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DiabetesWatch

A publication of the PHILIPPINE DIABETES ASSOCIATION, INC.

YEAR XII, NO. 1

JANUARY - JUNE, 1995

EXERCISE DIABETES AWAY

Is theme of third year celebration of
DIABETES AWARENESS WEEK

The growing diabetic population has become a real menace. As the year 2000 nears, the challenge is how to prevent more people from having diabetes. Diabetes Awareness Week is geared towards this goal. Primarily by making people more aware or conscious of this disease, they will work harder to avoid getting it. One way is to stay away from fat by regular exercise. This is the reason for coming up with the theme "Exercise Diabetes Away" for the 1995 Diabetes Awareness Week which will be held on July 23-29, 1995.

To kick off the event, an exercise fair will be held at the Glorietta, Ayala Center Makati on Sunday, July 23, 1995. Mini motorcades from different participating hospitals in Metro Manila will converge at the Ayala Center Makati at 10:00 A.M. A Sunday Catholic Mass will be graced by no less than the new Secretary of Health, Dr. Hilarion Ramiro, Jr. Different fitness centers will participate in the fair and will lead demonstrations on exercise with participation from the audience. The audience will also experience some ballroom dancing during the affair.

For the first time, the mid-year Philippine Diabetes Association convention will also be held during the Diabetes Awareness Week on July 26, 1995 at the Century Park Sheraton Hotel Manila. The convention has a whole day scientific program for physicians and an afternoon learning session for the lay (See programs elsewhere on this page).

Other activities lined up for the week include lectures on diabetes to different civic groups and organizations notably the Rotary Clubs. Different TV programs will also tackle the topic of diabetes which will feature top endocrinologists. Simultaneously the different PDA chapters and different Diabetes Clinics nationwide will hold similar activities to celebrate Diabetes Awareness Week. Diabetes clinics whose staff has undergone training at the Diabetes Center are expected to open during the week.

This celebration is hosted by the Philippines Diabetes Association and Diabetes Center along with friends from the pharmaceutical industry. So come and join. It's not too late yet. Go ahead and exercise and keep diabetes away.

- JOSEPHINE CARLOS-RABOCA, M.D.

4th Midyear Convention Presents:

PROGRESS IN DIABETES CARE

The PDA will hold its 4th midyear convention at the Century Park Sheraton on Wednesday, July 26 as part of the Diabetes Awareness Week celebration for 1995. The theme of the convention is "Progress in Diabetes Care." The program has a whole day affair for physicians, and a half day for the lay audience. The program is reproduced below.

I. For physicians (7:00 AM to 4:30 PM)

A. Morning Sessions

- | | |
|-----------------------------|-----------------------------|
| 1. Dr. Ma. Teresa Plata-Que | : Genetics of IDDM |
| 2. Dr. Elwynn Fernando | : Genetics of NIDDM |
| 3. Dr. Ricardo Fernando | : The Diabetic Triopathy |
| 4. Dr. Rosa Allyn G. Sy | : Diabetes and Obesity |
| 5. Dr. Tommy Ty Willing | : Diabetes and Dyslipidemia |
| 6. Dr. Araceli Panelo | : The Diabetic Foot |

B. Afternoon Sessions

- | | |
|------------------------------|--|
| 1. Dr. Elizabeth Paz-Pacheco | : DCCT - Therapeutic Implications |
| 2. Dr. Laura T. Acampado | : Combination Therapy |
| 3. Dr. Ruby T. Go | : Hypoglycemia Unawareness and Counterregulation |
| 4. Dr. Augusto D. Litonjua | : GDM: 100 years after Duncan |

II. For the lay (1:00 PM to 5:00 PM)

"An Afternoon for Family Learning"

- | | |
|---|--|
| 1. Dr. Cynthia H. Manabat | : Diabetes - What it is/How to control it |
| 2. Dr. Rosa Allyn G. Sy | : Why Exercise? |
| 3. Mr. Raymond Bacilit | : Let's Shake and Move our Body
(Appropriate exercises for diabetics) |
| 4. Mr. Noel Zabala | : What to do when hypoglycemia occurs |
| 5. Ms. Juliana Divinagracia | : Who cares for my feet? |
| 6. Workshops: | |
| a. Proper foot examination and hygiene | |
| With nurse educators Susan B. Trinidad, Nora Makalintal, Louise Marie Flores, Mercedes Legarda, Rosalyn Almazan, and Lizaflor Ibay. | |
| b. Diet: What are your choices if you haven't got any? | |
| Ask your experts: Ma. Imelda Q. Cardino, Chita Angeles and Joy Sustraido | |

PDA at 88thPMA Convention

The Philippine Diabetes Association took care of Session VB at the recently concluded 88th annual convention of the Philippine Medical Association at the Philippine International Convention Center last

May 25. Playing to an SRO audience of about a thousand attendees, the topic of the symposium was 'Coping with the insulin resistance syndrome.'

Dr. Augusto D. Litonjua

(Continued on page 12)



Dr. Mirasol with the 9 years old campers, counselors and nurse.



The most senior counselor (Mr. Halili) with the youngest of the campers (7-8 yrs. old)

For two weeks, Mr. Constancio Halili (president of Dia-Care) and I had the privilege of joining the Camp Joslin Staff for pre-camp training and actual camp sessions in Boston, Massachusetts, U.S.A.

The Joslin Diabetes Centers' camping programs enable young people with diabetes to learn more about themselves, the management of diabetes and coping with special challenges of living with diabetes. This is accomplished by providing children and adolescents with diabetes with enjoyable recreational and camping experiences that enhance safe independence, healthy self-discipline and personal growth. This is Camp Joslin's mission statement.

Dr. Elliott Joslin conceived of camps, as far back as 1948 as a means to help insulin dependent diabetic children and adolescents to be active in their diabetes care. The Camp Joslin camp has grown tremendously over the years. It has complete camping facilities like soccer fields, baseball fields, tennis courts, recreational lounges, basketball courts and even a man made lake for waterfront activities. It sees around 700 insulin diabetic patients over the whole summer. The secret of the success of the camp is not in its facilities but the young dedicated staff (administration, program and health care staff), who make sure that

the children have fun but at the same time learn more about diabetes.

We joined the camp for pre-camp training. The pre-camp training was devoted to staff development and was handled by a professional team from the Joslin Diabetes Center, the camp leadership and some veteran staff members. Special problems of diabetes in children and adolescents were specifically addressed. Counseling techniques for teaching children 7-16 years of age were emphasized. The training likewise provided the staff with skills to develop camp program activities. These were important to build a cohesive and solid team of staff members with which the parents will entrust their child for a week or two of camp. The qualified staff is unique in that most of them, (except perhaps for the health care team), from the kitchen aides to the director and administrator have diabetes. And they definitely can empathize with the children. Since most of them have diabetes we have to eat diets tailored to diabetics. We have a meal plan and follow it the best

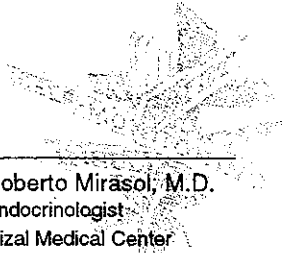
we can. (Mr. Halili actually lost weight in camp!).

The camp sessions follow a very rigorous schedule with maximum flexibility in the different programs. The campers wake up for bloods (term used for capillary blood glucose monitoring) insulins and ketones. Then we head for breakfast of mostly bagels, bread, cereals, fruits, skim milk and of course the all-American peanut butter (they actually weigh the peanut butter!). Campers then clean their cabins and the different camp areas. We then start with our first activity which is actually moderate to vigorous exercise - swimming, basketball, volleyball, newcomb, baseball, hockey, etc. A less active follows which is less vigorous activity such as archery, fishing, boating, canoeing, weights, arts and crafts, etc. Bloods, insulins, ketones and lunch follow. The blood sugars now are going down and the children are very hungry to eat. Two actives after lunch and a general swim plus a less active program completes the afternoon session. The program staff makes sure the kids don't

get bored. Before dinner bloods, insulins and ketones are done and an active program is conducted after dinner to burn the calories. Blood sugars are now low or normal. The day ends with an evening program. This could be a campfire, bingo, a dance or a contest in naming a tune or rap sessions or any activity which everybody could participate. The activity is capped by bloods, insulins, ketones and a bedtime snack. With such a schedule, most campers have lowered insulin requirements, generally have good blood glucose control and have in fact, frequent hypoglycemic reactions. Even when sleeping a number of campers do get hypos. Throughout these activities, there are countless opportunities for education about diabetes care, particularly about day-to-day issues in camp. The rap sessions are age-specific and offer creative, attention keeping approaches. Most of the learning however is gained through informal contact with medical staff and other campers as well.

It was learning experience for both of us. We became surrogate parents, educators, coaches, counselors, and confidantes to the kids. Hopefully in mid-1996 we may be able to come up with a diabetic camp to help our Filipino diabetic children. Three words which echo in the hearts and minds

(Continued on page 12)



Roberto Mirasol, M.D.
Endocrinologist
Rizal Medical Center

Everything you always wanted to know about **DIABETES...**

(but were afraid to ask!)

In this season of rains and typhoons, illnesses are very common. Viral infections such as the common cold or flu present special problems to the person with diabetes. Illness in itself can raise the blood sugar. Vomiting or loss of appetite will affect diabetes control. In this issue of Diabetes Watch, we will help you prevent a minor illness from becoming a major problem by answering your questions on SICK DAYS.

What is the effect of illness on my blood glucose control?

Illness is a form of stress and any stress increases the secretion of counter-regulatory hormones. They are antagonistic to the effects of insulin and therefore increase the blood sugar. These events result in dehydration, electrolyte imbalance and loss of nutrients. That is why it is important to recognize an illness early on.

How do I prepare for an illness?

First you should know when to have more blood sugar tests. Finally you must know what food and fluids to take and how to handle your medication.

If I am vomiting or having diarrhea, what should I do?

In this situation you know that sticking to your meal plan is a problem. You must drink plenty of fluids. There is no set rule on how much fluid to take. Approximately 4-6 oz. every 30-60 minutes is reasonable. No extra calories must be contributed by the fluids. If however, you cannot eat or do not feel like eating, replace your regular meal with sugar containing liquids or soft foods, e.g. 1/2 glass of orange juice, tea with two teaspoonfuls of honey or sugar, 1/3 cup sweet jelly or 6 pieces of crackers. Extra fluid will prevent dehydration and the sugar will provide the calories necessary.

Should I test my blood sugars very often?

By all means. This will provide feedback on whether your blood sugars are not in good control. Do this every 4-6 hours when ill. Aside from blood sugar testing you must test your urine for ketones especially if the blood glucose is more than 250 mg/dl.

I can't eat when I'm ill, should I stop my medications?

NO, NO, NO. Do not stop your insulin injection nor your diabetes tablets. Even if you cannot eat, your body needs the medications that is prescribed for you. If you are on insulin, take your usual dose. You may need additional rapid acting insulin. If you are on tablets, take them if you can. Sometimes you may have to take insulin during an illness.

Do my other medicines affect my blood sugar?

YES. Over the counter drugs may have either hyperglycemic or hypoglycemic effects. Many cough syrups are usually aqueous solutions saturated with sugar. Elixirs and tinctures usually contain alcohol. These affect the blood sugar. Some cold remedies may raise the blood sugar because they often contain epinephrine. Before using any drug check with your doctor.

When do I seek help?

It depends on your illness. If you have an illness that does not improve after 1-2 days, vomiting or diarrhea for more than 6 hours, moderate to large ketones in the urine, persistently high blood sugar readings, unusual drowsiness or sleepiness that is not normal for you, abdominal pain, chest pain or difficulty in breathing- then seek help IMMEDIATELY!

We welcome your comments, suggestions and questions. Write the PDA office or Fax to 531-1278.

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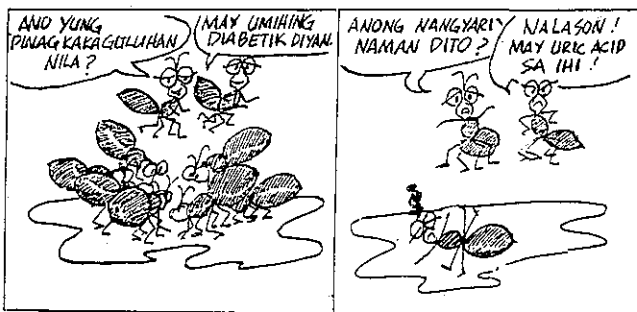
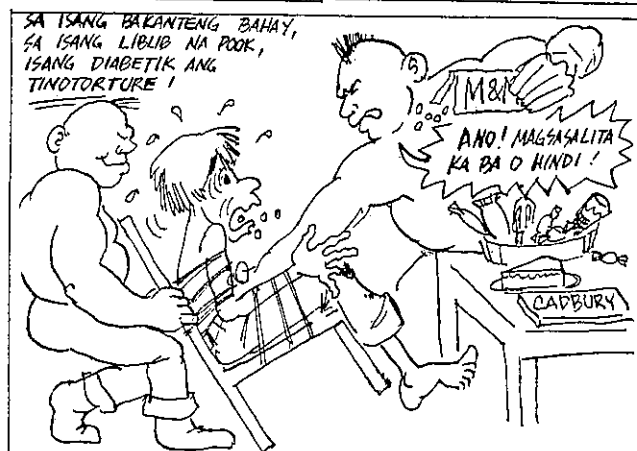
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The Lighter Side of Diabetes

...ALLAN HERNANDEZ, M.D.



ANG PAGKAKARDON NG LANGGAM SA IHI AY ISA SA MGA PALATANDAAN NG DIABETES.

Ten Tips for Those Who Get Diabetes After Sixty

- ✓ Accept the fact that you have diabetes.
- ✓ Understand that uncontrolled diabetes can be causing serious complications even if you feel fine.
- ✓ Read about diabetes and attend a diabetes education class.
- ✓ Call your local chapter of the Philippine Diabetes Association or a nearby hospital to locate a diabetes support group.
- ✓ Make sure you have a knowledgeable and caring doctor. If possible, see a diabetologist, endocrinologist, or gerontologist, at least for a few visits.
- ✓ Know that, with your doctor's help,

you can control your own diabetes through a helpful diet, exercise, oral medication or insulin, and self-monitoring of blood glucose.

- ✓ Know your body. Correlate your blood glucose levels with mood swings, fatigue, or other symptoms.
- ✓ Keep up to date on the latest diabetes research and equipment.
- ✓ Obtain special equipment if you need it.
- ✓ Remember that your life is valuable and important, no matter what your age.

From Diabetes Forecast, May, 1995, page 37

Tommy S. Ty Willing, MD
Endocrinologist
Metropolitan Hospital

DIABETES and CORONARY ARTERY DISEASE

Atherosclerosis is a major cause of mortality and morbidity in patients with diabetes. Indeed, in all forms of diabetes, atherosclerosis-related mortality has increased steadily since the beginning of insulin era to the point where it now account for more than 70% of the total mortality. This increase in the prevalence of coronary artery disease (CAD) in diabetics is seen both from autopsy and clinical studies.

The risk of diabetic patients dying prematurely of CAD is increased several fold compared with the general population, and is partly a consequence of an increase incidence of heart attack in the diabetic population (as well as increased mortality from heart attack itself.) Increased mortality post-heart attack may be explained in part by the following:

Silent (and thus unrecognized) heart attack is much more common in diabetics and predisposes to later presentation. This maybe related to either established or partial autonomic neuropathy which is known to associate with increased CAD mortality.

Non-insulin dependent diabetes mellitus (NIDDM) is often linked with obesity and other independent CAD risk factors such as hypertension, hypercholesterolemia, insulin resistance, hypertriglyceridemia and decreased levels of high density lipoprotein (HDL). This clustering of risk factors in the NIDDM patient

has a synergistic effect on CAD risk and causes more extensive atherosclerosis and thus more advanced disease.

Metabolic abnormalities such as increased free fatty acids, and changes in pH, potassium and magnesium levels compound this high risk scenario. These possible explanations for the increased mortality post-heart attack seen in diabetes are certainly not exhaustive, but they clearly illustrate that the diabetic state is not just an abnormality of carbohydrate metabolism.

The results of the International Atherosclerosis Project show that the prevalence of CAD is increased up to six-fold in the diabetic patient compared with the non-diabetic.

For diabetic patients, where changes in lipid metabolism are characteristic of the diabetic state, dyslipidemia is likely to be one of the primary determinants of risk for CAD. These changes in lipid metabolism, which may be qualitative or quantitative, probably augments the atherogenicity of other CAD risk factors such as hypertension and smoking.

In contrast, any relationship between the risk of developing CAD and the degree of glycemic control is at best tenuous and unsubstantiated.

Clustering of Conventional Risk Factors

Comparison of the distribution of conventional CAD risk in diabetics shows that there is

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Diabetes and Coronary...

(From page 4)

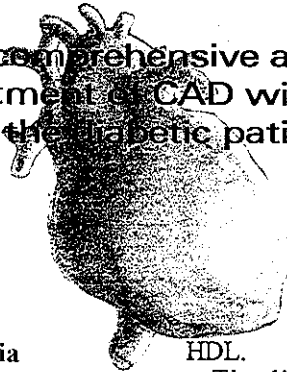
clustering of this factors in diabetic patients. Moreover, the factors are usually more severe in diabetics. The common association of truncal obesity, hypertension, hypertriglyceridemia, low levels of HDL, glucose intolerance (or established NIDDM) and gout with CAD is well recognized and has been called the Syndrome X or the Reaven syndrome. Although some authorities consider this to be a hyperinsulinemic state, it is best considered to be a manifestation of relative insulin resistance.

Insulin resistance has been implicated also in the pathogenesis of essential hypertension, which both illustrates and emphasizes the close and complex interdependence of these variables.

This finding supports the view that long term clinical management of the typical

obese NIDDM patient requires a holistic approach, and all modifiable risk factors such as hyperlipidemia, hypertension, obesity and smoking habits need to be addressed enthusiastically.

Only a comprehensive approach to the treatment of CAD will suffice.... for the diabetic patient....



Hyperlipidemia

The role of hyperlipidemia in promoting atherosclerosis in diabetes is well documented. There is also evidence that qualitative changes in lipid metabolism are important.

Hypertriglyceridemia is a common lipid abnormality seen in diabetes, but dyslipidemia arising from a

combination of elevated triglyceride and cholesterol level is also more common in diabetics than non-diabetics. However, the most typical dyslipidemia is a combination of hypertriglyceridemia together with lowered levels of

HDL.

The lipid abnormalities found in IDDM and NIDDM tend to differ. In IDDM the plasma cholesterol level is broadly similar to that seen in the indigenous non-diabetic population, but in NIDDM it is generally raised.

However, the issue is complicated by the fact that there

are also equally important qualitative differences which are believed to augment the atherogenicity of the particles involved. In NIDDM the selective production of large, triglyceride-rich very low density lipoprotein (VLDL) particles is seen, whilst the LDL particles are small, dense, triglyceride-enriched and depleted or cholesterol ester. There is also a variation in the activity of the various lipases which results in the selective reduction in the concentration of HDL.

The sum total of all the changes in the lipid metabolism seen in diabetes has led to the expression of atherogenic lipoprotein phenotype.

The precise physiological relevance of such modification in vivo remains to be established. However, modifications

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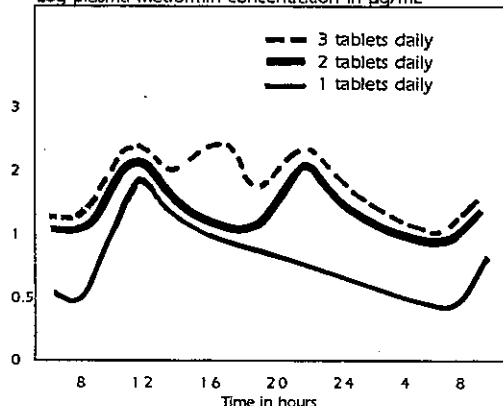
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Reference: Bruneder, 1979

PRESCRIBING INFORMATION:

INDICATIONS: Non-insulin dependent diabetes when diet has failed and especially if patient is overweight. Alone as initial therapy, or in combination with a sulphonylurea, or as an adjunct to insulin in patients whose symptoms are poorly controlled.

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CONTRAINDICATIONS: Hypersensitivity, diabetic coma, ketoacidosis, renal impairment, chronic liver disease, cardiac failure, recent myocardial infarction. History or states associated with lactic acidosis or hypoxemia, alcoholism.

PRECAUTIONS: Regular monitoring of renal function is advised.

ADVERSE REACTIONS: Gastrointestinal disturbances sometimes occur and can often be avoided by taking Glucophage with or after food but a temporary lowering of the dose may be needed.

OVERDOSAGE: In combination therapy with a sulphonylurea or insulin or with alcohol, hypoglycemia can occur.

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Diabetes and Coronary...

(From page 5)

which could cause cholesterol uptake by the macrophages are known to occur in diabetes. These include glycosylation of apoproteins, chemical modification by malondialdehyde (which is produced by the prostaglandin cascade following platelet aggregation), and some of the qualitative changes already mentioned. Thus this combination of both qualitative and quantitative changes in lipid metabolism may partially explain the increased atherogenicity of the diabetic state.

Hypertension

Hypertension, one of the major CAD risk factors, is more prevalent in diabetics than in general population. Its relationship with diabetes and CAD risk appears to be different in IDDM and NIDDM.

Like dyslipidemia, hypertension is amenable to therapeutic intervention.

Nephropathy

Excess mortality from CAD cannot be explained solely in terms of hypertension. Epidemiological studies in Denmark have shown that in IDDM, the development of proteinuria is a major discriminant for CAD mortality. Patients with proteinuria show a more than 40-fold increase in mortality compared with diabetics without proteinuria. The latter have only a four-fold increase in mortality compared with the general population. Once persistent proteinuria has developed, about 40% of diabetic patients will develop evidence of CAD within six years, compared with only 5 % in those without proteinuria.

In NIDDM the situation is more uncertain and contro-

versy. However, in these patients, microalbuminuria is the best marker for early mortality. It is likely that both proteinuria and microalbuminuria are surrogate markers for generalized endothelial dysfunction characterized by advanced atherosclerosis.

Patients with early nephropathy are often found to have raised level of LDL and plasma fibrinogen, lowered HDL levels, and mild hypertension.

There are two strategies for preventing CAD in the general population. For patients who are otherwise asymptomatic with no evidence of underlying vascular disease there is the simple primary prevention strategy which aims at modifying risk factors such as hyperlipidemia, hypertension and smoking. The precise threshold for drug intervention in this category of patient is currently the subject of contro-

versy.

For patients already demonstrated to have established CAD or those considered to be at high risk (such as those with familial hypercholesterolemia) there is an alternative, but not necessarily mutually exclusive, secondary prevention strategy. Several studies have shown that these vulnerable patients benefit from the use of diet and/or drugs, and there is a clear consensus that in a secondary prevention strategy the threshold for intervention should be lower.

Because the diabetic population is generally vulnerable to CAD it should not be presumed that an asymptomatic patient with NIDDM is, in fact, free from coronary disease. Treatment of hyperlipidemia in such patients should not be constrained by the guidelines applicable to the primary pre-

(Continued on page 8)

GLIPIZIDE MINIDIAB

MINIDIAB pharmacokinetics are more advantageous than those of other sulfonylureas

Drugs	Time (hr) to peak effect	Half-life, T 1/2 (hr)	Duration of action (hr)	Metabolites	Overall excretion
Chlorpropamide	8-10	30-60	22-65	4 (active)	100% in 10-14 days
Glibenclamide	2-5	10-16	16-24	6 (partially active)	59% in 1 day 95% in 5 days
Gliclazide	2-6	10-12	4-24	8 (inactive)	98% by renal route in 48 hr
Glipizide	1.0-2.5	2.4-4	6-24	4 (inactive)	97% in 1 day 100% in 3 days

- "Glipizide evoked a more pronounced and more rapid increase of plasma insulin and correspondingly greater and faster blood glucose reduction than did glibenclamide."
- Thus, likelihood of hypoglycemia is minimized "As glipizide (Minidiab) is rapidly eliminated, and as there is no evidence that its metabolites are significantly active, the risk of long-lasting hypoglycemia should be small when using glipizide. In contrast, glibenclamide has provoked serious, and even fatal hypoglycemia in several cases; it is possible that this risk is increased in patients with renal insufficiency due to accumulation of an active polar metabolite. A similar risk is well recognized in the case of chlorpropamide."

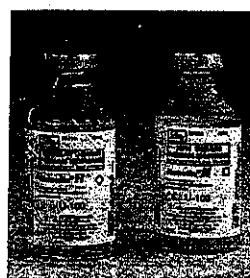
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In the 1960's, it was estimated that diabetics had a 50% chance of undergoing surgery at least once in their lifetime. However, due to the recent advances in medical and surgical therapies, it is likely that diabetics today have a much greater chance of undergoing surgery.

When even the slightest hint of a possible surgery is given to a diabetic patient, the first question that crosses his or her mind is "Can I undergo surgery?". The answer to this question is "YES" but with precautions and adequate preparation. The secret to undergoing successful surgery is to have appropriate pre-operative evaluation and management and excellent intra-operative and post-operative care.

Pre-operative Evaluation and Management

It is very important that dia-

betic patients undergo adequate pre-operative evaluation by their physicians, preferably endocrinologists, when circumstances allow, such as in non-emergency operations. There are several factors to consider such as the type of

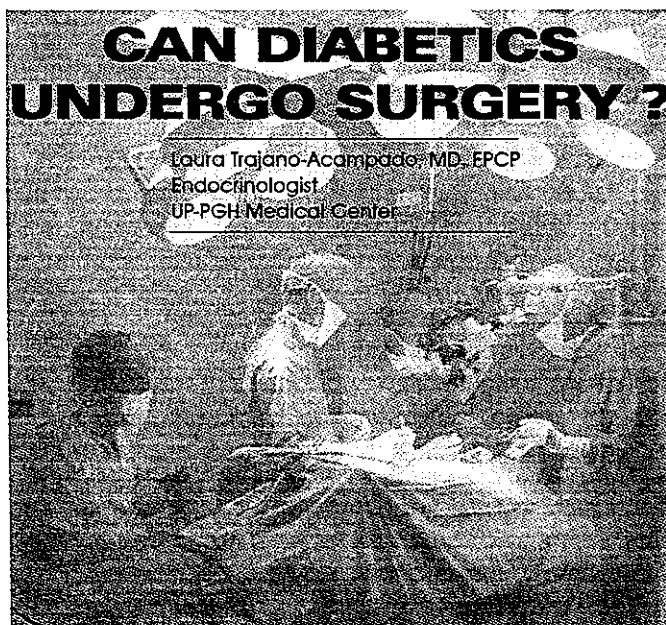
diabetes because the management will differ for patients with IDDM or NIDDM. It is also important to determine the degree of blood sugar control because this will determine how intensively blood sugar control will be undertaken be-

fore surgery and if surgery will have to be delayed until acceptable blood sugar control is achieved. It is also important to estimate insulin requirement to determine how much insulin should be given during surgery.

Of course, it is essential that a patient be evaluated for the presence of diabetic complications such as coronary artery disease, hypertension, nephropathy and neuropathy because these factors have a great influence on the outcome of surgery. If any problems such as uncontrolled hypertension have to be corrected, this should be done before surgery.

As much as possible, diabetics should be operated on early in the day to avoid prolonged exposure to intravenous fluids before surgery and to give the doctor enough time to stabilize their condition after surgery.

(Continued on page 8)



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The whole world today is suffering from a serious epidemic of diabetes mellitus. This silent killer especially threatens developing countries like the Philippines, where increasing numbers are flocking to very few diabetic clinics that have been hurriedly set up.

More than three decades ago it was known that diabetes was rare in the young. A 1961 article in the Journal of the Philippine Medical Association claimed that over a period of fifteen years, only one juvenile diabetic was admitted into the Philippine General Hospital. Limited surveys at that time seemed to verify the impression of rarity. But since the 1960's the numbers have grown alarmingly, such that diabetes doctors today are warning everyone that the next juvenile diabetic can be your child, your nephew, or your grandchild! The Juvenile Diabetes Foundation at the Lung Center of the Philippines, together with the Institute for Studies on Diabetes at the University of the East Ramon Magsaysay Memorial Medical Center have amassed close to two thousand cases today.

Diabetes hits the young even at the very early ages of two and three. Generally the numbers increase towards ages 12 to 15. Two forms of diabetes afflict our children. The younger ones suffer from an unmistakably insulin-dependent form characterized by diabetic ketoacidosis and coma especially when they miss their insulin injection. This is called Type I diabetes mellitus. It kills because it is misdiagnosed many times. The other type is called Maturity Onset Diabetes in the Young (MODY). This comes a little later during the teenage years and beyond. These patients can survive on diet and oral anti-dia-

Ricardo E. Fernando, M.D.
Diabetologist
St. Luke's Medical Center

DIABETES IN THE YOUNG

betic drugs. An occasional patient may turn up to be an insulin-dependent diabetic later on.

The complications of diabetes are varied. The younger ones are more prone to develop nerve (neuropathy) and eye (retinopathy, cataracts) and kidney problems. Cataracts cause loss of transparency of the lens. Retinopathy destroys the small blood vessels of the retina - the film of the eye. Nerve fibers subjected to long standing elevations of blood sugars malfunction and eventually get destroyed. And the blood vessels in the kidneys undergo the same destructive changes as in the eyes.

The sequelae of these diabetic complications are severe: neuropathy leads to pain, all kinds of organ dysfunctions, impotence, severe weakness. Retinopathy and cataracts lead to blindness. A great number of blind people in the Philippines are diabetics. And nephropathy ends in the dialysis and kidney transplant centers. All the complications impact on quality of life and economics.

A recently concluded study has shown beyond doubt that near-perfect control of blood sugars can save the children from the consequences of chronic diabetes. Unfortunately control is very dependent on financial logistics. It is

estimated that a juvenile diabetic in the Philippines today needs a budget of at least three thousand pesos a month to be able to keep his head above water. Optimum diabetes care is something hardly possible in the life of many many of our juveniles. In advanced countries, diabetics argue about which blood glucose meter to use for monitoring, which insulin preparation to use, whether to use very good syringes or insulin pumps. In our current situation, many indigent diabetics merely pray that they will have insulin for today and tomorrow. They use blood sugar monitoring strips without meters and very very sparingly. Many die because of lack of support materials.

Guia was an 18 year old college student when she suffered an insect bite on a finger on her left hand. This gradually became infected. For six days her whole hand and forearm were remarkably swollen. She developed high fever and was taken to the hospital in a very weak condition. Diagnosed to be suffering from severe, widespread infection with lung abscesses, she lapsed into a coma. Her blood sugar was found to be 594 mg%. She had plenty of acetone in her urine. She was given large amounts of antibiotics and insulin but she died in 24 hours.

Mike was the youngest of

three healthy boys in his family. At the age of eleven he became a diabetic. He went through periods of fear and anger. The first few years were very rough on him, but he eventually settled down after reluctantly attending a summer camp. He was just beginning to get over the hump when one day his younger brother started to complain of signs and symptoms much like those he had experienced during the onset of his diabetes. Brought to hospital the younger brother was immediately diagnosed diabetic.

If to a once happy family the above experience was all too shocking, it was more so to a young mother and father, both dumb, to whom was born a very pretty baby girl who, after about one year, developed overt diabetes ushered in by coma. The parents now hesitate to have another child for fear that the same misfortune might recur.

Lanie was five when she was found to be in coma with a blood sugar of 1500mg%. Her doctors were able to pull her through the crisis only to be confronted with exasperating fluctuations of her blood sugar levels which sent her frequently to the hospital. Compliance with the doctor's orders was very poor; her brief life was characterized by rebellion against the disciplines being imposed on her - diet, monitoring, insulin injections. The parents were about ready to give up on her when she died at the age of 21.

The doctors were not sure what kind of diabetes 12 year old Juliet had, but she was placed on insulin right away. One day, her father - a farmer - had to have emergency surgery and she stopped her insulin to help ease the strain on

(Continued on page 11)

Diabetes in the...

(From page 10)

the family budget. In no time at all she was rushed to the emergency ward in severe diabetic coma. She was dead in two days.

Imma was an only child; her family could not afford to have another. She was eight when she developed diabetic coma. Uncontrolled diabetes led to eye complications. She had to face the serious decision of whether to keep the baby even with the prospect of blindness and renal failure before her. She died of uremia shortly after the baby was born.

Jovy, aged 17, came from a very poor family and had been diabetic since the age of nine. Many times her insulin supply would run out. At the age of 16, she required cataract surgery but could not raise the necessary funds. She faces a future threatened with blindness.

Disabling nerve disease with impotence hit Norman, a father of two, at the age of 29, after he had suffered from uncontrolled diabetes for some 10 years. He had to quit a very promising job and depend on his very supportive wife for over a year.

These ten young Filipinos dramatize the tragedy now occurring more and more frequently in the younger strata of Philippine society, sparing neither sex nor age, neither paying respect to economic status.

The Juvenile Diabetes Foundation and the Institute for Studies on Diabetes jointly sponsor year-round clinics and programs for these kids. They have been holding yearly Summer Camps for Juvenile Diabetics since 1982. There still is a long way to go in arousing sufficient public interest in these unfortunate children.

From Diabetes Forecast, June, 1995, page 79-80

Metformin Reduces Risk Of Heart Disease

People with type II diabetes who take diabetes pills now have two options: sulfonylurea drugs (such as glipizide and chlorpropamide) or metformin, a drug approved by the Food and Drug Administration in December. But having more choices means people must weigh pros and cons more carefully.

One advantage often touted for metformin is the ability to lower the levels of triglycerides, blood fats linked to heart disease. A new study measured metformin's effect more precisely.

Ten men and six women with type II diabetes participated. All had been taking glipizide, yet their fasting glucose levels were still too high.

Researchers measured a variety of blood fats as well as the subjects' insulin sensitivity. Then the subjects began taking metformin in addition to glipizide. After several weeks, the researchers again measured blood fats and insulin resistance.

The tests revealed that fasting glucose and glycohemoglobin levels had dropped, showing that diabetes control was better. The subjects were more sensitive to insulin. And their levels of unhealthy blood fats had dropped.

People with type II diabetes have a higher risk of heart disease than other people, probably in part because they have higher levels of blood fats like triglycerides. This study verified that metformin, when used with glipizide, changes levels of blood fats in a healthy direction. So metformin may not only help keep type II diabetes under control, but also help prevent heart disease, the top killer of people with type II diabetes.

"This paper shows again that metformin is a very effective way to lower blood glucose in patients not well controlled on sulfonylureas alone and emphasizes the beneficial effect of metformin on postprandial [after-meal] lipids levels," says Gerald Reaven, MD, of the Veterans Affairs Medical Center in Palo Alto, Calif. (Diabetes Care 17:1093-99, 1994)

Steady On Your Feet

It's one of life's more frustrating experiences: You tell your doctor about your new problem or symptom, but your doctor is baffled.

Sometimes, people with diabetic sensory neuropathy (diabetes-caused damage to the nerves that detect touch and temperature) have told their doctors they were wobbly when walking

or standing. But doctors knew little about this. Researchers decided to investigate. They studied 17 adults with diabetes but not neuropathy, 17 with both diabetes and sensory neuropathy, and 17 with neither condition. Each person stood barefoot on a platform that measured how well a person could maintain his or her balance.

The people who had both diabetes and neuropathy had a harder time staying balanced. They had particular problems when they closed their eyes or tipped their heads back, actions that eliminated some clues for staying steady. People who had diabetes without neuropathy were about as stable as those without diabetes. The type of diabetes people had, their glucose levels, and whether they used insulin had no influence on stability.

People who aren't stable on their feet probably are more likely to fall down and hurt themselves. As a result of this research, the investigators were able to create tables to help doctors estimate the steadiness of their patients, based on age and results from one of several easily performed neuropathy tests.

"People who already have symptoms of neuropathy should be aware that their balance may be compromised in some situations," says Peter Cavanagh, PhD, of Pennsylvania State University in University Park. He cites, for example, being in a dark room or trying to reach something high in a closet. "Turning the lights on or being careful about attempting to balance in unusual situations could prevent a fall," he says. (Diabetes Care 17:1411-21, 1994)

Type I Diabetes In Families

When one family member has type I diabetes, first-degree relatives (parents, children, and brothers and sisters) are more likely to get it. Previous studies found that 5 to 19 percent of people with type I diabetes had a first-degree relative with the condition. But a new study suggests that these estimates are too low because researchers did not follow families long enough.

Danish researchers gave questionnaires to all type I patients at their diabetes clinic who were at least 50 years old and had had diabetes at least 30 years. The questionnaire asked how many relatives the subjects had and which had type I diabetes. Of the 291 subjects, 73 (about 25 percent) had at least one relative with type I diabetes.

Many of the previous studies looked only at children or teens and followed them for a short amount of time. Therefore, these studies couldn't

uncover risks to children or long-term risks to brothers and sisters. This study, by looking only at older people, could collect decades of information about their families.

When deciding whether to have children, some people with type I diabetes weigh the chances that their children might one day develop type I diabetes, too. The parents of one child with type I diabetes may wonder about the risk to their other children. This study shows that the chance may be higher than doctors had thought. (Diabetologia 37:321-27, 1994)

Practice Makes Perfect?

After testing your blood glucose levels several times a day for all this time, you'd think you'd be pretty darn good at it. But not everyone is. New research shows that some people start off fine, then get sloppy over time. Other are slow to catch on to monitoring. But the study also showed that people can hone their skills by reviewing their technique at clinic visits.

The researchers recruited 40 male veterans with diabetes in Phoenix to be in the study. Everyone received training in how to use a certain glucose monitor. Then, they went home with instructions to monitor their blood glucose levels at least twice a day. The subjects returned to the clinic three times to give blood and test their own blood, while a diabetes educator rated their technique.

Eighteen men measured their glucose levels accurately at all visits. (Accuracy being a result within 20 percent of the lab's result—for example, the lab's report was 200 mg/dl and the subject's was between 160 and 240 mg/dl.) Twelve started off poorly, then improved their skills. Nine started off with accurate readings, but later slipped. One man never did measure his glucose accurately.

In a follow-up study, 3 of the 18 men with accurate results and 8 of the other men again returned to the clinic several times. This time, the diabetes clinic staff gave them pointers on their technique and their monitors. By the end of the study, everyone was getting accurate results.

Doctors should check patients' metering skills often, perhaps at every visit, says Udaya Kabadi, MD, of the Carl T. Hayden Veterans Affairs Medical Center in Phoenix. "Patients should bring their own meters, and they should check their own glucose from fingerstick with either another meter in the office or with the lab." (Diabetes Care 17:1110-14, 1994)

-SHALINA S. ROBERTS

EDITORIAL COMMENT

PREVENTING DIABETES

Mary Anne Lim-Abraham, MD
President, PDA

Although, scientists have not yet been successful in discovering a cure for diabetes mellitus (DM), they have made progress in developing approaches that may prevent this disease.

For those of you who already have diabetes, the research achievements may not affect your life. But they may have a great impact on the lives of your children and future generations of your families.

A number of approaches have been developed for the prevention of Type I (Insulin Dependent Diabetes Mellitus - IDDM). One of the most promising approaches is to use low dose insulin in people who are at high risk for developing this type of diabetes (the children of parents who have Type I DM). Another drug, cyclosporin (used most commonly in renal transplantation), has shown some effectiveness by slowing the destruction of insulin producing cells. However, the side effects outweigh the possible benefits.

One of the most intriguing areas of research has been the search for the defective genes within the human chromosome that may cause Type I DM. When fully identified, gene therapy can be considered to fight the destructive process which leads to symptomatic diabetes.

In Type II (Non-insulin Dependent Diabetes Mellitus - NIDDM), scientists are still searching for the cause. Scientists at the Joslin Clinic have recently identified a gene that may contribute to the development of Type II DM. While major research is still being

done in this field, there have been advances in determining how lifestyle changes may be able to prevent Type II diabetes.

There are four major risk factors for Type II diabetes: being a blood relative of a diabetic, being over 40 years old, having a baby who weighs more than eight pounds at birth and being overweight. Except for being overweight, one cannot do very much about the other three risk factors.

In a recent study, scientists at the Harvard School of Public Health found a strong positive association between obesity and the risk for Type II diabetes. The strongest link with diabetes was found to be a large waist circumference, rather than total overweight. It is not just the amount of extra weight, but where they carry that weight that increases the risk for Type II DM. A "pot belly" (apple configuration, central obesity, abdominal obesity) was found in the highest risk group. Increased abdominal fat was associated with increased levels of free fatty acids, insulin insensitivity or resistance and abnormal glucose levels. Insulin resistance means that insulin is available but is unable to exert its maximum effect in lowering blood glucose. This is in contrast to Type I DM, where there is a relative or absolute lack of insulin.

Early obesity and total weight gain throughout adulthood are also independent risk factors for diabetes.

An exercise program may help prevent diabetes by a combination of effects. Exercise improves the body's sensitivity to insulin and improves the function of insulin receptors on body cells. Insulin needs to attach to receptors located on the surface of the cell to exert its effects (key and lock). Exercise also decreases blood glucose levels during and after physi-

cal activity.

By encouraging your children to exercise, teaching them healthy eating habits and preventing them from becoming overweight, you can reduce your children's future risk of developing diabetes.

PDA at (From page 1)

gave an overview of the syndrome and the management of the hyperlipidemic component. Obesity was discussed by Dr. Ma. Honolina S. Gomez, and hypertension by Dr. Cynthia Halili-Manabat. The session was easily one of the best attended and elicited a lot of discussions.

We survived... (From page 2)

in each and every staff and camper in Camp Joslin and I wish to share with you is "I AM OUTSTANDING! Indeed, we are outstanding.

"Our special thanks to the Philippine Center for Diabetes Education Foundation and the Joslin Diabetes Center for sponsoring our trip."



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