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**The University of the West Indies Diabetes Outreach Programme
(UDOP)**

The Caribbean Food and Nutrition Institute (CFNI)

&

**The UWI School of Nursing, Mona
(UWISON)**

present

The 12th Annual International Conference

THEME: The Diabetes Management Team

March 2 - 5, 2006

**Sunset Jamaica Grande Resort
Ocho Rios, Jamaica**

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Theme: The Diabetes Management Team

March 2 - 5, 2006

Sunset Jamaica Grande Resort
Ocho, Jamaica

Editor-in-Chief
Professor E. N. Barton

Scientific Editors
Professor the Hon. E. Y. St. A. Morrison
Professor E. Albert Reece

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UNIVERSITY OF THE WEST INDIES, MONA, KINGSTON 7, JAMAICA, W.I.



**The University of the West Indies Diabetes Outreach Programme
(UDOP)**

Caribbean Institute of Nephrology (CIN)

&

The Caribbean Food and Nutrition Institute (CFNI)

present

The 13th Annual International Conference

THEME: The Diabetic Kidney

March 1 - 4, 2007

**Sunset Jamaica Grande Resort
Ocho Rios, Jamaica**

The Diabetes Centre

ADVERTISEMENT

Days-At-A-Glance

<i>Thursday, March 2</i>		<i>Friday, March 3</i>		<i>Saturday, March 4</i>	
Time	Event	Time	Event	Time	Event

11:00 a.m.	Opening Ceremony				
11:05 a.m.	WELCOME	11:00 a.m.	Seventh Scientific Session <i>The Good News!</i>		<i>Roundtable V: Enhancing the Quality of Life through Research</i>
11:55 a.m.	First Scientific Session <i>The Sir Alister McIntyre Distinguished Lecture</i>	12:30 p.m.	LUNCH	3:00 p.m.	Fourteenth Scientific Session <i>The Team in Action</i>
12:30 p.m.	LUNCH	2:00 p.m.	Eighth Scientific Session <i>Roundtable II: Changing Roles of the Nurse in Diabetes Management</i>	7:00 p.m.	DINNER DANCE <i>The Most Hon H L Shearer Memorial Lecture</i> <i>Sunset Jamaica Grande</i>
2:00 p.m.	Second Scientific Session <i>Quality of Care</i>	3:30 p.m.	COFFEE		
3:00 p.m.	COFFEE	4:00 p.m.	Ninth Scientific Session <i>The Sir Philip Sherlock Distinguished Award & Lecture</i>	Sunday, March 5 7:30 a.m.	<i>10K/5K/2K Fun-Run-Walk</i>
3:30 p.m.	Third Scientific Session <i>Roundtable I: Diabetes, Attitudes, Wishes and Needs</i>	9:00 a.m.	Tenth Scientific Session <i>More than just a diet sheet</i>	10:00 a.m.	Satellite Symposium <i>Sunset Jamaica Grande</i>
	REPORT ON JUDGING OF POSTERS				
5:00 p.m.	Fourth Scientific Session <i>Education: The Key to Success</i>	10:00 a.m.	Eleventh Scientific Session <i>Roundtable III: Who Cares? We Do!</i>		
7:00 p.m.	WELCOME LYME	11:00 a.m.	COFFEE		
6:00 p.m.	Fifth Scientific Session <i>Diabetes Complication</i>	11:30 a.m.	Twelfth Scientific Session <i>Roundtable IV: We Continue to Care!</i>		
9:00 a.m.	Sixth Scientific Session <i>What's New? What's Exciting?</i>	12:30 p.m.	LUNCH		
10:30 a.m.	COFFEE	2:00 p.m.	Thirteenth Scientific Session		

General Information

Registration/Information/General Assistance

Registration Desk (The Conference Centre Reception Area)

Thursday, March 2 – Saturday, March 4
7:00 a.m. – 4:30 p.m.

Exhibits (The Grande Hall)

Thursday, March 2 – Saturday, March 4
9:00 a.m. – 4:00 p.m.

Poster Viewing (Lobby, Portland Ballroom)

Thursday, March 2 – Saturday, March 4
9:00 a.m. – 4:00 p.m.

Judging of Posters (Lobby, Portland Ballroom)

Thursday, March 2, 4:45 p.m. – 5:00 p.m.

Audience

The information presented is directed mainly at the members of the health care team but is also designed to facilitate understanding amongst the general public.

Conference Objectives

- To emphasize the need for teamwork in managing diabetes mellitus
- To recognize the ‘person with diabetes’ as being at the center of the team
- To identify the need for, and the timing of, consultations and referrals amongst the team
- To enhance camaraderie and collaboration amongst the team members of CARICOM in particular, as well as the wider world in general

Duality of Interest

The participant (denoted by an asterisk next to his/her name in the programme) has indicated that he/she has a relationship which, in the context of his/her participation in this professional education programme, could be perceived to represent a relevant duality of interest. The relationship is between the participant and a pharmaceutical company, biomedical manufacturer, or other corporation whose products or services are directly related to the subject matter of this professional education programme. Relevant dualities include employment by an individual concern, ownership of stock, membership on a committee or the board of directors, receiving honoraria or consulting fees, or receiving grants or funds from such corporation.

Continuing Medical Education Credits

The Caribbean College of Family Practitioners recognizes this programme for 20 credit hours.

FOREWORD

2006 coincides most meaningfully with the inauguration of the Caribbean Single Market (CSM), which heralds the more all embracing regional economy, (CSME), by 2008.

The theme for this year, 'The Diabetes Management Team', speaks to the expectation of an enhanced collaboration and networking amongst our colleagues in CARICOM.

Usually, some 40% of participants at this conference come in from Caricom territories and so we expect to use this timing of the start of CSM to emphasize a closer working together in the region.

I trust that the Diabetes Association of the Caribbean (DAC), in existence since 1982, will also use this time to re-dedicate itself to unifying our efforts throughout the region and to ensure that 'each one helps one'. Also as a cohesive unit within the North American Region of the International Diabetes Federation, I expect this new alliance within ourselves will affirm our resolve to ensure a focus from the rest of the world on the needs of the region.

2006 also marks the 30th anniversary of the Diabetes Association of Jamaica. This association can proudly present its Diabetes Centre, whose advertisement appears in this edition, and speaks of its service to the nation in bringing care and education to those in need, and a heightened awareness to all. This is even more pressing when we note the report from the Registrar General's Department that diabetes mellitus is the 2nd leading cause of death in the island. *Enough said!*

2006 is indeed a landmark year for the care-givers in diabetes, and in particular we are proud to be able to celebrate with the nurses, the 40th anniversary of The University of the West Indies School of Nursing (UWISON), formerly the Department of Advanced Nursing Education (DANE). The Sir Alister McIntyre awardee is from a nursing background and the Sir Philip Sherlock awardee has been associated with the training of care-givers in diabetes for over the past 40 years. This year also marks the 60th anniversary of the Nursing Association of Jamaica!

The tradition continues to build, and we look forward to yet another splendid learning and networking experience as our conference returns to its home in the newly acquired and renovated Sunset Jamaica Grande Resort Hotel.

I, too, celebrate my 30th year working with the Diabetes Association of Jamaica and my 12th year coordinating this conference. To you all, I extend the sunshine greeting of WELCOME & one luv!

Errol Morrison
Director, University Diabetes Outreach Programme (UDOP)
University of the West Indies, Jamaica

This is an historic and landmark event for the UWI School of Nursing, Mona to have been afforded the opportunity to partner with UDOP in hosting this prestigious scientific conference during its 40th anniversary (1966-2006). We extend our sincere appreciation to Professor the Honourable Errol Morrison for initiating this partnership. UWISON and indeed nursing is at a critical juncture in the Caribbean as it repositions itself to meet the heightened needs for qualified nurses for the local and global markets. UWISON recognizes the pivotal role of nurses in the health team and is committed to educate caring professionals to maintain safe and high quality care. The challenges are tremendous especially in light of changes in disease pattern, high cost of health care, knowledgeable consumers and the highly competitive global market. Despite the challenges, UWISON formerly ANEU has since 1966, made great strides and is determined to remain relevant, making its programmes reflective of the rapidly changing needs of the region, current practice in nursing and in unison with scientific advances. Consequently, it has provided greater access for nurses to attain university level education in both the undergraduate and graduate programmes.

On this occasion we are particularly proud to celebrate one of our regional and internationally distinguished and accomplished nurses, Dr Jean Yan, WHO Nurse Scientist. Dr. Yan has served the CARICOM countries well and has supported all the effort of the Regional Nursing Body. As she receives the Sir Alister McIntyre Award all nurses are honoured by this acknowledgement of her contribution. This tribute will do much to boost the morale of nurses as we continue to manage migration by valuing nurses' contribution to the health team.

Hermi Hewitt
Head
UWISON, Mona, Jamaica

MESSAGE FROM THE EDITOR-IN-CHIEF

Acknowledgements and Exhibitors

The Conference Organisers wish to thank the following for their support

Exhibitors

Abbott Diagnostics
Abbott Laboratories
Bayer HealthCare
Biomedical/Caledonia Laboratories
Blue Cross of Jamaica Ltd
Boehringer Ingelheim
Central Medical Laboratories
The Diabetes Association of Jamaica
Eli Lilly
Environmental Health Foundation (EHF)
Facey Commodity Limited
GlaxoSmithKline
Lascelles Laboratories
Medimpex Ja. Ltd.
Merck S.A.
National Health Fund
Novartis
Novo Nordisk
Pan American Health Organization (PAHO)
Ranbaxy Labs
Roche Diagnostics
Sanofi Aventis
T. Geddes Grant Distributors Ltd.

Speakers and Faculty

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Medical Director
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Ellen Bailey, RN, MEd
UWI School of Nursing
UWI, Mona

Ballayram PhD
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The University of the West Indies
Mona, Kingston 7

Everard Barton, MBBS, DM
Professor & Head
Dept. of Medicine
UWI, Mona, Jamaica

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Western Regional Health Authority
Epidemiology & Research Unit
P.O. Box 900, Mount Salem, St. James

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Executive Director
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1 Downer Avenue
Kingston 5, Jamaica

Michael Boyne, MD, FRCP(C) *
Endocrinologist
Tropical Medicine Research Institute
University of the West Indies
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UTECH, Jamaica

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Professor of Medicine, University of Montreal
Head, Research Group on Diabetes and
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Indiana University School of Medicine
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Mitchell Clarke, RN, MA
Regional Nursing Body
Ministry of Health

Jemmotts Lane
St. Michael, Barbados

Vernon DaCosta, MBBS, DM, MRCOG
Downer Medical Group
1 Downer Avenue
Kingston 5

Yvonne Davis
President
CANDI

Marilyn Duff, RN, PhD
The University of the West Indies School of Nursing
UWI, Mona

The Most Hon. Denise Eldemire-Shearer, MBBS, PhD
WHO/PAHO Collaborating Centre on
Aging and Health
c/o Dept. of Community Health & Psychiatry
University of the West Indies
Mona, Kingston 7, Jamaica

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Director
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Environmental Health Foundation
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President of the Senate
Government of Jamaica

Archibald McDonald, DM, FRCS(Ed), FACS

Dean
Faculty of Medical Sciences
UWI, Mona

Donovan McGrowder, PhD

Chemical Pathology
UWI, Mona

The Hon. Errol Morrison, OJ

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Laura D Richards

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UWI, Mona

Pauline Samuda, PhD

Nutrition Educator
Caribbean Food & Nutrition Institute
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Soren Skovlund

Diabetes Attitudes Wishes and Needs
Corporate Health Partnerships
Novo Nordisk
Copenhagen, Denmark

Patricia Thompson-Reid, MAT, MPH

Centers for Disease Control and Prevention
National Center for Chronic Disease Prevention and
Health Promotion (NCCDPHP)
Division of Diabetes Translation (DDT)
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Cornwall Regional Hospital
Montego Bay, Jamaica

*** Duality of Interest**

Abbreviations Used in Text

CFNI	-	Caribbean Food and Nutrition Institute
DM	-	Diabetes Mellitus
EHF	-	Environmental Health Foundation
IDDM	-	Insulin Dependent Diabetes Mellitus
NIDDM	-	Non-Insulin Dependent Diabetes Mellitus
PAHO	-	Pan American Health Organization
PM	-	Periodontal Disease
UDOP	-	University Diabetes Outreach Programme
WIMJ	-	West Indian Medical Journal
WHO	-	World Health Organization

PROGRAMME

Thursday, March 2, 2006

7:30 a.m. - 11:00 a.m. Registration

Sponsor: Blue Cross of Jamaica Ltd

OPENING CEREMONY

Chair: *The Hon. Errol Morrison, OJ*
Director, UDOP, UWI, Mona

11:05 a.m. - 11:15 a.m.	Welcome & Opening Remarks	<i>Hermi Hewitt</i> Head UWISON, Mona
11:15 a.m. - 11:30 a.m.	Keynote Address & Opening of Conference	<i>Fitzroy Henry</i> Director CFNI, UWI
11:30 a.m. - 11:45 a.m.	Dance Performance	<i>Cuban Dancers</i>

First Scientific Session

Sponsor: GlaxoSmithKline

The Sir Alister McIntyre Distinguished Award

11:45 a.m. - 11:55 p.m.	Citation	<i>Archibald McDonald</i> Dean Faculty of Medical Sciences, UWI, Mona
	Presentation of Plaque	<i>Sir Alister McIntyre</i>
11:55 a.m. - 12:25 p.m.	Sir Alister McIntyre Distinguished Lecture <i>“Improving care of patients with Diabetes through reform in Health Workforce Training”</i>	<i>Jean Yan</i> Nurse Scientist, WHO Geneva, Switzerland
12:25 p.m. - 12:30 p.m.	Vote of Thanks	<i>Steve Weaver</i> UWISON, Mona
12:30 p.m. - 2:00 p.m.	LUNCH	

Second Scientific Session

Sponsor: PAHO

Chair: *Dalip Ragoobirsingh*
PAHO, Washington

QUALITY OF CARE

2:00 p.m. - 2:20 p.m.	The Importance of Patient Education In the Management of Diabetes Mellitus	<i>Charles M. Clark</i> Indiana University School of Medicine Indianapolis, IN, USA
2:20 p.m. - 2:40 p.m.	The Untapped Potential: The Role of the Community in Diabetes Prevention & Control Prevention	<i>Patricia Thompson-Reid</i> Centers for Disease Control & Atlanta, USA
2:40 p.m. - 3:00 p.m.	A Diabetes Education Curriculum for the Caribbean	<i>Dalip Ragoobirsingh</i> PAHO, Washington
3:00 p.m. - 3:30 p.m.	COFFEE	

Third Scientific Session

Sponsors: Novo Nordisk

Chair: *Soren E Skovlund*
DAWN Programme
Novo Nordisk, Denmark

ROUNDTABLE I: DIABETES: ATTITUDES, WISHES AND NEEDS

3:30 p.m. - 3:55 p.m.	The health economics of Diabetes care	<i>Ballayram</i> CFNI, Jamaica
3:55 p.m. - 4:20 p.m.	DAWN Study	<i>Soren E Skovlund</i> DAWN Programme Novo Nordisk, Denmark
4:20 p.m. - 4:45 p.m.	Panel Discussion with the Nursing team and diabetic patients	<i>Isolyn Bell-Rose</i> <i>Melody Whitehorne</i> <i>Andrea Hunt</i>

REPORT ON JUDGING OF POSTERS - *The Most Hon. Denise Eldemire-Shearer*
Head
Dept. of Community Health & Psychiatry
UWI, Mona

Fourth Scientific Session

Sponsor: Diabetes Care and Education Practice Group of the American Dietetic Association

Chair: *Suzanne Laws*

EDUCATION: THE KEY TO SUCCESS

5:00 p.m. - 5:45 p.m.	Lifestyle Coaching Using the Diabetes Prevention Program (DPP) Model	<i>Sandy Gillespie</i> Diabetes Resource Center Piedmont Hospital, Atlanta, GA
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Fifth Scientific Session

Sponsor: Merck S.A.

Chair: *Phillip Henry*

DIABETES COMPLICATION

6:00 p.m. - 7:00 p.m.	Early diagnosis and treatment of Diabetic Nephropathy	<i>Curtis Yeates</i> Cornwall Regional Hospital, Jamaica
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7.00 p.m. - 8.00 p.m. ***WELCOME LYME***

Friday, March 3, 2006

Sixth Scientific Session

Sponsor: Eli Lilly

Chair: *Marilyn Duff*
UWISON, Mona, Jamaica

WHAT'S NEW? WHAT'S EXCITING?

9:00 a.m. - 9:30 a.m.	The Growing Importance of Diabetes Care	<i>Jose Antonio Nino, MD</i> Medical Advisor, Eli Lilly
9:30 a.m. - 10:00 a.m.	What's new and exciting?	<i>Michael Boyne</i> Tropical Medicine Research Institute UWI, Mona, Kingston 7
10:00 a.m. - 10:30 a.m.	Pioglitazone: Breaking new frontiers	<i>Karen Phillips</i> Tropical Medicine Research Institute UWI, Mona
10:30 a.m. - 11:00 a.m.	COFFEE	

Seventh Scientific Session

Sponsor: Bayer HealthCare

Chair: **Ellen Bailey**
UWISON, Mona, Jamaica

THE GOOD NEWS!

- | | | |
|-------------------------|---|---|
| 11:00 a.m. - 11:30 a.m. | The prevention of Type 2 diabetes | Jean-Louis Chiasson
University of Montreal, Canada |
| 11:30 a.m. - 12:00 p.m. | Obesity and Insulin Resistance -
Precursors to Type II Diabetes Mellitus -
and their Management | Rosemarie Wright-Pascoe
Dept. of Medicine
UWI, Mona, Jamaica |
| 12:00 p.m. – 12:30 p.m. | A Multidisciplinary Team Approach:
A Success? | Carlisle Goddard
Rosewood Medical Centre
Barbados |
| 12:30 p.m. - 2:00 p.m. | LUNCH | |

Eighth Scientific Session

Sponsor: Regional Nursing Body

Chair: **Mitchell Clarke**
Chairman
Regional Nursing Body

**ROUNDTABLE II:
CHANGING ROLES OF THE NURSE IN
DIABETES MANAGEMENT**

- | | | |
|-----------------------|---|--|
| 2:00 p.m. - 2:30 p.m. | Primary Care - Nurses Role in Diabetes prevention:
A Wellness Promotion Approach | Isolyn Bell-Rose
Western Regional Health Authority |
| 2:30 p.m. - 3:00 p.m. | Secondary Care - Patient Care Management:
A Case Study | Andrea Hunt
UHWI School of Nursing |
| 3:00 p.m. - 3:30 p.m. | Tertiary Care – Psycho-Social Management
of Diabetes with Comorbidities | Lisa Hamilton-Service
Cornwall Regional Hospital |
| 3:30 p.m. - 4:00 p.m. | COFFEE | |

Ninth Scientific Session

Sponsor: Environmental Health Foundation

Chair: **Henry Lowe**
Chairman
Environmental Health Foundation
Jamaica

The Sir Philip Sherlock Distinguished Award

4.00 p.m. - 4.10 p.m.	Citation & Presentation of Plaque	Hon Syringa Marshall- Burnett President of the Senate Government of Jamaica
4.10 p.m. - 5.00 p.m.	The Sir Philip Sherlock Distinguished Lecture <i>“Diabetes Mellitus in the Twentieth Century: The Evolution of Revolutionary Concepts”</i>	Knox Hagley Awardee

Saturday, March 4, 2006

Tenth Scientific Session

Sponsor: CFNI/CANDI

Chair: **Godfrey Xuereb**
CFNI, Jamaica

MORE THAN JUST A DIET SHEET

9:05 a.m. - 9:20 a.m.	Nutrition and dietetic professionals as an integral part of the Diabetes management Team	Yvonne Davis President, CANDI
9:20 a.m. - 9:35 a.m.	The Nutrition and Dietetics Professional as a member of the Diabetes Management Team: Roles and Functions	Pauline Samuda Nutrition Educator, CFNI
9:35 a.m. - 9:50 a.m.	Responsibilities and interaction of other team members in the nutritional management of diabetes	Laura D Richards Medical Dietitian, CFNI

Eleventh Scientific Session

Sponsor: Roche Pharmaceuticals

Chair: **Fay Whitbourne-Morrison**
Chairman
Central Medical Laboratories, Jamaica

ROUNDTABLE III: WHO CARES? WE DO!

10:00 a.m. - 10:20 a.m.	Preconception care for women with diabetes	Vernon DaCosta Diabetes Centre, Jamaica
10:20 a.m. - 10:40 a.m.	Diabetes and your vision - Forget me not	Leon Vaughn Medical Assn. of Jamaica
10:40 a.m. - 11:00 a.m.	Diabetes: Forget not the Kidney	Everard Barton Dept. of Medicine UWI, Mona
11.00 a.m. - 11.30 am	COFFEE	

Twelfth Scientific Session

Sponsor: Biomedical/Caledonia Laboratories

Chair: **Lurline Less**
Executive Chairman
Diabetes Assn of Jamaica

**ROUNDTABLE IV:
WE CONTINUE TO CARE!**

11:30 p.m. - 11:50 a.m.	Diabetes & Periodontal Disease Current knowledge on relationship between DM & PD	Peter Glaze Dental Associates, Jamaica
11:50 a.m. - 12:10 a.m.	The role of the Chiropodist in Diabetes Management	Owen Bernard Diabetes Assn. of Jamaica
12:10 a.m. - 12:30 p.m.	The role of the Pharmacist in Diabetes Management	Eugenie Brown-Myrie Faculty of Health & Applied Sciences UTECH, Jamaica
12:30 p.m. - 2:00 p.m.	LUNCH	

Thirteenth Scientific Session

Sponsor: GlaxoSmithKline

Chair: **Donovan McGrowder**
Chemical Pathology
UWI, Mona

**ROUNDTABLE V:
ENHANCING THE QUALITY OF LIFE THROUGH RESEARCH**

2:00 p.m. – 2:30 p.m.	A new approach to Chronic Illness management: Applying Wagner’s Chronic Care Model in the Jamaican setting	Yvette Williams Atlanta VA Medical Center
2:30 p.m. – 3:00 p.m.	Meet the Experts	Rosemarie Wright-Pascoe Curtis Yeates Errol Morrison

Fourteenth Scientific Session

Sponsor: Bayer Healthcare

Chair: **Valerie Hardware**
University Hospital School of Nursing
Jamaica

THE TEAM IN ACTION

3:00 p.m. - 4:00pm	The Inter-Disciplinary Integrated Care Team - A model for Optimum Treatment of Diabetes Mellitus – Scenarios	Alverston Bailey Vice President Medical Association of Jamaica
4:00 p.m. - 4:15 p.m.	Closing Overview	Oscar Jordan Belleville Medical Clinic, Barbados
7:00 p.m. - 12:00 p.m.	Dinner Dance	Entertainment by Ernie Smith

The Most Hon. Hugh Shearer Memorial Lecture
The Right Hon. Owen Arthurs
Prime Minister, Barbados

Sunset Jamaica Grande

Sunday, March 5, 2006

Sponsor: Merck S.A.

7:30 a.m.

FUN/RUN/WALK

Sponsor: Sanofi Aventis

10:00 a.m. - 12:00 p.m.

Satellite Symposium

Preventing or delaying end-stage complications
in the diabetic patient: Who are the key players?

Michael Boyne*

Opening Ceremony

Chair: Errol Morrison

KEYNOTE ADDRESS

Fitzroy Henry

Jean Yan
Sir Alister McIntyre Distinguished Awardee for outstanding services
internationally in the field of nursing

Chair: Archibald McDonald

Improving Care of Patients with Diabetes through Reform in Health Workforce Training

Diabetes is a major threat to global public health that is rapidly escalating. It is estimated that more than 170 million people are suffering from diabetes globally and this number is expected to double by 2030. Diabetes and its multiple complications are extremely burdensome on the health and economics of countries worldwide. In developing countries adherence to therapies is as low as 20% - resulting in poor health outcomes at a very high costs to society, governments and families. If not successfully managed, diabetes along with other chronic diseases, will become the most expensive problem faced by the health care systems.

To better meet the needs of caring for patients with diabetes, a new care perspective and reform in the training of the health workforce are essential. The new care perspective advocates for the use of the Innovative Care for Chronic Conditions framework which integrates prevention, control and treatment of the disease across multiple levels of health care system particularly in low resource settings. It endorses cost-effective measures to prevent common risk factors and addresses common health care needs. This framework places the patient and their families at the center of the health system, connects communities with health care organizations, and endorses a supportive policy

environment that organizes the values, principles and general strategies for reducing the burden of the disease.

The transformation in health care organizations is however impossible without reform in the training of the workforce that provides the care. Chronic health problems, particularly diabetes is placing new and different demands on the health care workforce. To provide effective health care for diabetic patients and their families, the skills of health professionals need to be expanded to meet these new complexities. A new expanded training model based on a set of core competencies could better prepare the health workforce to care for diabetic patients and their families.

The core competencies are a guide for long overdue training reform. These competencies are basic and indispensable cornerstones for providing care for patients with diabetes and apply to all health care providers irrespective of discipline. Patient-centered care, partnering, quality improvement, information and communication technology and public health perspective make up the core set of competencies for diabetic care. Educational reform of the health workforce will be possible through the concerted and sustained efforts among decision makers, academic leaders and health professional organizations.

Previous Awardees

Prof. Jean-Philippe Assal	(Switzerland)	1999
Prof. Harry Keen	(UK)	2000
Prof. Jasbir Bajaj	(India)	2001
Prof. Phillip James	(UK)	2002
Dr. Richard Kahn	(USA)	2003

Dr. James Gavin, III	(USA)	2004
Dr. Alexander Kalache	(Brazil)	2005

2nd Scientific Session

QUALITY OF CARE

Chair: Dalip Ragoobirsingh

The Importance of Patient Education in the Management of Diabetes Mellitus

Charles M. Clark

The presentation will briefly review diabetes statistics and the alarming increase in diabetes that has been forecasted for the developing world. The cost of diabetes to both the patient and the health care system will also be reviewed.

Given the imminent epidemic, and the impact of glycemic control on diabetes outcomes, diabetes education for health professionals and patients is essential. A number of programs in Latin America have been very successful and can serve as models. CADIEQ, PROCAMEG, and PROPAT are three such programs.

Surprisingly, before 1999 Argentina did not have an organized system of health professional diabetes education teams. Successful programs in developing various educational programs for all members of the diabetes health care team will be discussed. CADIEQ is a program to develop diabetes education teams. Team members include nurses, podiatrists, diabetes educators, nutritionists, physical therapists, and social workers. The programs are small with 8-12 participants

and each participant is evaluated pre and post course. Upon completion, the trained professional returns to their health care settings to set up health care teams in collaboration with the physician.

PROCAMEG is an intensive program to train primary care physicians in diabetes care. The program, conducted by diabetes specialists, has delivered outstanding results.

A third program, PROPAT, is a comprehensive diabetes care program in a HMO setting providing care to government workers.

Finally, PENDID-LA is a collaborative project in Latin America and the Caribbean which is a multi-national Latin American educational initiative for people with type 2 diabetes. This program serves as an excellent proven model for diabetes education as all parameters measured had improved significantly, thus reducing risk factors for patients.

Two educational programs DAP and PROPAT also implemented comprehensive care programs in addition to their educational aspects. This combination resulted in the greatest improvement in patient outcomes.

The Untapped Potential: The Role of the Community in Diabetes Prevention & Control

Patricia Thompson-Reid

The theoretical underpinnings of the community organizing/development effort such as health promotion, community empowerment, and community participation, will be presented with focus on the engagement of the community members as an overall strategy for involving community members in efforts related to the prevention and control of diabetes. The recommendations of the *The Guide to Community Prevention Services* on the effectiveness of community based interventions

for diabetes self management will be presented. Examples of interventions such as “Diabetes Today” and the health communications strategies being utilized in the development of educational materials in the National Diabetes Education Program (NDEP) will also be presented and discussed.

A DIABETES EDUCATION CURRICULUM FOR THE CARIBBEAN

Dalip Ragoobirsingh

The global prevalence of diabetes is 194 million people world- wide. It is urgent that attention be given to the prevention and management of this disease. A significant strategy for both is that of diabetes education.

The Unit of Non-communicable Diseases of the Pan American Health Organization in collaboration with the University of the West Indies Diabetes Outreach Programme has prepared a draft curriculum for Diabetes Education in the Caribbean.

In this draft document, using the International Diabetes Federation curriculum as a basis, several modules of the latter have been adapted to the Caribbean setting. This has been circulated to the ministries of health and other health related professional groups, including the university community, in the countries of the region for their inputs. It is in the process of being tested and finalized. The curriculum will be offered as a Certified Diabetes Education program to health professionals across the region through the university. A distance learning module will be incorporated to the program to increase accessibility and affordability to the lesser developed islands particularly.

This education program would play a pivotal role in assisting health care professionals, individuals with diabetes and their care givers, as well as policy makers to implement change, to effectively manage diabetes and prevent its complications.

3rd Scientific Session

**ROUNDTABLE 1:
DIABETES: ATTITUDES, WISHES AND NEEDS**

Chair: Soren E. Skovlund

The Health economics of Diabetes care
Ballayram

DAWN STUDY (DIABETES ATTITUDES WISHES AND NEEDS)
Soren E. Skovlund

The DAWN Programme was created because more than half of people with diabetes do not achieve good health and quality of life, despite the availability of effective medical treatments.

Filling knowledge gaps

Although a considerable amount of psychosocial research had been carried out which pointed to psychosocial issues as the reason for poor outcomes, there were no large, truly global studies to map the problem. Important gaps in knowledge existed, particularly concerning data which would (a) allow for international comparisons of management approaches to diabetes, (b) examine the complex

relationships between the stakeholders – people with diabetes and their families, the physicians, the nurses and their support teams, and (c) enable policy makers and other stakeholders to recommend changes where needed.

The DAWN (Diabetes Attitudes Wishes and Needs) study in 2001 was a massive collaborative undertaking involving Novo Nordisk, the International Diabetes Federation and an international expert advisory board – the largest diabetes study of its kind ever conducted.

The DAWN study 2001 is to date the largest global psychosocial diabetes study of its kind, addressing the perceptions and attitudes of more than 5,000 people with diabetes and 3,000 healthcare diabetes professionals in a total of thirteen countries.

To ensure the highest possible scientific quality of the DAWN Study, an international scientific advisory panel was convened under the chairmanship of Professor Sir George Alberti, then president of the International Diabetes Federation (IDF). The study involved: 5,426 adults with diabetes, 2,194 primary care physicians, 556 specialists (endocrinologists, diabetologists), 1,122 nurses (specialist and general).

Summary of key findings

The DAWN study provided a wealth of information which is being used for teaching and training purposes around the world. It confirmed the importance of the following factors for improving health and life quality for people with diabetes (Practical Diabetes International 2004):

1. Enhance communications between people with diabetes and healthcare providers
2. Promote team-based diabetes care

3. Promote active self-management
4. Overcome emotional barriers to effective therapy
5. Enable better psychological care for people with diabetes

From study to action

The DAWN study provided a blueprint of what it means to live with diabetes and what challenges healthcare providers are facing in their efforts to help their patients control and manage their condition effectively.

With these conclusive insights about critical needs and gaps, the DAWN study has proven itself an important platform for dialogue and partnerships and as a decision making tool to improve outcomes of diabetes care.

4th Scientific Session

EDUCATION: THE KEY TO SUCCESS

Chair: Suzanne Laws

Lifestyle Coaching using the Diabetes Prevention Program (DPP) Model

Sandy Gillespie

The purpose of the presentation is to provide diabetes team members with strategies and tools for lifestyle intervention for diabetes and prediabetes based on the success of the Diabetes Prevention Program (DPP). The DPP was a 27-center randomized clinical trial conducted in the U.S. comparing the efficacy of lifestyle intervention versus pharmacological therapy (metformin) in the prevention

of diabetes in individuals with impaired glucose tolerance (IGT) (1, 2). Lifestyle intervention decreased the incidence of type 2 diabetes by 58% compared with 31% in the metformin-treated group.

Key aspects of the DPP Protocol include:

- Clearly defined weight loss (7% of initial body weight) and physical activity (150 minutes of moderate physical activity per week) goals
- Individual case managers or “lifestyle coaches”
- Intensive, ongoing intervention
- A “toolbox” of behavioral and other strategies for adherence
- Materials and strategies individualized for target population needs
- Use of extensive local and national networks for support
- Dietary modification focusing on reducing total fat rather than calories
- Self-monitoring using lifestyle logs for recording food intake and physical activity

Diabetes clinics and education programs can adapt elements of the DPP to a variety of patient populations based on available resources. At Piedmont Hospital, we have recruited program participants through our employee health department. For a nominal fee, employees with prediabetes can participate in a 12-week program. Weekly group sessions include exercise, primarily walking, with the lifestyle coaches, followed by a class on a behavioral or nutrition topic. Before, during, and after the formal 12-week program, coaches are available for consultation. Although we can't make the disease go away in our patients who have been diagnosed with diabetes, we can seek to improve their outcomes through selective use of the DPP protocol, which is available in detail on the Web site, and the published experience of the health professional participants. We may not have the resources available to the DPP centers in terms of personnel, time and money, but we can still make

use of the extensive materials available on the Web site

<http://www.bsc.gwu.edu/dpp/index.htmlvdoc> (select Lifestyle Manuals).

The “Small Steps Big Rewards” program materials for prevention of type 2 diabetes are available on the National Diabetes Education (NDEP) Web site

http://ndep.nih.gov/campaigns/SmallSteps/SmallSteps_index.htm (select NDEP’s Publication Catalog for materials to download or order).

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5th Scientific Session

DIABETES COMPLICATION

Chair: Phillip Henry

DIABETIC NEPHROPATHY

Curtis Yeates

This interactive presentation is to provide health care providers with the tools to identify, stage and treat early diabetic renal disease (diabetic nephropathy).

Diabetes Mellitus has increased in prevalence worldwide. This increase has been linked to several factors, lifestyle being an important factor. This increase in prevalence of course, resulted in a proportional increase in people with diabetic kidney disease (diabetic nephropathy).

Diabetes is the leading cause of renal failure in the United States of America and Europe and is the second leading cause of renal failure in Jamaica. Chronic kidney disease is a risk factor of cardiovascular disease. End stage renal failure patients with diabetes have a worst cardiovascular prognosis than non-diabetic with end stage renal failure. Diabetic Nephropathy, untreated and/or unrecognized, would provide an unnecessary burden on every practice or health system.

Early diabetic nephropathy can be treated or progression slowed, therefore, early recognition and action would therefore have the potential of:

- Halting or slowing the progression of renal disease.

- Improving modifiable cardiovascular risk factors, therefore improving the prognosis of diabetic kidney disease patients.

- Reducing amount of patients on dialysis.

- Reducing burden on health system.

- Preparing patients for kidney replacement treatment.

Intervention or action would include a combination of the following:

Aggressive blood pressure control; use of ace inhibitor and/or ARB

Aggressive blood sugar control

Lipid Management

Anemia Management

Staging

Counselling

Preparation for dialysis

6th Scientific Session

WHAT'S NEW? WHAT'S EXCITING?

Chair: Marilyn Duff

The Growing Importance of Diabetes Care

Antonio José Niño

Diabetes Mellitus is a growing problem in the whole world as the prevalence of this disease is increasing.

In 2002 in USA 18.2 million people had diabetes mellitus, being undiagnosed 5.2 million. The number of new cases increase by 1.3 million per year.

The consequences of the disease are enormous as 65% of the diabetic patients die from cardiovascular disease or stroke, 43% of newly diagnosed end stage renal disease is caused by diabetes mellitus and we are observing an alarming increase in number of cases of micro vascular

diabetic complications. This combination of events is imposing a burden much higher than the capacity to afford it.

In the last 15 years some surveys had shown a decrease of diabetic control in terms of A1C and glycemic levels.

Diabetic complications are predicted by glycemic and A1C control and good control is determinant to reduce macro and microvascular complications as shown by different studies as UKPDS, EPIC and other studies.

Studies as DECODE, Honolulu heart study, showed that postprandial blood glucose is a surrogate variable of cardiovascular events. Subsequently was determined the paramount importance of postprandial blood glucose in A1C level.

We review principles of insulin therapy and insulin regimens to achieve the best results in diabetes mellitus control, focusing on striving to mimic normal insulin secretion.

Insulin lispro returns glucose concentrations to premeal values in half the time, reduces 53% of 2 hours postprandial glucose rise and its use is associated with 40% less hypoglycemic events compared with regular insulin.

We need to improve control of diabetes patients' in order to achieve a reduction in diabetic complications and sequelae.

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What is new and exciting?

Michael S. Boyne

These are the best and worst of times for diabetes. Times are “worst,” as the obesity pandemic is fuelling a diabetes epidemic in developed and developing countries. About 194 million people have diabetes in 2005 and this will blossom to 366 million in 2025. Times are “best,” as there has never been a time when so much biomedical research and pharmaceutical interest are focused on diabetes.

Clinical trials have exploded our understanding on how to reduce the risk of diabetic complications. The critical role of lipid, blood pressure, glycaemia and neuro-hormonal modification has been highlighted by CARDS, UKPDS, MICRO-HOPE, DCCT/EDIC, Steno-2, etc. We have a better understanding of the benefits of lifestyle modification in preventing diabetes (i.e. DPS and DPP

trials). The role of insulin sensitization is being clarified by TRIPOD, PROactive and other ongoing trials involving glitazones.

Novel medications are also generating excitement. Inhaled insulin is on the cusp of FDA approval. Insulin patches and oral insulin preparations are being evaluated. Medications which augment insulin secretion and ameliorate appetite are now on the market (pramlintide and exenatide). “Designer insulins” help to ease the burden of diabetes care by minimizing hypoglycaemia and improving compliance.

Devices for diabetes care are becoming commonplace. Technology has transformed home blood glucose monitoring and insulin delivery. Advances are being made in “closing the loop,” i.e. linking glucose sensing to insulin delivery, thus making an artificial pancreas a real possibility. Islet cell transplant and stem cell technology also seem to be promising for the future.

Pioglitazone: Breaking new frontiers

Karen Phillips

Background: Patients with Type 2 Diabetes are at high risk of fatal and non fatal myocardial infarction and stroke. The peroxisome proliferator gamma receptor agonists have been shown indirectly to reduce the incidence of these macrovascular complications. The aim of this study therefore was to investigate whether pioglitazone reduces macrovascular morbidity and mortality in high risk type 2 diabetic patients

Methods: A prospective, randomized control trial was conducted in 5238 patients with evidence of macrovascular disease. Patients were recruited from primary care practices and hospitals. These patients were assigned to oral pioglitazone titrated from 15mg to 45 mg (n= 2605) or matching placebo (n = 2633), to be taken in addition to their other antidiabetic drugs and other medications. The primary endpoint was the composite of all cause mortality, nonfatal myocardial infarction (including silent myocardial infarction), stroke, acute coronary syndrome, endovascular or surgical intervention in the coronary or leg arteries, and amputation above the ankle. Analysis was by intention to treat.

Findings: Two patients were lost to follow up, but were included in analyses. The average time of observation was 34.5 months. 514 of 2605 patients in the pioglitazone and 572 of 2633 patients in the placebo group had at least one event in the primary composite endpoint (HR 0.90, 95% CI 0.80 – 1.02, p=0.095). The main secondary endpoint was the composite of all cause mortality, non-fatal myocardial infarction, and stroke. 301 patients in the pioglitazone group reached this endpoint and 358 in the placebo group reached this endpoint (0.84, 0.72 – 0.98, p=0.027). Overall safety and tolerability was good with no change in the safety profile of pioglitazone identified. 6% (149 of 2065) and 4% (108 of 2633) of those in the pioglitazone and placebo groups, respectively, were admitted to hospital with heart failure; mortality rates from heart failure did not differ between groups.

Interpretation: Pioglitazone reduces the composite of all-cause mortality, nonfatal myocardial infarction, and stroke in patients with type 2 diabetes who have a high risk of macrovascular events.

THE GOOD NEWS

Chair: Ellen Bailey

The Prevention of Type 2 diabetes

Jean-Louis Chiasson

The increasing prevalence of diabetes is reaching epidemic proportion worldwide. Because of its associated morbidity and mortality, it is exerting a major pressure on the healthcare system. With a better understanding of the pathophysiology of type 2 diabetes, the concept of primary prevention has emerged. A number of studies have now confirmed that both lifestyle modification program and pharmacological interventions in subjects with impaired glucose tolerance (IGT) can prevent or delay the progression of diabetes. The Diabetes Prevention Study and the Diabetes Prevention Program (DPP) have shown that intensive lifestyle modification could reduce the risk of diabetes by 58 % in subjects with IGT. The DPP has also shown that metformin could reduced the risk of diabetes by 31 % in the same high-risk population. The STOP-NIDDM trial confirmed the efficacy of acarbose in decreasing the risk of diabetes by 36%. The TRIPOD study showed that troglitazone could reduce the risk of diabetes by 55% in Hispanic women with a history of gestational diabetes. And more recently, the XENDOS study showed that in very obese subjects on intensive lifestyle modification program, Xenical treatment was associated with a 37% reduction in the incidence of diabetes. A number of studies have suggested that treatment with inhibitors of the renin-angiotensin aldosterone system in high risk population for CVD were associated with a significant reduction in the risk of diabetes as a secondary outcome. It has also been suggested that pravastatin and estrogen/progesterone treatment were associated with 30% and 35% risk reduction in the incidence of diabetes, also as a secondary outcome. The evidence is overwhelming... diabetes can be

prevented or delayed in high-risk population through lifestyle modification or pharmacological intervention. This new knowledge now has to be translated in the real world into well-defined strategies for screening and treating high-risk population. Prevention of the disease is our only chance to alleviate the ever growing burden of diabetes mellitus in the world.

Obesity and Insulin Resistance-Precursors to Type 2 Diabetes Mellitus and their management

Rosemarie Wright-Pascoe

The prevalence of obesity has increased in both developing and developed countries of the World (1). There has also been a world-wide increase in the prevalence of diabetes mellitus. At the start of the millennium there were 150 million persons with diabetes. In the year 2025 this is expected to double. The commonest form of diabetes mellitus is type 2 diabetes mellitus (T2DM). T2DM is diagnosed when insulin resistance and decreased pancreatic beta cell function cause an elevation of plasma glucose. The natural history of T2DM starts with normal glucose tolerance and insulin resistance which results in compensatory hyperinsulinaemia. This progresses to impaired fasting glucose (IFG) and glucose tolerance (IGT) and then overt diabetes mellitus. The progression from normal glucose tolerance to IGT is related to a decrease in tissue sensitivity to insulin. This insulin resistance impairs glucose disposal in the muscles and liver. Impairment of adipose tissue lipolysis also occurs. The result is an excess of free fatty acids and glycerol which affect glucose homeostasis. This defective action of insulin on glucose uptake and lipolysis is also seen in obese individuals who are not diabetic and may be related to a reduction in insulin receptor activity (2). Impaired glucose tolerance is a strong predictor of myocardial infarction and stroke probably reflecting the association with metabolic syndrome and the insulin resistance (3, 4). The development to overt type 2 diabetes mellitus does not however occur in the absence of a significant defect in beta cell function. Defects

may be genetically-related but acquired defects may result in overt diabetes mellitus. Examples of acquired defects which impair insulin secretion include glucotoxicity and lipotoxicity. Chronic exposure of beta cells to the elevated free acyl CoA seen in obesity inhibits insulin secretion. In addition, the fatty acyl CoA within the beta cells augment nitric oxide synthetase which results in the formation of inflammatory cytokines which further impair beta cell function and cause apoptosis of beta cells. The amount of insulin secreted by the beta cells is a reflection of the number of beta cells present. In obesity without diabetes, there is a significant decrease in the beta cell mass (5). That the progression to normoglycaemia to IGT and then to overt diabetes mellitus is strongly associated with obesity is therefore not unexpected and the association between the two disorders has been called DIABESITY. In this presentation we will further discuss mechanisms to address the insulin resistance which is central to this disorder.

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A Multidisciplinary Team Approach: A Success?

Carlisle Goddard

Healthcare systems in the Caribbean provide services through General Hospitals complimented by systems of primary care out-patient satellite clinics known as Polyclinics or Health Centres. As the burden of Chronic Non Communicable Diseases continues to rise, this practice model must be either greatly expanded or modified to become more efficient in providing the volume and quality of services required. Reason favours efficiency.

In Barbados, the Warrens polyclinic is designated as the pilot Primary Care Diabetes Unit and 930 persons are registered in a twice-weekly Diabetes Clinic. A pre-study audit of patient records revealed gross underutilization of services offered by the polyclinic. In addition to an overall non attendance rate of 17%: only 22% of persons with diabetes were doing self blood glucose monitoring; only 33% attended Podiatry clinics, 40% attended Dietetics and 8% attended the Diabetes Association support group meetings. Consistent with previous reports, average glycaemic control was suboptimal with 73% of patients having an HbA1c >10%.

We report our one-year experience using the multi-disciplinary approach, with a team comprised of a Dietitian, Podiatrist, Diabetes Nurse, Diabetologist and Social Worker. In the study group: mean HbA1c is 7.6%; 70% are performing self blood glucose monitoring, 80% are attending both podiatry and dietetic clinics and there is 100% attendance at the Diabetes Clinic.

Conclusion: The Warrens multidisciplinary diabetes team has positively impacted the care of persons with diabetes and the model should be extended nationally.

ROUNDTABLE II: CHANGING ROLES OF THE NURSE IN DIABETES MANAGEMENT

Chair: Mitchell Clarke

Primary Care – Nurses role in Diabetes Prevention: A Wellness Promotion Approach

Isolyn Bell-Rose

There is substantial evidence from recent clinical trials that Type 2 diabetes can be prevented or delayed. Diabetes prevention solutions that focus on lifestyle modification, specifically modest weight loss and increased physical activity are likely to have additional health benefits.

It is proposed that wellness in diabetes prevention can be achieved through education and training of health workers (multi-disciplinary team approach) addressing knowledge, skills and empowerment; demonstrating a focus on wellness, and facilitating health promotion strategies and activities.

Building on existing community strengths within a supportive environment, and forging alliances with other stakeholders and the media are vital to achieving outcomes.

Chronic non-communicable diseases relate to life cycle events. Nurses interact with clients at all stages of the life cycle; they have critical roles to play in diabetes prevention. This paper will focus on the nurse as an educator and community resource, as part of the team empowered towards health promotion and health maintenance. In the teaching, the nurse should include: the natural history of diabetes, self-evaluation of risks, increased physical activities, preventing obesity, balanced nutrition, maintaining healthy weight, regular health checks, self empowerment and family and community support towards maintaining healthy lifestyles.

Secondary Care – Patient Care Management: A Case Study

Andrea Hunt

The purpose of this case study was to evaluate the impact of diabetes education, on the quality of life of a 78 year old patient with a 40 year history of type 1 diabetes. The client was recently diagnosed with Alzheimers disease; and has experienced multiple hypoglycemic events complicated by hypoglycemic unawareness.

By utilizing the nursing process of assessment, planning, intervention and evaluation, core concepts in diabetes self-management were taught to family members and other caregivers. Changes were made in insulin regime to a basal/bolus type protocol following collaboration with the attending endocrinologist; and the caregivers were taught the relationship between insulin action times and basic carbohydrate/exchange concepts. Blood glucoses were used as the indicator of improved management, as well as patient being able to maintain present levels of activity without complications. Family and patient quality of life were also evaluated.

After 4 weeks, blood glucose results indicated a marked decrease in the frequency of hypoglycemic episodes, and an increased understanding of the core concepts of daily self management skills among caregivers and family. Follow-up continues.

Tertiary Care – Psychosocial Management of a client with Diabetes

Lisa Hamilton-Service

The definition of health as a “state of well being” looks at the whole person bringing all aspects of the “mind body” connection into coordination toward wellness. The World Health organization has aptly stated, “there is no good health without good mental health”, pointing us to the holistic health care where the client is treated as a whole which will result in more desired outcomes.

The literature reveals that clients diagnosed with a chronic illness could be extremely frightened, creating psychological trauma for self and family. An individual's mental status dictates his level of motivation, involvement in self-care, ability to adjust, cope and make decisions for health. The American Psychiatric Association stated, "The link between mental and physical disorders must be addressed if both are to be treated successfully" and there is growing evidence. This U.S. Institute of Medicine's statement 2001 supports this; "human behaviour plays a central role in the maintenance of health". World Federation for Mental Health (2004) reported that people living with diabetes, cancer and cardio vascular diseases have increased risk for depression. The severity of the medical condition increases the probability for mental health problems. However if diagnosed and treated for co-existing disorders the medical and quality of life improvement is significant. Therefore it is important for clinicians to note the increased difficulty for individuals to function on a day-to-day basis with impaired mental status.

This paper will review the approach to managing the psychosocial issues of the individual with diabetes. Focusing on: emotional, interpersonal, regimen related, and clinician related issues, with emphasis on intervention such as social support, assertiveness training, self-efficacy, management and clinician-patient therapeutic alliance. Motivation toward wellness is a mental health issue.

THE SIR PHILIP SHERLOCK DISTINGUISHED AWARD

Chair: Henry Lowe

Diabetes Mellitus in the Twentieth Century: The Evolution of Revolutionary Concepts

Knox Hagley

Concepts of the nature and pathogenesis of *diabetes mellitus* after its discovery 4000 years ago were rooted in abstract thinking. The discovery of the action and importance of insulin in the metabolism of glucose, not surprisingly, led to the belief that lack of insulin was the critical factor in the development of the disease. Furthermore, dramatic results obtained in the third decade of the century from the administration of insulin to persons who were obviously perishing from the ravages of diabetes, apparently sealed this thinking. However, subsequent discovery that insulin administration was not necessary for the reduction of glycosuria and indeed for the control of the disease raised 'queries' about the role of insulin. The later demonstration that diabetes had developed in persons whose serum insulin levels were not only adequate, but excessive, further confounded the ideas and thinking of both clinicians and researchers in the field of diabetes. Birth of the concept of insulin resistance then took place and provided an answer to some of the questions. Nevertheless insulin production by the beta cells continued to attract attention and beta cell failure in Type 2 diabetes is now being demonstrated. What must be of further interest however is that the presence of insulin resistance is not confined to persons without any evidence of glucose intolerance. And so the evolution of concepts continues.....

Previous Awardees:

Prof. Rolf Richards, MBBS, FRCP	(Jamaica/Trinidad)	(2000)
Prof. David Picou, MBBS, PhD	(Jamaica/Trinidad)	(2001)
Prof. Sir George Alleyne, OCC, MBBS, FRCP, FACP	(Jamaica/Barbados)	(2002)
Prof. Rene Charles, MD	(Haiti)	(2003)
Dr. Compton Seaforth	(Trinidad)	(2004)
Ron Raab	(Australia)	(2005)

10th Scientific Session

MORE THAN JUST A DIET SHEET

Chair: Godfrey Xuereb

Nutrition and dietetic professionals as an integral part of the Diabetes management Team

Yvonne Davis

Medical nutrition therapy (MNT) is integral to total diabetes care and management requiring coordinated team work. The skilled and knowledgeable Dietitian//Nutritionist is able to perform a complete assessment, implement and evaluate the dietary prescription and make recommendations that are individualized and empowers the patient or client for self-management.

Studies such as the Finnish DPS (n =522); the American DPP (n=2161) and the Da Qing (577) provide overwhelming evidence that diet and exercise could reduce the risk of developing diabetes mellitus.

In 2000 the Caribbean Food and Nutrition Institute (CFNI) conducted a survey of the nutrition/dietetic personnel in the thirteen English-speaking countries of the Caribbean. The findings revealed that there was a ratio of 0.38 positions to 10,000 populations, and when filled was 0.32.

Comment [YDD1]:

Today the number of nutrition personnel has not shown any marked improvement and since recruitment has not kept pace with the increase emergence of chronic nutrition related non-communicable diseases. Although there have been an increase in the number of institutions in the region that are training nutrition/dietetic personnel the limiting factors, are shortage of places for professional internship, incentives and financial remuneration unattractive to young aspirants.

The dietitian at the tertiary level of care focus mainly on the control and or the prevention of complications in persons with diabetes, while the nutritionist in primary health care system through health centers and in private practice develop community based plans and implement them. These involve not only sharing or imparting knowledge but they are actively involved in research and preventative programmes.

The MNT process requires a referral form with the relevant findings of the client (from the attending practitioner) to inform and evaluate anthropometric assessment, biochemical or laboratory data, clinical, physical, medical, psychosocial/lifestyle and economic issues. Close collaboration between the referring physician and dietetic/nutrition personnel enhances the likelihood of a positive outcome.

The effectiveness of the management of the person with diabetes depends on the recognition of the nutrition care process by the other members of the team as most important in the overall care process.

The Nutrition and Dietetics Professional as a member of the Diabetes Management Team: Roles and Functions

Pauline Samuda

The roles and functions of the nutrition and dietetics professional, as an integral member of the diabetes management team, have received in-depth attention in recent years because of the growing recognition of the important relationships that exist between nutrition and the prevention and management of diabetes.

The nutrition and dietetics profession, concerned with virtually all human-oriented aspects of food and nutrition, is practiced in a diversity of work environments ranging from individual client counseling to the provision of advice to policy makers on matters related to nutrition such as food supply and population nutritional requirements and legislation. As a consequence, of this diversity, the specific roles and functions of the nutrition and dietetics professional are determined largely by the environment in which the professional operates.

A professional in this area may be found operating in environments such as clinical, community, food service, research, training and education, food formulation and food labeling/regulation. In any

of the varied environments the nutrition and dietetics professional is uniquely placed to be an integral part of the diabetes management team.

This paper proposes to highlight the various roles and functions of the nutrition and dietetics professional, as an integral member of the diabetes management, as they operate in their various work environments.

Responsibilities and interaction of other team members in the nutritional management of diabetes

Laura D Richards

Although many health care workers appear to be better adapted to work in single or multi-professional teams, the best outcome to diabetes care is achieved when members from different disciplines work and collaborate with each other to identify and implement treatment goals. These interprofessional or interdisciplinary teams operate on the premise that the client is the centre of professional attention and the care required is beyond the competencies and scope of any one discipline or individual. These teams are characterized by shared leadership with common goals and a unified identity; they are collaborative rather than consultative at the individual, group and organizational levels; and they practice effective and open communication and management of conflict.

The interprofessional patient care team is a diverse group of clinicians who communicate regularly about the care of a defined group of patients and participate together in that care. Although these professionals work together towards a common goal, they each bring a unique body of knowledge and skills. Their roles and functions may substitute, supplement or complement each other. The

core team for integrated diabetes care brings the skills required for the basic components of diabetes treatment (medication, nutrition, self-management, and self-monitoring). The team includes physicians, dietitians, nurses, and behavioral scientists with special training in diabetes management. The extended team for diabetes care includes other disciplines with skills not within the scope of the core team's expertise such as ophthalmologists, pharmacists, podiatrists, and physical therapists as well maternal-child care or gerontology specialists.

Traditionally, health care teams are led by the doctor. While this appears to be the prevailing practice; the nature of diabetes care suggests the need for an evolving leadership role. This change was demonstrated in the Diabetes Control and Complications Trial (DCCT). Physicians were initially the primary diabetes care providers who directed the activities of the other team members. This role changed, as the study progressed, to one in which the physician became the team builder with emphasis on the elements for growth and effective functioning of the team. While the physician retains the responsibility for overall medical care and as the primary provider in acute cases, it became evident that the day-to-day management of the diabetes regimen was better provided by nurses as care coordinators. Ongoing contact with the dietitian is critical to address diet modification and may also include teaching alteration of insulin doses with food intake for various physical activities.

The movement toward interdisciplinary care requires changes in team organization and orientation toward shared leadership, shared priority setting, and mutual problem-solving. Hence, one main drawback to interprofessional team is that they are time-consuming. Two-way communication

among the team member is very important to move the process from the traditional practices closer to the more integrated delivery of health care.

Diabetes is a chronic complex disease with complex medical, nutritional and social issues. Interprofessional/interdisciplinary health care teams improve care because collaboration between professionals foster holistic client-centered care that equips and empowers the individual to self-manage their condition.

11th Scientific Session

**ROUNDTABLE III:
WHO CARES? WE DO!**

Chair: ???

Preconception care for women with diabetes

Vernon DaCosta

The planning of a pregnancy is very important for all, but a number of additional considerations make it particularly important for women with diabetes. Diabetic pregnancies are at increased risk for obstetric and medical complications, such as hypertension, preterm labor, urinary tract and other infections, periodontal disease, cesarean section, and obstetric trauma. Increased rates of spontaneous miscarriages are reported in women who have pre-existing diabetes. Numerous studies have linked the increased rates of miscarriages and fetal anomalies to poor glycaemic control.

HbA1c values that are greater than 8% are particularly concerning with a risk for malformations that is three to six times greater than when the HbA1c is maintained at less than this cut-off point.

Overall, the risk for major malformations is up to eight times greater than in nondiabetics.

In order to minimize these complications women with diabetes of childbearing age should be informed about:

- how pregnancy and labour can affect and be affected by their diabetes

- the need for effective contraception in order to plan their families

- the need for optimising blood glucose control prior to and during pregnancy

- hypoglycaemia and the treatment options of hypoglycaemia

- the need to check that medications are appropriate for use in pregnancy

- their baseline retinal and nephropathy investigations

- the advantages of healthy eating and taking folic acid supplements in the appropriate dose (5mg daily)

- avoiding alcohol and cigarettes

- the adverse effects of obesity.

The optimum status for the diabetic women is stable glycaemic control (assessed by HbA1c). If she wishes, contraception can be discontinued. If subsequently conception does not occur within one year, the woman and her partner's fertility should be assessed.

A Cochrane review of one case-matched controlled study and six observational studies found that preconception care of diabetic women is associated with improved glycaemic control in early pregnancy, less maternal hospitalizations, less use of neonatal intensive care, a reduction in major congenital anomalies (1.2%–5% versus 10.9%–14%), and a reduction in fetal and neonatal deaths (6.5% versus 21.1%).

Diabetes and Your Vision – Forget Me Not

Leon Vaughn

Diabetes is one of the leading causes of irreversible blindness in our local population. It is well known that the ophthalmic complications of diabetes are earlier in onset or more severe in presentation in blacks, Indians and other melanoderms.

Genetics coupled with the socioeconomic conditions of the majority of persons afflicted with this disease results in their late presentation to medical practitioners and subsequently to the ophthalmologist. At presentation many of these patients already have advanced eye disease with irreversible damage to their vision.

The primary responsibility for improving public awareness of the devastating consequences of untreated diabetic eye disease lies with the diabetes management team and in particular the eye care providers.

DIABETES: FORGET NOT THE KIDNEY

Everard Barton

ROUNDTABLE IV: WE CONTINUE TO CARE!

Chair: ???

Diabetes & Periodontal Disease **Current knowledge on relationship between DM & PD**

Peter Glaze

For many years we have known that there is a two-way relationship between periodontal disease and diabetes. Periodontal disease may make it more difficult for people who have diabetes to control their blood sugar and people with uncontrolled or poorly controlled diabetes may develop periodontal disease.

Chronic Adult Periodontitis is an inflammatory response to plaque formed on the teeth that progresses from the gingival tissue to the alveolar bone which is destroyed and if left untreated results in teeth loss.

From recent studies it appears that type I Diabetes mellitus patients have an increased risk for developing periodontitis with age and the severity of periodontal disease increases with the increased duration of diabetes.

Other studies have shown that adults with poorly controlled diabetes had more alveolar bone damage than well controlled diabetes patients.

ORAL TREATMENT AND MANAGEMENT OF PERIODONTAL DISEASE IN DIABETES

PATIENTS

1. Control acute infections.
2. Control blood glucose level.
3. Advise patient's physician of the periodontal status since the presence of infections may increase insulin resistance and contribute to a worsening of the diabetic state.
4. Control periodontal infection through plaque control (oral home care), mechanical therapy combined with systemic tetracycline antibiotics.

Diabetes mellitus has significant impact on tissues throughout the body including the oral cavity and poorly controlled diabetes increases the risk of periodontitis.

The Role of the Chiropodist in Diabetes Management

Owen Bernard

One of the crucial components in the management of Diabetes is Foot Care. In spite of this statement and fact, it is an area that is still neglected.

The role of the Chiropodist/Podiatrist in some countries is still not yet fully appreciated and recognized for various reasons. Why? In some countries, there are no such services. Some Health Care Givers including Doctors and Nurses do not understand Chiropody.

Chiropodist

A Chiropodist is one who deals exclusively with ailments of the feet. It is not a new profession.

There are so many foot problems out there that need to be addressed before the surgeon is called.

We all know about the risk factors in the diabetics, we also know that an ulcerated foot is highly prone to infection and that certain signs and symptoms are often overlooked by people with diabetes due to the loss of sensation and ignorance of foot problems.

However, let us not forget that when someone goes into a hospital to have a leg or digit amputated because of diabetes complications it is not something that happened overnight. We need to focus our attention on the cause and why it has reached that stage. Some of the most common foot problems that are leading to amputation are still not fully recognised by many.

Problems include the following:

The Involuted Nail

Helomas

Callus (*leading to Osteomyelitis*)

Onychogryphosis (*thick crusty nails*)

Dystrophic Nails

As a rule every diabetic patient should be asked to take off his/her shoe by the Doctor/Nurse on every visit, in order to identify problems as early as possible and refer that patient to the Chiropodist who will administer the appropriate care and correction.

Too many people are paying the price of ignorance in terms of what foot care is all about.

Foot Care is not a minor matter.

The role of the Pharmacist in Diabetes Management

Eugenie Brown-Myrie

13th Scientific Session

ROUNDTABLE V: ENHANCING THE QUALITY OF LIFE THROUGH RESEARCH

Chair:

A NEW APPROACH TO CHRONIC ILLNESS MANAGEMENT; APPLYING WAGNER'S CHRONIC CARE MODEL TO DIABETES CARE IN THE JAMAICAN SETTING

C. Yvette Williams MD MPH

Edward H Wagner¹ proposed that chronic diseases such as diabetes are most effectively managed by fundamentally changing our approach to chronic disease care. Key features of Wagner's Chronic Care model are: **The emphasis on Self Management Support** (acknowledging that the patient is the principle care giver and emphasizing patient education aimed at disease specific problem solving), **Delivery System Re-design** (to delineate a clear division of labor between acute care and the planned management of chronic conditions. In this model Non-physician personnel are trained to support patient self-management and arrange screening and follow up based on clinical guideline

derived protocols and decision support. Physicians treat patients with acute problems, intervene in stubbornly difficult chronic cases and train team members) and **Clinical information Systems** (especially registries for planning individual care and conducting population-based research). This session describes Wagner's model, outlines current barriers and opportunities for progress in implementing Wagner's model in Jamaica and proposes a strategy for encouraging this approach in both the Public and Private sectors.

14th Scientific Session

THE TEAM IN ACTION

Chair: Valerie Hardware

The Inter-Disciplinary Integrated Care Team – A model for Optimum Treatment of Diabetes Mellitus – Scenarios

Alverston Bailey

The DCCT trial showed conclusively that improved metabolic control is feasible using a team approach. This intensive diabetes management is achieved by the diabetes health care team.

- core team members include: the person with diabetes, a primary care physician, diabetes educators (nurses and dieticians), in some cases the diabetes specialist (endocrinologist or internist).

¹ Wagner EH Meeting the needs of chronically ill people BMJ 2001 ;323:945-946

- expanded team members include other health professionals depending on the needs of the individual: ophthalmologist, cardiologist, nephrologist, neurologist, foot care specialist, obstetrician, social worker, psychologist/psychiatrist, community care worker, pharmacist, surgical specialist.

The objectives of this team is to:

- provide comprehensive, shared, patient centered care
- incorporate current clinical practice guidelines into daily management practices, including timely medical follow-up and complication surveillance
- provide initial and ongoing education as an integral part of diabetes care, with a focus on self-management skills
- the structure/membership of the diabetes care team should be flexible, based on individual and community needs
- maintain excellent communication between all members of the team.

This paper will describe various scenarios in which the inter-disciplinary integrated team is used to provide optimum care for patients with diabetes mellitus.

**Preventing or delaying end-stage complications in the diabetic patient:
Who are the key players?**

*Michael S. Boyne**

It is well known that diabetes mellitus ravages its victims by causing microvascular and macrovascular complications. The prevention of these complications is now well documented by clinical trial data. These have shown the efficacy of reducing glycaemia, lipids, blood pressure, weight, sedentarism, as well as insulin sensitization. Despite the efficacy of these interventions, their *effectiveness* remains in question. That is, how do we reasonably translate these validated target goals into clinical practice? Even more importantly, how can we sustain these interventions indefinitely in each patient?

To be successful, a new paradigm for diabetes care is necessary. Current diabetes care and the training of medical personnel focus too much on an acute, rather than, a *chronic care model*. This new paradigm will require first, and primarily, the **empowering of patients** in their own care so as to attain their target goals. Team approaches using **non-physician providers**, especially **nurse care management**, may be more appropriate and successful than physician-only models. More knowledge of **behavioural and cognitive techniques** will be needed to maintain patients' compliance in the long term. However, the most important adjunct after patient empowerment will

most likely be the use of **medical informatics**. A proper informatics system will give feedback of the patients' and physicians' performance, identify patients in need of further intervention, and give evidence-based decision-support for the diabetes care team.

Poster Presentations

02P-1

DERANGED LIVER AND RENAL FUNCTION TESTS IN PREGNANT WOMEN WITH ABNORMAL GLUCOSE METABOLISM WHO DEVELOP HYPERTENSIVE DISORDERS

D McGrowder, J Julius, T Crawford, K Jones

Introduction: Hypertension, a common disorder complicating pregnancy, remains a leading cause of maternal mortality. Gestational diabetes mellitus (GDM) is associated with increased risk of transient hypertension (TH), preeclampsia (PE) and other maternal and foetal complications of pregnancy.

Objectives: To investigate plasma glucose and serum lipid concentrations, liver and kidney function tests in controls and women with GDM. The study analyzes the incidences of TH and PE in women with GDM, and assesses blood pressure measurements and biochemical parameters of women with GDM who develop TH and PE.

Study design and method: Eighty four women with GDM and ninety women with normal glucose tolerance (controls) in their third trimester of pregnancy were studied prospectively at the University Hospital of the West Indies between February and November 2005. Demographic and laboratory data were compared between the two groups. Serum albumin, direct and total bilirubin, alkaline phosphatase (ALP), aspartate aminotransferase (AST) and gamma glutamyl transferase (GGT) were used as indices of liver function. Serum creatinine, urea and uric acid were used to assess renal function. Glycaemic control was assessed by HbA_{1c} at the time of diagnosis and serum lipids were

measured. In addition, blood pressure measurements of all the women in the study were done. The data was analyzed using the Student's t-test with $P < 0.05$ taken as statistically significant.

Results: The two study groups were of similar age, and gestational age but as was expected the GDM group had higher mean plasma glucose concentration and HbA1c during pregnancy ($P < 0.05$). The activities of lactate dehydrogenase (LDH) and GGT as well as renal function indices, creatinine, urea and uric acid were higher in women with GDM than in controls but not statistically significant ($P > 0.05$). The incidence of TH and PE in women with GDM was 11.9% (10/84) and 2.4% (2/84) respectively. Women with GDM who developed TH and PE had higher blood pressure, plasma glucose, creatinine, ALP, GGT, and triglyceride than controls ($P < 0.05$).

Conclusions: Women with GDM who developed TH and PE had significantly higher blood pressure levels, liver and kidney function tests than those who remained non-preeclamptic. Early diagnosis of patients with GDM-TH and GDM-PE, their close monitoring, and prompt corrective management will likely result in better outcome pregnancy.

02P-2

EFFECT OF MICRO-DOSES OF SIMVASTATIN ON SUBJECTS WITH RISK FACTORS FOR NIDDM

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A prospective, transversal and descriptive study was undertaken at the primary care level at the 'Policlinic Reina', Centro Havana, Cuba, over twelve weeks during 2004 in order to determine the homeopathic doses of simvastatin on subjects with risk for developing NIDDM.

Subjects were classified according to the number of risk factors such as those with one, two, three and more and included: obesity and overweight, hypertension, dyslipidaemia, gestational diabetes mellitus, glucose intolerance, first degree relatives with DM.

From a population of 118 classified subjects, 13 subjects with dyslipidaemia (as the only risk factor) were randomly selected to receive homeopathic doses of simvastatin (0.1mg in aqueous solution) daily for 12 weeks. A second group (control of 13 subjects with normal, basal lipid fraction) was also randomly selected, but this group did not receive any medication.

Standard methods to determine the lipid profile, glucose profile, liver function tests were done at the beginning; at 6 weeks; and 12 weeks for both groups.

Results showed that the values of total cholesterol and triglyceride did not vary in the treated group during the 12 weeks; however, there was a moderate increase in HDL (15.5%) over the period. There was also an improvement in the fasting glucose in the 'treated' group (12.1%).

There may be some benefits in administering homeopathic doses of simvastatin in subjects with dyslipidaemia. A larger study is being done to determine significant correlations.

02P-3

METABOLIC CONTROL AND VARIATION OF THE OXIDATIVE STRESS AND ANTIOXIDANT DEFENSE IN TYPE 2 DIABETES MELLITUS.

Dr. Lorenzo Gordon¹, Dr. Eslaen Martorell Zamora², Dr. Yeiny Pena-Fraser¹, Dr. Aurora Segura Igarza², Dr. David Garwood¹, Dr. Aramis Brossard.³

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3. Kingston Public Hospital, Jamaica

INTRODUCTION: The occurrence of reactive oxygen species known as pro-oxidants, is an attribute of normal aerobic life. The steady state formation of pro-oxidants is balanced by the rate of their consumption by antioxidants which are enzymatic and/or non-enzymatic. Oxidative stress results from imbalance in this pro-oxidant-antioxidant equilibrium in favour of the pro-oxidants. It is well-known that diabetes may be considered as a state of increased oxidant stress or depletion of the total antioxidant capacity, while there is evidence that oxidation may play a role in the genesis of its complications.

OBJECTIVE: To determine the variation of oxidative stress and antioxidant defense indicators according to metabolic state in Type 2, Non-Insulin Dependent Diabetes Mellitus (NIDDM).

METHOD: Between 1998 and 2004 a sum of 231 NIDDM subjects were studied at the “Hermanos Ameijeiras” Hospital in Cuba, in collaboration with the University of the West Indies, Mona Campus (Jamaica). Metabolic, hormonal, biochemical and oxidative stress parameters were measured at the beginning, 3 and 6 months during treatment. Sixty eight (68) subjects with fasting blood glucose (FBG) 10.0 – 20.0mmol/L were selected. Six (6) months interventions of education, diet, exercise and medications resulted in 19 subjects with FBG, 4.0 – 6.9mmol/L. Blood samples of

these 19 subjects were then analyzed using the values at the beginning as 'control.' The variations in the indicators of oxidative stress and antioxidant defense were compared at the beginning and at the end.

RESULTS: Oxidative Stress. The concentration of malondialdehyde (MDA) was 1.92nmoles at the beginning and decreased to 1.46nmoles (P=0.086) in 6 months, the phospholipase A2 activity (PLA) changed from 2.22 IU to 2.46 IU (P=0.2366) and protein oxidation (POX) from 1.98nmol/mg to 2.85nmol/mg (P=0.0747).

Oxidative Defense. At the beginning, catalase activity was 111.21U/ml and changed to 88.76U/ml at 6 months (P.0.0403); superoxide dismutase activity (SOD) changed from 8.15U/ml to 13.42U/ml (P=0.0089).

CONCLUSION: These results showed that improving the metabolic state in NIDDM improves the antioxidant defense and decreases the oxidative stress.

02P-4

THERAPEUTICAL EFFICACY OF METFORMIN IN THE PREVENTION OF NON-INSULIN DEPENDENT DIABETES MELLITUS (NIDDM)

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The diagnosis of glucose intolerance and quantifying the risk of developing NIDDM is essential in developing a Prevention Programme in NIDDM.

An investigation was undertaken at the “Policlinic Reina’ in Central Havana, Cuba to determine the impact of metformin on glucose intolerance in a prevention programme.

Three hundred and ten (310) subjects were screened and classified according to a risk factor protocol for NIDDM and included obesity, arterial hypertension, dyslipidemia, glucose intolerance.

Initial blood studies were done for the 310 subjects and included glucose intolerance test, lipid fraction, liver function tests, blood urea nitrogen and serum creatinine. These were repeated after an intervention of metformin in 12 weeks in 2 groups.

Fifteen (15) subjects were diagnosed as glucose intolerance only whilst 12 subjects were glucose intolerance with dyslipidemia.

These 2 groups were given 1 gram of metformin daily for 12 weeks and all blood studies were repeated. There was a notable improvement in glucose intolerance for both groups;-- fasting blood glucose initially was 6.81 ± 0.2 and changed to 6.24 ± 0.2 whilst 2 hours post prandial initially was 8.66 ± 0.3 and changed to 7.75 ± 0.2 .

Metformin may be effective in improving glucose profile in this population.

02P-5

BIOACTIVE COMPOUNDS IN JAMAICAN FOOD CROPS

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Introduction

Preliminary Studies have shown that beneficial Bioactive compounds abound in commonly eaten Caribbean foods. These compounds include saponins, phytic acid, anthocyanins and polymethoxylated flavones (PMF's) from citrus peels. Metabolic studies were carried out on these bioactive compounds in normal, diabetic and hyperlipidemic rats with a view to exploiting these Jamaican crops as nutraceuticals and specialty ingredients in foods.

Methods

The level of PMF's and anthocyanins were assessed by High performance Liquid chromatographic (HPLC) methods while saponins and phytic acid were assessed by standard AOAC methods. Saponin supplemented diets were fed to normal and diabetic Wistar rats while phytic acid supplemented diets were fed to normal rats and the effects on lipid and carbohydrate metabolism assessed.

Results

For the samples analysed, the highest levels of anthocyanins were observed in samples of otahetie apple and purple grapefruit. Appreciable levels of anthocyanins were observed in cocobeans as well

as in samples of Moonshine yam. The highest levels of phytic acid were observed in pigeon peas, green banana and pumpkin with 2.582 ± 3.00 , 2.134 ± 1.02 and 2.057 ± 1.96 mg/g dry weight respectively. An extract of phytic acid from sweet potato resulted in increased (High density lipoprotein) HDL levels with an overall reduction in total blood glucose in rats compared to the controls. An assessment of the citrus cultivars, shows that ortanique contained the highest level of the PMF's Tangeretin (TAN) and Nobiletin (NOB) with 934.42 ± 15.85 and 786.29 ± 1.70 mg/100g respectively. Valencia orange however, had the highest levels of Sinensitin (SIN) and Heptamethoxyflavone (HMF) with 405.38 ± 12.52 and 261.32 ± 3.86 mg/100g respectively. The saponin extract from wild yam was shown to significantly lower blood glucose in diabetic rats.

Conclusions

Our studies have shown appreciable levels of saponins, phytic acid and anthocyanins in locally grown tuber crops while the citrus fruits including grapefruits, oranges, ortaniques and sour oranges have varying levels of the major PMF's hence could become a commercial source of these highly beneficial dietary supplements. We have established that phytic acid and saponins in normal and diabetic rats display beneficial effects and could be exploited in the management of diabetes, hypercholesterolemia and cardiovascular diseases. Overall, these bioactive compounds investigated have been shown to impart significant protective activities including glucose lowering and hypocholesterolemic effects in rat models.

02P-6

EFFECT OF LOW GLYCEMIC INDEX FOODS IN THE MANAGEMENT OF TYPE 2 DIABETES IN THE CARIBBEAN

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Background

The prevalence of diabetes is increasing in all parts of the world, with all age-groups worldwide estimated to be 2.8% in 2000 and expected to reach 4.4% in 2030. This will represent the total number of people with diabetes projected to rise from 171 million in 2000 to 366 million in 2030. This epidemic rise in diabetes mellitus has become a major public health concern in the Caribbean as it is estimated that 35 million people will be affected by 2025. In Jamaica, the prevalence of diabetes among persons 25-74 years old is estimated to be 12% to 16% but of which a third is unrecognized, and is the second leading cause of death. This has caused tremendous economic stress on the health care system, loss of labour hours and disruption of families. Studies revealed that the total cost attributed to diabetes mellitus for health care expenditures in the English speaking Caribbean countries exceeds US\$1 billion, of which Jamaica accounts for almost a half of the reported figure totaling more than US\$409 million.

With this comes an urgent need to identify the most cost-effective strategies of management. The benefits of improving glycemic, blood pressure and lipid control on risk of complications are now

confirmed. Studies with large numbers of diabetics have indicated that those who maintain their blood sugar under tight control best avoid the complications from this disease. Whereas pharmacological therapies are clearly effective, the diabetes prevention trials in Finland and the United States remind us that nutrition and lifestyle approaches can be more effective in delaying onset of the disease. For those already diagnosed, numerous studies have shown that the use of low glycemic index (GI) diets have improved glycaemic control and prevent diabetic complications. Furthermore, the use of GI in developed countries has become increasingly commercialized, as foods are now labeled with a low GI seal and promoted globally to reduce insulin resistance and obesity.

Objective

To determine the effect of the consumption of low glycemic index indigenous Caribbean carbohydrate-rich foods on A_{1c} in type 2 diabetics.

Research Design and Methods

In a randomized parallel study, 65 type 2 diabetic volunteers were divided into two groups, an intervention group where the subjects were advised to consume low GI foods and a control group where the subjects were not so advised. Consequently, attempts were made to ensure that both groups were isocaloric so as to avoid the confounding effect of the intervention group being relatively hypocaloric. The duration of the study was 24 weeks and daily records of the foods consume were made. Random surprise visits, the use of semi-quantitative food models to ascertain food portion sizes consumed and surprise 24 hour dietary recall were used to verify the foods

recorded were actually consumed. The level of A_{1c} during the period of the study was determined, along with cardiovascular markers such as cholesterol, homocystiene and C-reactive protein.

Results

After three months there was a 0.7 ± 0.24 decrease in A_{1c} in subjects in the intervention group. However, A_{1c} was found to increase in the control group. There was no significant change in the HDL or LDL levels in the control or intervention groups. The level of homocystiene and C-reactive protein did not change significantly in the first 3 months of the study.

Conclusion

Preliminary results would suggest a potential improvement in glycaemic control as seen as decreased A_{1c} levels in type 2 diabetics, resulting from the consumption of indigenous low GI complex carbohydrate foods. However, a more definitive conclusion can be made at the end of the six months period of the study. These results should prove useful and promote the use of low GI foods by health care professionals, nutritionists and in diabetes education to delay or prevent the onset of diabetic complications. Also to directly help diabetics and health conscious individuals to better plan their diets to reduce the incidence of post-prandial spikes in blood glucose levels.

02P-7

EFFECT OF MICROMETRIC PROPERTIES ON THE *IN VITRO* DIGESTIBILITY OF STARCHES EXTRACTED FROM YAMS (*DIOSCOREA SPP.*) GROWN IN JAMAICA

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Yams (*Dioscorea sp.*) are widely cultivated in tropical and subtropical regions of the world for their rich carbohydrate and medicinal properties. Starch is the major carbohydrate reserve in yam tubers accounting for up to 85% of the dry weight matter. Differences between the various yam varieties have been linked to the micrometric properties of the starches from these yams [1]. The effect of starchy foods on the blood glucose and insulin responses may vary significantly; this could be attributed to the raw materials intrinsic properties [2]. The degradability of starch when consumed is important especially among diabetics and hyperlipidemic individuals, as starches that are easily degraded tend to have a higher insulin demand than the slower degrading starches [3]. This can affect the sensitivity to insulin, and influence the development of type II diabetes [4]. This study was designed to investigate the relationship between the micrometric properties and the *in vitro* digestibility of starches extracted from *Dioscorea cayenensis* cultivar (cv) Round leaf yellow yam, *Dioscorea rotundata* (cv) Negro yam, *Dioscorea polygonoides* (cv) Bitter yam and *Dioscorea esculenta* (cv) Chinese yam.

Overall Aim

This study was designed to investigate the relationship between the micrometric properties of starches and their effect on *in vitro* digestibility with the following specific objectives;

1. To investigate the effect of starch granule particle size and particle size distribution on the digestibility of starches *in vitro*.
2. To investigate the effect of specific surface area and surface to number mean on starch digestion *in vitro*.

Methods

Starches from Round leaf yellow yam, Bitter yam and Chinese yam were extracted and micrometric properties determined as outlined by Adebayo and Itiola [5]. The *in vitro* digestibility of the starches was determined by the method of Hassan and West [6].

Results and Discussion

Significant variations were observed in the micrometric properties of the different yam starches studied ($p < 0.05$). The projected mean granular diameter ranged from 5.4 μm (Chinese yam) to 34.5 μm (Round leaf yellow yam). The variations observed in the granular size may have influenced the surface properties of the starches, as Chinese yam and Bitter yam were found to have the largest specific surface area (625.91 m^2/kg and 258.76 m^2/kg respectively) while Round leaf yellow yam and Negro yam had the lowest (117.4 m^2/kg and 154.34 m^2/kg respectively). The results also showed a direct correlation between the particle size and specific surface area on the digestibility of the various starches. Chinese yam and Bitter yam starches with the smallest mean granule diameter and highest specific surface area were found to be the most digestible (21.27 ± 0.01 and 18.11 ± 0.02 % respectively), while Round leaf yellow yam and Negro yam with the largest mean granule diameter and lowest specific surface area were the least digestible (13.74 ± 0.03 % and 14.98 ± 0.08 % respectively) at 37°C under *in vitro* conditions.

Conclusion

Starches with small granules and large specific surface area may be more digestible than those with larger granules. This suggests that these starches may be digested and absorbed at different rates when consumed, which could be of importance to diabetic and hyperlipidemic individuals as the

differences in digestibility of the different yam starches will affect post-prandial blood glucose levels.

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02P-8

HIGH LEVELS OF F₂-ISOPROSTANES IN JAMAICAN ADULTS WITH DIABETES MELLITUS

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Inadequate glycaemic control in Jamaican adults with type 2 diabetes mellitus (DM) prompted assessment of glycaemic control, oxidative stress, cardiovascular (CV) and renal risk in adults attending a hospital clinic. A random sample of 133 patients men (n=35) and women (n=98), with diabetes mellitus was selected from a population of 510 patients. Fasting blood samples (n=122) were evaluated for metabolic control and dyslipidaemia. Oxidative stress was evaluated by measurement of urinary F₂ isoprostane (n=124). The data were analysed using SPSS. The mean age of the participants was 56.7 ± 14.3 years, with mean duration of diabetes: 12.2 years. Mean fasting blood sugar was 8.6 ± 4.3 mmol/L. Seventy-seven % had HbA_{1c} > 6.5%. Sixty nine % were being treated with insulin with no difference in HbA_{1c} levels in these patients compared to those receiving other hypoglycaemic agents. Ninety % of men (median 1004pg/mg creatinine) and 99% of women (median 1501.3pg/mg) had isoprostane levels above the median for subjects with CV risk. Fifty-four% had total cholesterol levels ≥ 5.2 mmol/L, 16% triglyceride levels ≥ 1.5 mmol/L, 25% HDL levels ≤ 1.0mmol/L and 86% LDL ≥ 2.5mmol/L. Sixty three % had BP >130/85 mmHg. Eighty-one % were overweight or obese, with 80% of the men having waist circumferences >88 cm, whereas 87% of the women had waist circumferences 84.5cm. Microalbuminuria was increased in 37% of the

subjects. The high prevalence of overweight, central obesity, elevated LDL and hypertension in these patients indicated high CV and renal risk. The risk was significantly higher in persons with inadequate glycaemic control. Isoprostane levels were high in the majority of subjects but did not correlate with HbA_{1c} or any other variable.

Key words: Isoprostanes, cardiovascular risk, renal risk, BMI, diabetes mellitus

02P-9

PROSPECTIVE PATIENT CENTERED DIABETES CARE

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Project description: This translational project used population based medicine and patient empowerment principles to rationalize the management of diabetes in the Atlanta Veteran's Administration Medical Center (VAMC).

Findings: A combination of physician feedback, targeted patient education and personalized reminders to patients can improve compliance with diabetes process measures.

Strategy

Our approach was based on Wagner's Chronic Care Model and the Institute of Medicine Report **Crossing the Quality Chasm**², which challenged the American medical care system to use technology to improve quality of care.

Key features are the emphasis on:

Acknowledging that the patient is the principle caregiver and emphasizing self management support

Achieving a clear division of labor between acute care of intercurrent problems on one hand and the planned management of chronic conditions on the other.

Clinical information systems including clinical reminders and disease registries with physician feedback.

Methods

We developed an Atlanta VA diabetes disease registry and a framework for monitoring compliance with diabetes clinical guidelines. In December 2004, the Atlanta Primary Care patient population consisted of **44,249 unique patients** who were followed in 13 Primary Care Clinics. These patients were seen by approximately 40 full time clinicians each with a panel size of 1000-1250 patients.

10,077 or nearly twenty three percent of these patients were diabetic

Using this database we assessed the quality of care of these 10,077 diabetic patients using four key measures of compliance. (A1C < 9, LDL < 100, Eye exam, BP < 140/90) We then developed an intervention consisting of regular letters to patients advising them prospectively what screening tests and procedures would be due within the following few months. The letters served as the orders for these tests. The patient's primary care physicians were given access to the registry results via a website.

Results

Significant decrease in patients who had not had LDL, A1C in the period studied. Trend towards improvement in actual values.

¹ Crossing the Quality Chasm, [Institute of Medicine \(IOM\), 2001](#)