will be held with lunch, and a lay program will follow soon after with an international diabetes educator, as main discussant.

The evening's affair will see the first national convention of the PDA chapters wherein one of main issues will be the relationship of the chapters to the national society.

THE DIABETES EDUCATION CLINICS – an invitation for service

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President, PDA

There no longer is doubt that education of the patient about his disease enables him to cope and live with diabetes mellitus. The physician cannot do this during the clinic visits of the patient, as education takes time and patience – not feasible during the consultation time. Thus, the need for clinics whose primary duty is education. In the past two years, the Philippine Diabetes Association's main thrust has been the setting up of these clinics in as many places of the country as possible. It has done so with the help of MedAsia and Boehringer Mannheim. The invitation is open for others who want to help.

The format of the organization of the clinics follows:

A physician leader in a community – willing to devote time and energy to the program – is chosen to set up a Chapter of the Philippine Diabetes Association (PDA) in his city, town or community. He extends the invitation to willing and interested members to join the Chapter - which should consist of physicians, nurses, dietitians, laboratory personnel, patients and other civic minded members. From them, a set of officers should be elected: a president, a vice-president, a secretary, a treasurer and five other members who shall form the Board of Directors (the five other members and the five officers).

As a first project of the Chapter, a Diabetes Education Clinic will be organized with the following features:

1. Purpose of the Clinic.

   The Clinic will be established with the sole purpose of educating diabetic patients and their relatives.

   The Clinic will not diagnose nor treat patients and should not therefore compete with physicians in practice.

   The Clinic will return all patients to the referring physicians with the Clinic's evaluation.

2. A site of the clinic, acceptable and accessible to the

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The Chapters of the PDA

The organization of chapters throughout the country has been the main thrust of activities for the past year of the PDA. Among the latest chapters that have been formally launched are the following:

Cebu Chapter

Officers – Dr. Fay L. Dano, president; Dr. Elma M. Baculao, vice-president; Dr. Erlinda T. Po, secretary; Dr. Pura B. Dominguito, assistant secretary; and Dr. Marian Denopol, treasurer.

Board of Directors – Dr. Bernardita Amigo, Dr. Francisca Manulat, Dr. Camia Quijada, Ms. Erlinda Taboada, Ms. Ma. Paulita Canoneo, Ms. Nenita Grace Canares, Ms. Joji Benitez and Ms. Loreto Lucas.

Quezon Chapter

Officers – Dr. Fe Villanueva, president; Dr. Pete Hao, vice-president; Dr. Cesar Villamayor, secretary; Dr. Urbano Oliveros, assistant secretary, Dr. Rosalinda Radovan, treasurer; and Dr. Amada Guerrero and Dr. Cesar Sia, PROs.

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Can IDDM . . . *(from page 1)*

using a certain kind of blood typing. Since most IDDMs take time before acute manifestations occur, it is now possible to plan out strategies of treatment at different points in the development and progress of the disease, to wit

1) where all indications point to a child as a potential IDDM

2) where the signs are overwhelming that a child will soon develop the acute symptoms of IDDM (diabetic ketoacidosis)

3) where the acute process may have just started (within two weeks of onset)

4) where the beta cells have been significantly destroyed

5) where the beta cells are almost or completely wiped out. 2 and 3 are the current objects of research thrusts aiming to prevent or stop the disease process.

1) there normally are protein molecules sitting on the surface of beta cells called human leucocyte antigens (HLA). When some of them behave abnormally and make the beta cells to appear like foreign bodies, the body's immune system is prompted to launch attacks aimed at destroying the "intruders". Researchers are now working on the possibility of modifying these molecules – inactivating the abnormal ones so that they do not entice the body defenses to attack the beta cells.

2) drugs have been used to block the killer cells that the body sends to destroy the beta cells.

3) abnormal hostile cells have been pre-treated (brainwashed) and then injected into experimental animals to suppress the attack on the beta cells.

4) substances called "monoclonal antibodies" can now be produced in the laboratory. These single out the leaders of the uprising and stop them from doing their destructive work.

It is understandable, however, that when the disease process has led to a significant decrease of beta cells, the only available recourse is to replace the insulin. Some researchers however are working on the possibility of stimulating beta cell regeneration from other parts of the pancreas.

Pancreatic transplants have been going on now for about a decade and optimism pervades in spite of the many drawbacks.

As a whole, research hopefully aims to bring about a cure before the end of this century.

Diabetes Education... *(from page 1)*

majority of the physicians in the community shall be chosen.

3. The projected personnel of the Clinic will be nominated:
   a) a Physician-In-Charge (this usually shall be the President of the Chapter)
   b) 1 or 2 teaching nurses
   c) a dietitian
   d) 2 or 3 first year medical residents

   These personnel shall be willing to:
   a) attend the training course *en toto* – promptly and without missing any of the training modules. A team from the Makati Medical Center Diabetes Education Clinic will hold this 1½ day intensive course.
   b) give their time and energy to the Clinic – voluntary at first; and with minimal compensation later on.

GI Values

100-75%
- rye crispbread
- rye whole meal bread
- whole meal bread
- *miller cereal grain
- *instant brown rice boiled 6 min.
- sweet corn
- *cornflakes
- porridge oats
- *puffed rice
- shredded wheat breakfast cereal
- oatmeal cookies
- Rich Tea cookies
- plain crackers
- *instant potato
- mashed potato
- boiled potato
- banana
- corn chips
- potato chips

74-49%
- rye whole grain bread
- macaroni noodles
- brown/white spaghetti noodles
- white star pasta
- buckwheat cereal grain
- bulgur cereal grain
- polished rice boiled 5 min.
- wheat kernel
- all-bran breakfast cereal
- sweet potato (camote)
- yam
- baked beans
- chick peas (garbanzos)
- green peas
- apple
- orange
- yoghurt
- whole milk

48% below
- protein enriched spaghetti noodle
- pearled barley
- rye kernel
- kidney beans
- red lentils
- peanuts
- soya beans
- skim milk

**values are actually higher than 100%*

STARCHY FOODS and GLYCEMIC INDEX (GI)

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When a person eats starches (carbohydrates) like rice, fruits, etc., blood glucose (sugar) naturally rises. The degree of increase in blood glucose is influenced largely by the kind and amount of carbohydrates eaten. Researchers studied this increase and compared the values they got to the increase in blood sugar when one eats white bread (considered as 100%). Food items were then classified as to how high they increase sugar in the blood, using the value obtained from white bread intake as a basis. This classification is termed "glycemic index" (GI) values of foods.

Many have objected to this index because for one thing, individual responses to specific foods vary greatly. Moreover, when these starches are eaten in a mixed meal (especially if fiber content is high), the differences in glycemic responses are abolished. Different varieties of specific food items also affect result; for example, this response to long-grain rice is different when one is served short-grain rice. Different studies use different varieties of potato, rice, etc. and hence there would be different indices obtained. Nevertheless, it is still of benefit to diabetic individuals to know that certain starchy foods would increase blood glucose higher than others, thus those under 100-75% will elevate the blood glucose higher than foods under the 74-49% category; and much higher than those in the 48% category.

It is interesting to note that some items one expected to find in the 74-49% GI values appeared on the high GI values listing (such as instant brown rice and sweet corn). Legumes in general give the lowest glycemic index values. In this connection, it is recommended that legumes and lentils be included in the menu of the diabetic individual. Despite what the above table may seem to indicate, it is still important for the diabetic to eat a variety of foods. In order to negate the high glycemic effect of certains foodstuffs, foods high in fiber should always be included.

Chapters . . . *(from page 2)*

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SICKNESS –

HOW TO DEAL WITH IT

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A very important aspect unfortunately, often neglected or unknown to our diabetic patients, is the question of what happens to them when they get sick.

It has been a known fact that during periods of severe emotional, or physical stress – (i.e., accident, operations, and illness), even without fasting there is an increased production of anti- or contra-insulin hormones; such as, epinephrine, glucagon, growth hormone and steroids which affect liver function with resulting high blood sugar and sometimes leading to ketoacidosis.

In these instances, it is wise to consult your doctor for proper guidance and management.

The following are important guidelines for home management of diabetes during acute illnesses to prevent development of ketoacidosis.

1) Always take your daily dose of insulin or oral hypoglycemics. NEVER OMIT, even if you are unable to eat.

2) Test blood or urine glucose as often as necessary, preferably every 2 to 4 hours if you are not eating or a minimum of four times a day (before each meal and at bedtime) is absolutely essential. Use freshly voided urine. For blood glucose, use haemoglukotest, or, glucostix (prick method) with or without a glucose meter. If you are feeling too sick to test, ask someone to do it for you or call your doctor.

3) If urine glucose is 1% or more, or blood glucose is higher than about 200 mg/dl (11 mmol/1), test also for urine ketones. Do this when ill from any cause. If ketones are present together with high glucose levels, you always need extra insulin. Fast or short acting insulins should be used. Consult your doctor.

4) Take liquids every hour to prevent dehydration. If unable to take liquids because of nausea or vomiting, contact your doctor, who may prescribe medication to stop the nausea or vomiting.

5) Rest and keep warm. Don't exercise – as this would only further increase your blood sugar.

6) If in severe abdominal pain, contact your doctor at once.

7) Food: If you are too ill to follow your usual diet plan, eat or drink whatever you can tolerate and retain. Drink at least 6 to 8 glasses of fluid a day. Use water, fruit juices, soft drinks, tea, consomme and broth (made from bouillon cubes.) – so as to replenish lost electrolytes also. With improvement, gradually return to a soft diet and then to your regular meal plan.

8) Extra insulin, if unable to contact doctor: If tests indicate need for extra insulin over and above your regular dose, take 20% (1/5) of your usual dose when well every 3 or 4 hours. Thus, if your usual total daily dose is 40 units, take 8 units of fast acting insulin every 3 or 4 hours, depending on the outcome of blood tests. Keep a record of all doses of insulin taken each day.

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