



المؤتمر الليبي الرابع للسكري والغدد الصمّ

The Fourth Libyan Diabetes and Endocrinology Conference

29th April to 1st May 2006, Corinthea Bab Africa, Tripoli, Libya

29 إبريل إلى 1 مايو 2006 مسيحي - فندق كورينثيا باب أفريقيا بترابلس الجماهيرية

البرنامج النهائي والملخصات

FINAL PROGRAMME and ABSTRACTS

Approved for Maximal of 16 CPD Credits (International, External, Clinical)

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INTRODUCTION & WELCOME:

Dear Colleagues and Friends,

The organizing committee extends a warm welcome to all the delegates to Fourth Libyan Diabetes and Endocrinology. Several expert speakers are leading the programme and we hope that the delegates will have an up to date reviews of the principles and practice of our art of diabetes care and clinical endocrinology.

We have allowed enough time and space for young researchers, clinical trainees and clinical practitioners to present their research findings, clinical observations and interesting cases with learning features as free communications as posters and oral presentations.

We hope that the programme will cater of the educational needs of different professional groups and at different levels of experience. We hope to be informed and entertained by the plenary lectures, "state of the art" lectures and the "memorial" lectures. The morning symposia will focus on three select aspects of care and the afternoon workshops are interactive sessions on modern management of diabetes and on diabetes and endocrine emergencies. On the third day we will experiment with a special symposium on educating the educators.

We hope the conference succeeds in achieving its aims eventually help improve the care we deliver to our patients.

Dr. Salem A Beshyah, PhD FRCP
Programme Organizing Committee

Dr. Issam M Hajajji, MA MRCP
Local Organizing Committee

مقدمة وترحيب:
الإخوة الزملاء الكرام:

السلام عليكم ورحمة الله وبركاته

نرحب بكم في المؤتمر الليبي الرابع للسكري والغدد الصم. وسيقود أعمال المؤتمر بعون الله عدد كبير من الإستشاريين الليبيين العاملين في هذا المجال. ونأمل أن يتعرض المحاضرون لأحدث ماتوصل إليه البحث في مجال السكري والغدد الصم. ويشمل البرنامج 6 محاضرات شاملة و3 ندوات في الفترة الصباحية و3 ورش عمل و3 محاضرات تذكارية في الفترة المسائية.

وقد افسحنا مجالاً كافياً لعرض الابحاث والدراسات التي تسهم في تحديد خصوصيات هذه الأمراض في بلادنا من خلال المحاضرات واللوحات من المشاركين.

نشكر لكم حضوركم ونرجو أن تتحقق الفائدة المرجوة من الإسهام في الرفع من مستوى الخدمات الصحية في بلادنا العزيزة.

والله ولي التوفيق

د. سالم العريفي بشيه

د. عصام المهدي الحجاجي

FINAL PROGRAMME OUTLINES

Saturday 29.4.2006

Morning Session: (Max 4 CPD Credits):

- 8.15 - 9.00: Key Note Lecture:
Chair: Dr Tarek Fiad
Diabetic nephropathy: a 2006 update
Dr. Abdulfattah Lakhdar, MBBCh MSc FRCP (UK)
- 9.00 - 9.25: Wellcome and Opening Ceremony:
The Organizing Committee Speech:
Dr Issam Hajjaji
The Minister of Health and Environment:
Professor Mohamed Ben Rashed
The Head of Libya Board for Medical Specialities:
Professor Mostafa Zaidi
- 9.25 - 9.50: Coffee & Networking/Posters
- 9.50-12.15:
Symposium 1: Diabetes: Size of the Problem
Chairs: Dr. Taher Berish and Dr Abdulkareem Zawawi
- 9.50 -10.20: Diagnosis and classification of glucose intolerance states. Dr. Fellani Mohamed (Canada)
- 10.20-10.50: The metabolic syndrome in 2006 and beyond.
Dr. Tarek Fiad (UK)
- 10.50-11.20: Gestational diabetes: Should we screen?
Dr Lubna Maghur (Tripoli)
- 11.20-11.40: Neonatal diabetes. Dr. Ahmed Shamekh (UK)
- 11.40-12.00: Can diabetes be prevented?
Professor Ahmed M Swalem (Benghazi)
- 12.00-12.15: OC1. Infection-related morbidity and mortality among Libyan diabetic patients in Tripoli medical centre. Hawa El-Sharif (Tripoli)
- 12.15-13.00 State of the Art Lecture 1:
Chair Dr. Abdulfattah Lakhdar
Modern management of hyperprolactinaemia
Professor Ahmed Swalem, MBBCh FRCP (Benghazi).
- 13.00-18.00 Posters/Free Time/Informal Activities & Interactions/Satellite/Meet the expert Sessions
- Evening Session: (Max 3 CPD Credits)
- 18.00 -20.00 Workshop 1. Management of diabetes: from life style to insulin?
Chairs Dr Tarek Fiad & Dr Hawa Sherrif

- 18.00-18.30 Diet for Libyan diabetics: Dr Issam Hajjaji (Tripoli)
- 18.30-19.00 Optimal use of the old and newer oral anti-diabetic drugs. Dr Salem Beshyah (UK)
- 19.00-19.30 Effective insulin injection therapy: Principles and Practice. Dr. Soad Bosseri (Brunie)
- 19.30-20.00 Panel discussion and interactive cases: Panel
- 20.00- 20.45: The Ibn-Sina Medal Lecture.
Chair: Dr. Issam Hajjaji
Models of structured education for people with diabetes
Dr. Soad Bosseri, MBBCh DTM MSc MRCP(UK) (Brunei)

Sunday 30.4.2006

Morning Session: (Max 4 CPD Credits): Registration: 8.00 am

- 8.30- 9.15. Plenary Lecture 1:
Chair: Professor Salah Gerryo
Management of adrenal disease in the era of the laparoscopy
Dr Ali Ghalli, MD (USA)
- 9.15 – 9.45: Coffee & Networking/Posters:
- 9.45- 12.15
Symposium 2. Complications of diabetes:
Chairs: Dr Salem Habroush and Dr. Tarek Fiad
- 09.45-10.15 Hypertension in diabetes Dr. Kamal Abouglila
- 10.15-10.45 Diabetic eye disease. Mr. Khalifa Bakoush (Tripoli)
- 10.45-11.15 The diabetic foot. Dr. Soad Bosseri (Brunei)
- 11.15-11.45 Advances in management of sexual dysfunction in diabetic men.
Professor Elhadi Hussein (Tripoli)
- 11.45-12.00 OC2 Prevalence of microalbuminuria and awareness of its significance in newly-diagnosed type 2 diabetic patients in Tripoli, Libya. Salah Ben Hamed & Issam Hajjaji (Tripoli)
- 12.00-12.15 OC3. The correlation between HbA1c levels and diabetic retinopathy in Libyan patients. Khaled Al-Hajjaji and Abdulrahman Benzeglam (Tripoli).
- 12.15-13.00: State of the Art Lecture 2:
Chair: Dr. Salem Beshyah
Controversies in thyroid disease: more questions than answers !
Professor Ibrahim Sherif, MB FRCP(Ed)
Professor of Medicine, Tripoli, Libya.
- 13.00-14.00 Posters

14.00-18.00 Free Time/Informal Activities & Interactions/Satellite/ Meet the Expert Sessions

Evening Session: (Max 2.5 CPD Credits)

18.00 – 20.00 Workshop 2: Diabetic and endocrine emergencies
Chairs: Dr. Aisha Lazrag & Dr. Houda Kallousa

18.00-18.25 Thyroid emergencies. Dr. Kamal Abougilila (UK)
18.25-18.50 Adrenal and pituitary emergencies. Dr Fellani Mohamed (Canada)
18.50-19.15 Diabetic ketoacidosis in adults. Dr. Salem Habroush (Tripoli)
19.15-19.40 Hypoglycaemia Dr. Soad Bosseri (Brunei)
19.40-20.00 Panel discussion and cases

20.00- 20.45 Mohamed Hasan Al-Fitouri Medal Lecture:

Chair: Professor Ahmed Swalem
Diabetes in Libya: A national strategy.
Dr. Issam Hajjaji, MB MA MRCP
Consultant Physician, Tripoli, Libya

Monday, 1st May 2006: Registration Desk opens 8.00 am

Morning Session: (Max 3 CPD Credits)

9.00 - 9.45: Plenary Lecture 2:
Chair: Dr Salem Beshyah
Polycystic Ovary: metabolic and reproductive perspectives
Dr. Tarek Fiad, MD FRCPI FRCP
Consultant Physician, West Midlands, UK.

9.45 – 10.15 Coffee & Networking/Posters

10.15.- 12.15: Symposium 3. Diabetes and Endocrinology in Childhood and Pregnancy:
Chairs: Dr. Fellani Mohamed & Dr. Bahloul Ben Masoud

10.15 - 10.45 Epidemiology type 1 diabetes in Benghazi.
Dr Awad Gueri & Professor Othman Kadiki

10.45 – 11.15 Modern management of DKA in children:
Dr Ahmed Shamek

11.15 - 11.45 Thyroid disease during pregnancy.
Dr Aisha Lazraq

11.45 - 12.00 OC4. Perinatal morbidity and mortality in relationship with the degree of glycaemic control in al-khadra hospital, Tripoli, Libya.
Fowzia M Al-Qadafie, A Abudaber, Fathia Rhoma and Mostafa Mormesh (Tripoli).

12.00-12.15 OC5: The trend of prevalence of marosomia in Tripoli, Libya (1983-2005). Amal Elkaroubi, Asma Arebi, Nadia Ayad, Malak Elazrag and Soad Omran Othman. (Tripoli).

12.15 - 13.00: State of the Art Lecture 3.
Chair: Dr Soad Bosseri
Lipid lowering in diabetes: From evidence to clinical practice
Dr. Mohsen Eledrisi, MBBCh MD FACE
Consultant Endocrinologist, Riyadh, KSA.

13.00-18.00 Posters/Free Time/Informal Activities & Interactions/Satellite/Meet the expert Sessions

Evening Session: (Max 2.5 CPD Credits)

17.00 - 17.45 Special Meet the Expert Session: Management of Diabetes and hospital and during acute stress Dr Mohsen Eledrisi

17.45 – 18.30 The Abdel Razik El-Zawawi Memorial Lecture
Chair: Dr Salem Beshyah
Modern management of primary hyperparathyroidism: Evidence-based or dogma?
Mr. Salem Alhamali, FRCS(Eng.)
Consultant Surgeon, Kettering, UK

18.30 - 19.00: Closing ceremony of the Conference

19.00 - 21.00: Workshop 3: Educating the Educators (in Arabic)

Chair: Dr. Idris Esharaey & Dr Mohamed Abouhmaira

19.00-19.25 What is diabetes: What the patient must know.
Dr. Salem Beshyah (UK)

19.25-19.50 Diabetic dieting the Libyan way. Dr. I. Hajjaji (Tripoli)

19.50-20.15 Drug treatment of diabetes: Dr. Soad Bosseri (Brunei)

20.15-20.35 Complications of diabetes: an overview.

Dr. Abdulfattah Lakhdar (UK)

20.35- 20.55 The diabetic foot. Mr Saleh Damaja (Tripoli)

21.00 - End

تتقدم اللجان المنظمة بالشكر الجزيل للشركات الراعية

The organizing committees would like to thank the sponsors:

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KEY NOTE LECTURE:

DIABETIC NEPHROPATHY: A 2006 UPDATE.

Abdulfattah LAKHDAR. Department of Diabetes and Endocrinology, Whipps Cross Hospital, London, UK.

Diabetes mellitus of long duration is the foremost cause of chronic kidney disease globally requiring renal replacement therapy. Nephropathy in patients with type 2 diabetes is now encountered more frequently than advanced renal disease in type 1 diabetes. Dialysis and renal transplantation are costly and demanding procedures therefore the aim must be to delay, or ideally prevent, renal failure wherever possible. The clinical cause of untreated diabetic nephropathy is usually that of inexorable progression that starts with proteinuria and culminates in established renal failure. Concerns about the rising numbers of patients receiving renal replacement therapy reinforce the need to redouble efforts in prevention. Chronic kidney disease increases the risk of cardiovascular disease. There are opportunities to intervene at the earliest stages of renal impairment through detecting and confirming microalbuminuria. However, reliance on urinary albumin excretion alone runs the risk of missing patients with type 2 diabetes who have chronic kidney disease due to causes other than diabetes. However, the association between diabetes, cardiovascular disease and chronic renal disease has well been described especially the increased risk in the presence of microalbuminuria or proteinuria. There have been a number of recent studies that have identified renal outcomes as the primary end point and cardiovascular outcome as secondary endpoints. Inhibition of the rennin-angiotensin system with angiotensin-converting enzyme inhibitors (ACE-Is) and angiotensin receptor blockers (ARB's) is proven to reduce the level of microalbuminuria and slow the rate of deterioration in renal function, an effect independent of the antihypertensive effect of these drugs. Analysis of diabetic patients in the MICRO-HOPE study demonstrated that the ACEI Ramipril reduced major cardiovascular outcomes and also reduced the development of nephropathy as a secondary endpoint. Cardiovascular outcomes have been secondary end points in several recent studies of ARB's in patients with type 2 diabetes, proteinuria reduction and the risk of congestive cardiac failure has been demonstrated, but non of the other main cardiovascular outcomes has been improved. Thus, when a patient with type 2 diabetes has microalbuminuria, renin angiotensin blockade with an ACEI may be of considerable cardiovascular benefit, and any cardiovascular benefit of angiotensin receptor blockers is yet to be proven. Once overt diabetic nephropathy has developed, the cardiovascular benefits offered by ACEI's and ARB's are restricted to preventing cardiac failure. Thus, to improve the extremely poor outlook of diabetic patients with renal disease require early identification of individuals at highest cardiovascular and renal risk, and multifactorial intervention.

PLENARY LECTURES:

PL1. ADRENAL SURGERY IN THE ERA OF LAPAROSCOPY.

Ali M. GHELLAI, Jr. State University of New York-Upstate, NY and Guthrie Clinic. Sayre PA 18840. USA. Tel 001 570 8822396 E-Mail:

Autopsy studies estimated that 3% to 5% of the general population may harbour a benign adrenal mass. As a result of the widespread usage of CT scanning and improvement in its resolution, increasing number of incidental adrenal masses are being discovered. Clinically inapparent adrenal tumours are found in 1% to 4% of individuals undergoing abdominal imaging studies. This increasing incidence is best reflected in the medical literature; there has been a twenty fold increase in studies published concerning adrenal incidentalomas over the past three decades. Patients are referred for surgical evaluation because of: (1) an incidental adrenal mass noted on an imaging study, (2) an unilateral functioning tumour, (3) presence of large and/or symptomatic tumour, (4) an enlarging tumour on a repeat follow-up CT scan, or (5) the presence of an adrenal mass in the setting of a known extra-adrenal malignancy representing a potential metastatic disease. The management of patients with adrenal tumours requires a clear understanding of the normal physiology of the adrenal gland, three dimensional concept of the adrenal anatomy as well as adjacent structures, and knowledge of the various pathological entities which may involve the adrenals. The evaluation and management of incidental adrenal tumours are centered on determining whether the tumours are causing hormonal hypersecretion (functioning) and whether they are malignant. Knowledge of adrenal tumor imaging characteristics, risk assessment for primary or metastatic adrenal malignancy, and biochemical testing are imperative for the appropriate selection of patients who would benefit from adrenalectomy and those who would be best served without surgical intervention. The major adrenal tumors which will be discussed in this lecture include adrenal cortical adenomas (aldosteronoma, Cushing's syndrome, virilizing/feminizing tumors), adrenal cortical carcinoma, incidentilomas, pheochromocytoma and adrenal metastases. A diagnostic strategies and algorithm to identify these diseases and review preoperative, operative and postoperative managements is presented. The adrenal gland lends itself to laparoscopic removal because it is small, and adrenal tumours are most often benign. The open approach to the adrenal gland typically requires a large incision to expose a small working space with its resultant postoperative morbidity

PL2. POLYCYSTIC OVARY SYNDROME: METABOLIC AND REPRODUCTIVE PERSPECTIVES

Tarek M FIAD, Department of Endocrinology, Dudley Group of Teaching Hospitals, NHS Trust. Pensnet Road, Dudley DY1 2HQ, West Midlands UK. Tel: 0044 1384 244 tarek.fiad@dgh.nhs.uk

Polycystic ovary syndrome (PCOS) is a heterogeneous condition, usually presenting with any combinations of the following: menstrual irregularities (usually oligo or amenorrhoea), signs of hyperandrogenism (hirsutism, acne, alopecia), and a characteristic ovarian appearance on ultrasound examination. PCOS is a common

disorder with a prevalence of 5-10%. Ethnic groups carrying traits of the metabolic syndrome and diabetes, such as the south east women in the UK, have a higher PCOS prevalence, approaching 50%. Traditionally, PCOS is considered a reproductive disorder associated with subfertility and recurrent miscarriages. From the emerging evidence in last decade, PCOS is currently recognised as a life-time condition with possible foetal origin and menopausal consequences, including diabetes mellitus and cardiovascular disease. Management of PCOS includes lifestyle modification and treatment aiming at controlling hirsutism, enhancing fertility and reducing cardiovascular risks. The presentation will discuss pathogenesis of PCOS and management strategies at the reproductive age and after the menopause.

STATE OF THE ART LECTURES:

SA1. MODERN MANAGEMENT OF HYPERPROLACTINAEMIA

Ahmed M. SWALEM Department of Medicine, Faculty of Medicine, Al-Arab Medical University, Benghazi, Libya. E-mail: aswalem51@hotmail.com

Hyperprolactinemia is very common in everyday endocrine practice; it is the most common pituitary-hypothalamic disorder. It is characterized by menstrual disturbance, galactorrhea, and infertility in women and loss of libido and erectile dysfunction in men. Hyperprolactinemia results from many causes such as drugs, polycystic ovary syndrome, hypothyroidism, hypothalamic lesions and pituitary adenomas. Prolactinomas are by far the most frequent and important causes of hyperprolactinemia. Secondary hyperprolactinaemias respond to treatment of the underlying cause. Dopamine agonists are the treatment of choice. They restore normal menses, fertility and sexual potency. They lower serum prolactin levels, stop galactorrhea and shrink prolactin-producing tumours. Surgery still have a role in debulking of large tumours and in patients resistant or intolerant to drug therapy. Radiotherapy is rarely indicated as first choice therapy.

SA2. CONTROVERSIES IN THYROID DISEASE: MORE QUESTIONS THAN ANSWERS!

Ibrahim H SHERIF. Alfateh Medical School, Tripoli, Libya. Tel +218 21 4781822 Fax +218 21 4781823 E-mail: Ibrah46@hotmail.com

Despite cloning of the TSH receptor, strides in thyroid autoimmunity, excellent imaging, reliable histological diagnosis and robust and very accurate thyroid function tests, there remain many areas where a clear agreement on management is lacking and guidelines lack the support of strong evidence-base. For overt hyperthyroidism most would agree that radioactive iodine is the treatment of choice for the over 20s but do we use a calculated dose or an empirical dose and would this empirical dose be ablative or curative and at what level of severity of exophthalmos if at all would be a contraindication, evidence will be presented that an empirical dose is acceptable and results are comparable to a calculated dose and most

patients can be given RAI with steroid cover if ophthalmopathy is present most patients can be controlled with antithyroid drugs before RAI without significantly affecting the outcome of RAI. In spite of recent evidence that low dose Carbimazole is as effective as high dose and high dose is more likely to cause agranulocytosis, many are still using the high dose and even those who came down have only reduced it slightly. If hyperthyroidism occurs in pregnancy does one use Propylthiouracil (PTU) or Carbimazole? Most guidelines recommend PTU but many studies have supported the safety of Carbimazole. Overt hyperthyroidism does not present any problems regarding the initiation of therapy once the diagnosis is made. This is not the case for sub clinical hyperthyroidism where there are many unanswered questions: When to start? For how long to treat? What are the indications for therapy? What modality to employ? Overt Hypothyroidism should be easier to diagnose and to treat but patients do not share this view as many continue to feel unwell despite normalizing their TSH. Is this because the thyroxine can not be precisely replaced and increases and decreases of fractions of 25 or 12.5mcg are too crude or do we need to add T3 to the regimen, studies to date have failed to show any clear benefit from adding T3. Perhaps the most difficult decision facing the endocrinologist is what to do with subclinical hypothyroidism. Do we treat only if there are symptoms and are these symptoms causally-related. At what level of TSH would we recommend treatment? Should we screen for the condition if evidence suggests that 5% per year will revert to normal why do not we wait. Is a TSH of 5mU/L more kinder to the heart and bones than a TSH of 0.5mU/L Thyroid disease is common and very often easy to diagnose with reliable and reproducible test the decision to treat will very much depend on the results which modality of therapy is dictated by the local conditions and the circumstances of the patients endeavouring always to achieve clinical and biochemical euthyroidism and the best quality of life possible.

SA3. LIPID LOWERING IN DIABETES: FROM EVIDENCE TO CLINICAL PRACTICE.

Mohsen ELEDRI. Department of Internal Medicine (Endocrinology & Metabolism), National Guard Medical City, Eastern Region, Saudi Arabia. Tel: 009663 5910000 x3841 Fax: 009663 5910001 eledrisi@yahoo.com

Patients with diabetes have a significantly increased risk of cardiovascular disease, the leading of death in these patients. High rates of dyslipidemia in this group are a major contributing factor. The cluster of lipid abnormalities in patients with diabetes includes high triglyceride levels, low high-density lipoprotein (HDL) levels, and predominance of small dense low-density lipoprotein (LDL) cholesterol particles. There is evidence that levels of LDL cholesterol, HDL cholesterol and triglycerides are independent predictors of cardiovascular disease. Appropriate management of dyslipidemia is paramount to reduce cardiovascular morbidity and mortality. The order of priorities for the treatment of diabetic dyslipidemia is as follows: LDL cholesterol lowering, HDL cholesterol raising and then triglyceride lowering. Because of their high risk for cardiovascular disease, patients with diabetes are considered coronary heart disease

equivalents and their lipid abnormalities are managed accordingly. Target LDL cholesterol levels for adult patients with diabetes are < 100 mg/dl (2.6 mmol/l); HDL cholesterol levels are > 40 mg/dl (1.02 mmol/l) for men and > 50 mg/dl (1.3 mmol/l) for women; and triglyceride levels are < 150 mg/dl (1.7 mmol/l). Patients with diabetes and established cardiovascular disease are considered very high risk and an LDL target of < 70 mg/dl (1.8 mmol/l) is a therapeutic option in this group. Therapeutic lifestyle changes (TLC) through medical nutrition therapy and physical activity should be prescribed to all patients with diabetic dyslipidemia. Lipid lowering therapy should be initiated at the same time as TLC is started in patients with LDL cholesterol > 130 mg/dl (3.35 mmol/l), clinical cardiovascular disease (as secondary prevention), or those with other cardiovascular risk factors (as primary prevention). HMG CoA reductase inhibitors (statins) are the first choice for lowering LDL cholesterol, while niacin or fibrates are primarily used for raising HDL cholesterol and lowering triglyceride levels. Clinical trials have shown significant improvement in cardiovascular disease after treatment of diabetic dyslipidemia.

ABSTRACTS OF THE MEMORIAL LECTURES:

M1. THE IBN-SINA MEDAL LECTURE: MODELS OF STRUCTURED EDUCATION FOR PEOPLE WITH DIABETES

Soad **BOSSERI**, Suri Seri Begawan Hospital, Kuala Belait,, Brunei Darussalam.
Tel: 673 8611018, Fax 6733336199 e-mail s_bosseri@yahoo.com

The treatment of diabetes is life-long and requires many behavior changes to cope with the daily demand of taking injections or tablets, self monitoring, dietary limitations, regular exercise and safety measures. Optimal outcome can only be achieved if the person with diabetes is willing to, and capable of self-regulating their condition on daily basis for life. It is all very well said that patient and his family should take control of the disorder, but control comes with power and power comes with knowledge. Thus, therapeutic patient education is primarily based on knowledge transmission, coping with disease and empowerment. Effective patient education requires that health professionals develop communication, emotional intelligence, teaching and psychosocial skills. Therefore before planning a health education program attention should be paid to improve the beliefs and attitude of the health professionals as well as their knowledge. Clear objectives should be drawn up individually for each patient and agreed with him and all members of diabetes care team that is to avoid conflict and patient confusion. Overloading patients with information should be avoided especially in the newly diagnosed patient as this may induce hopelessness. Many ways are used to educate patients including individual or group teaching, printed materials, computer programs, internet websites and mass media. The best way is the one that encourage interaction and questioning by the patient. Health professionals must recognize that individuals manage their diabetes in different ways and they must adopt a flexible approach to the education and

management; taking in consideration patient age, education, culture, beliefs and psychological status. However, in our society, none of these strategies are easy to enforce nor can they happen without struggle, but it is the right way to go. Once obtained, these changes are likely to greatly improve the outcome of our patients as well as help prevent type 2 diabetes.

ML2. MOHAMED HASSAN AL-FITURI MEMORIAL LECTURE: DIABETES IN LIBYA: A NATIONAL DIABETES STRATEGY 2006-2010

Issam Mehdi HAJJAJ, National Centre for Diabetes & Endocrinology
Tarig Ashatt, Tripoli, Libya. Tel +218 92 213 9236 E-mail: issam@dr.com

It is estimated that in 1995, there were 207,000 diabetics in Libya. The figure rose to 300,000 in the year 2000. Presently, there are about 375,000 and projected to rise to 450,000 in the year 2010 (and 700,000 in the year 2030). Present estimated cost of care of diabetes (diagnosis, hypoglycaemics, insulin and management of chronic complications) is 50-200 million dinars and projected to rise to 60-240 million dinars by the year 2010. The global and national impact of diabetes should make it one of the top health priority areas. A separate fund should be made available for improving awareness and management of diabetes that should include community awareness and a National Diabetes Register. This strategy will hopefully assist the 'Shaabiat' and service providers in identifying key areas for action aimed at improving the health of Libyans with, or who are at risk of, diabetes. The aims of any National Diabetes Strategy are to: 1) ensure appropriate attention is given to primary prevention, including risk reduction, effective high quality management of diabetes and research; 2) establish an effective partnership between governments, health care professionals, non-government organizations, consumers and carers; 3) build on experience and successes to date. The strategy covers the full range of elements of diabetes prevention and management including: a) adoption of a public health approach to diabetes through the implementation of primary prevention strategies to reduce the number of people at risk of diabetes; b) effective case finding of people with diabetes; c) management of people with diabetes; d) prevention and reduction of complications arising from diabetes; and e) local epidemiological research.

ML3. THE ABDEL-RAZIK EL-ZAWAWI MEMORIAL LECTURE: MODERN MANAGEMENT OF PRIMARY HYPERPARATHYROIDISM EVIDENCE-BASED OR DOGMA?

Salem ALHAMALI, Kettering General Hospital, Kettering , UK

Primary hyperparathyroidism (PHPT) is a complex endocrine pathology involving calcium metabolism and a potent hormone made by the parathyroid glands. Patients with the disease today bear little resemblance to those with the severe disorder of "stones, bones, and groans" described by Fuller Albright and others in the 1930s.

Little controversy existed concerning appropriate therapy for PHPT in its classical presentation (e.g. nephrolithiasis & bone tumour). Surgery was the undisputed treatment for this symptomatic disorder. Since the advent of the autoanalyzer in 1970s the diagnosis of PHPT became more common, and asymptomatic version of the disorder was recognised with increasing frequency. With symptoms absent in most patients, the need for parathyroidectomy in all patients has been questioned as 80% of patients would be classified as asymptomatic. In 1990, The National Institute of Health has issued a consensus guide line for surgical intervention which has subsequently updated in 2002. However, New evidence has shown that most of what has been classified as asymptomatic do have significant improvement when neurophysiological (NP) testing and measurement of Health Related Quality of Life (HRQL), conducted pre and post parathyroidectomy. Elevated serum calcium and parathyroid hormone will establish the biochemical diagnosis. Reducing operating time, failure rate are clear benefits for preoperative localisation (Sestamibi scan /ultrasound) of abnormal parathyroid gland. The traditional paradigm of bilateral neck exploration (BNE) and four glands evaluation was being replaced with one of unilateral exploration and minimally invasive parathyroidectomy (MIP), based upon preoperative localisation studies. Frozen section at time of surgery has reduced incidence of missed adenoma on first exploration. Intraoperative measurement of parathyroid hormone was a valuable method for confirming that surgery is curative but not significantly reduced missed adenoma. If patients with PHPT do not undergo parathyroid surgery, adequate hydration and ambulation are always encouraged. thiazide diuretic should be avoided. We still lack an effective and safe therapeutic agent for the medical management of PHPT, oral phosphate, estrogen replacement and bisphosphonates has been considered with a limited success. Finally, a new group of drugs in the form of calimimetic which lead to increased intracellular calcium and consequently reduce parathyroid hormone secretion seem attractive to transform the overall management of PHPT with good early results but still await further large randomised studies.

ABSTRACTS OF SYMPOSIA:

S1.1 DIAGNOSIS AND CLASSIFICATION OF GLUCOSE INTOLERANCE STATES.

El-Fellani A. MOHAMMED Department of Diabetes and Endocrinology, Regina General Hospital, Regina, Saskatchewan, Canada. Tel E-mail:

Diabetes mellitus is not a single disease, but a group of diseases of abnormal carbohydrate metabolism characterized by hyperglycemia. It is associated with relative or absolute impairment in insulin secretion with variable degree of peripheral resistance to the action of insulin. Multi organ dysfunction or even organ failure is still the major concern regarding this metabolic disorder. Knowledge of the glucose homeostasis is not only necessary for understanding the pathophysiologic abnormality

but will also be very useful in the management strategy and wise use of the anti-diabetic agents. An overview of glucose metabolism and related organs in glucose regulation will be discussed. The current diagnostic criteria and classification of Diabetes will be reviewed. The impact of the two new categories of hyperglycemia, namely, normal fasting glucose and impaired fasting glucose were added to the above criteria. Reduction in the fasting plasma glucose cut point was used to diagnose the disease. The use of fasting plasma glucose as apposed to OGTT to screen for and diagnose the disease. The reasons behind the ADA's (2003) new recommendation regarding the cut point for normal fasting plasma glucose will be pointed out and finally a brief highlights on the most recent, under investigation treatment of type 1 and type 2 Diabetes.

S1.2 THE METABOLIC SYNDROME IN 2006 AND BEYOND.

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The metabolic syndrome (obesity, hyperglycaemia, dyslipidaemia, and hypertension) has become one of the major public-health challenges world-wide. There has been a growing interest in this constellation of closely related cardiovascular risk factors. Although the association of several of these risk factors have been known for more than 80 years, the clustering received little attention until 1988 when Reaven described syndrome X. More recently, obesity and especially central obesity became an essential component of the syndrome. It remains unresolved as to whether the diagnosis of the metabolic syndrome or measurement of insulin resistance add to cardiovascular disease risk prediction beyond the currently recommended CVD risk calculators and the clinical utility of diagnosing the metabolic syndrome remains a subject of ongoing debate. The presentation will discuss the definitions of the metabolic syndrome as set by the National Cholesterol Education Programme (NCEP), the WHO and more recently the IDF. The evidence-base behind the setting of thresholds for various components and definitions will be reviewed and the potential benefits (or not) to the patient, from being diagnosed as having the metabolic syndrome and its predictive value in terms of subsequent cardiovascular disease will be presented.

S1.3 GESTATIONAL DIABETES: SHOULD WE SCREEN?

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Gestational diabetes is defined as carbohydrate intolerance of variable severity with onset or first recognition during pregnancy. Pregnancies associated with gestational diabetes are associated with adverse maternal and fetal outcome and so for the majority of obstetricians screening for gestational diabetes is considered as routine part

of antenatal care, however there is no evidence to suggest that this will reduce maternal and fetal complications, this lack in supporting evidence has led to controversy over the appropriateness of screening for this condition resulting in various and conflicting recommendations by professional organizations and societies. The argument over the need to screen for gestational diabetes extends to involve who should be screened, the most appropriate time in pregnancy to screen, the effectiveness of the available screening tests, and the possible benefits and disadvantages of screening. Confusions over what test to use is further aggravated by the absence of a “gold standard” diagnostic test as the precise level of hyperglycaemia that carries an increased risk of pregnancy complications is unknown. The HAPO study “hypoglycaemia and adverse pregnancy outcome” has been designed to answer this question, results from this study are expected by mid 2007. The assumed benefits of screening for diabetes is to reduce maternal and foetal complications, most trials have shown improvement in intermediate outcomes including macrosomia, neonatal hypoglycaemia and neonatal hyperbilirubinemia with no evidence of reduction in long term outcomes such as neonatal injury, maternal injury and perinatal mortality. Although a recent trial published in the New England journal of medicine June 2005 (ACHOIS) showed a significant reduction in the risk of serious complications among those screened and treated for gestational diabetes. Further more we must consider the unnecessarily anxiety resulting from false positive results and the “medicalization” of the pregnancy of women who are diagnosed with gestational diabetes by increasing hospital admission, antenatal visits and caesarean section rate. Finally until more evidence is available from large randomized control trials the option of whether or not to screen should be left to the obstetrician, it seems that screening in early pregnancy with simple tests such as random or fasting blood sugar is a reasonable approach as it will pick up cases of undiagnosed type 1 or type 2 diabetes which require long term treatment.

S1.4 NEONATAL DIABETES

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Neonatal diabetes differs from type 1 diabetes in that its course is highly variable. Some patients have permanent diabetes but others have transient diabetes. Both permanent and transient neonatal diabetes are extremely rare with an estimated incidence of 1 per 500,000 births. Between 50-60% of cases of neonatal diabetes are transient. Transient neonatal diabetes (TNDM) presents in growth retarded neonates with hyperglycaemia, dehydration and failure to gain weight in the first six weeks of life in term infants. Patients usually require exogenous insulin therapy for a mean of three months. The condition spontaneously resolves before 18 months of age; however some patients develop type 2 diabetes later in life. In most cases, TNDM seems to be caused by double dose of a gene on chromosome 6q24 that is normally expressed only from the paternal copy. In contrast to the TNDM the aetiology of permanent neonatal diabetes mellitus (PNDM) is more heterogeneous. The most

common cause of PNDM is a heterogeneous activating mutation in the gene, KCNJ11, encoding the KIR 6.2 subunit of the ATP-sensitive K⁺ channel of the β-cell. Activating mutations in the KIR 6.2 subunit increase the number of open channels on the cell membrane resulting in prevention of insulin secretion. Cases of PNDM have also been found to be caused by homozygosity maturity onset diabetes of the young MODY genes glucokinase and insulin promoter factor-1, the later associated with pancreatic agenesis. Both are rare causes of PNDM.

S1.5 CAN WE PREVENT DIABETES ?

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Diabetes mellitus is occurring in epidemic proportions with increasing incidence and prevalence all over the world. The economic and social costs of this disease makes a compelling case for prevention. Epidemiological studies have shown clearly that type 2 diabetes results from interaction between a genetic predisposition and lifestyle factors including obesity, sedentary life, and calorie excess. The natural history of T2D includes a period of prediabetes (IGT or IFG) which provides an opportunity for targeted intervention within large communities. Lifestyle intervention studies have consistently shown that quiet modest changes can reduce the progression of IGT to diabetes by 50%-60%. The main disadvantages of lifestyle measures are that they are difficult to achieve and sustain. This has led to consideration of pharmacotherapy. Big intervention studies with metformin, troglitazone, orlistat, acarbose, nateglinide, HRT, statins, fibrates, captopril, ramipril, and valsartan showed that these drugs could reduce / delay progression of T2D in high risk individuals. The main disadvantages of pharmacological intervention are identifying target populations, costeffectiveness, and duration of intervention. Therefore more research is needed to establish safe and costeffective ways to prevent this modern epidemic.

S2. COMPLICATIONS OF DIABETES:

S2.1 THE EVIDENCE BASE FOR TIGHT BLOOD PRESSURE CONTROL IN TYPE 2 DIABETES MELLITUS.

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DM is a leading cause of morbidity and death. Most adverse diabetes outcomes are a result of vascular complications, which can be Micro vascular or Macro vascular. In order to prevent, or diminished the progression of micro vascular and macro vascular complications, recommended Diabetes management necessarily encompasses both metabolic control and cardiovascular risk factor control. The need for good glycaemia

control is supported by the Diabetes Control and Complication Trial in Type 1 DM and more recently, UKPDS in Type 2 DM. In these studies, tight blood sugar control reduced micro vascular complications, but had little effect on macro vascular outcomes. Up to 80% of patients with type 2 DM will develop or die of macro vascular disease, underscoring the importance of preventing macro vascular complications. Treatment of BP in type 2 DM provides dramatic benefit. Target diastolic BP of less than 80 mm Hg appear optimal; systolic targets have not been as rigorously evaluated but targets of 135 mm Hg or less are reasonable. Studies that compare drug classes do not suggest obviously superior agents. However, it is reasonable to conclude that BP goals of 135/80 mm Hg, provides dramatic benefits. Angiotension–converting enzyme inhibitors, angiotensin-II receptor blockers and thiazide diuretics may be the best first-line treatments, although other agents usually necessary and goals may not be achieved even with three or four agents. Aggressive BP control may be the most important factor in preventing outcomes in patients with type 2 Diabetes

S2.2 DIABETES AND THE EYE

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Diabetes mellitus (DM) is a major medical problem throughout the world. It causes an array of long-term systemic complications, which have considerable impact on both the patient and the society because it typically affects individuals in their most productive years. Ophthalmic complications of diabetes include corneal abnormalities, glaucoma, iris neovascularization, cataracts and neuropathies. However, the most common and potentially most blinding of these is diabetic retinopathy (DR). Conventionally, DR is classified in a progressive fashion according to severity and prognosis. Mild nonproliferative diabetic retinopathy (NPDR) is characterized by the presence of at least 1 microaneurysm. Moderate NPDR with the presence of haemorrhages, microaneurysms, hard exudates, soft exudates, venous beading and IRMA less than that of severe NPDR. Severe NPDR (4-2-1) with haemorrhages and microaneurysms in 4 quadrants venous beading in at least 2 quadrants, IRMA in at least 1 quadrant. Proliferative diabetic retinopathy (PDR) is further sub classified as Early PDR presence of new vessels but not meeting the criteria for high-risk PDR and high risk PDR with new vessels on the disk (NVD) greater than or equal to one-third to one-half disc area (DA) and any amount of NVD with vitreous or preretinal haemorrhage or new vessels elsewhere (NVE) greater than or equal to one-half DA with preretinal or vitreous haemorrhage. Macular oedema warrants a special mention. It is a leading cause of visual impairment in patients with diabetes. It is possibly due to functional damage and necrosis of retinal capillaries. In cases of PDR, oedema also may be caused by retinal traction if the retina is sufficiently elevated away from the RPE. CSME is defined as any of the following: retinal thickening located 500 mm or less from the centre of the foveal avascular zone (FAZ), hard exudates with retinal thickening 500 mm or less from the centre of the FAZ or retinal thickening 1 disc area

or larger in size located within 1 disc diameter of the FAZ. Management of diabetic retinopathy constitutes a medical component of good blood glucose control and management of hypertension. The role of the ophthalmologist expertise is need for laser photocoagulation, vitrectomy and cryotherapy. The ophthalmologist and physician need to work together to achieve recognition and timely management.

S2.3 THE DIABETIC FOOT

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Diabetes is the leading cause to non traumatic amputation of the lower limb all over the world. This results from the complex interactions, between peripheral neuropathy, peripheral vascular and joint disease. The quality and duration of life is very much reduced after amputation. This poor outcome is partly because of the severity of the underlying disease or partly because management is often suboptimal. Hence it is of utmost importance to prevent amputation. Risk factors for diabetic foot problems may be different among different population, therefore identification of major cases of foot ulceration and amputation are important in future preventing actions in a particular region. Systematic screening, treatment and patient education protocol should be implemented. All persons with diabetes should have their foot examined at first consultation and at least annually thereafter. Examination at more frequent intervals may be needed in some cases; for dermatological conditions, peripheral vascular disease, peripheral neuropathy, foot deformities and footwear. Examination enables to assess the patient for the risk of amputation. After classifying into risk categories, a treatment plan should be made for each patient. For those at the greatest risk of foot pathology a referral to specialist footcare team can be made if necessary. All patients regardless of risk category require ongoing foot health education. This should cover; explanation of nerve and blood vessel disease and liability to infection, avoidance of trauma, care of superficial wounds, foot hygiene, proper footwear, smoking cessation and exercise. Attention also should be paid to the identification and management of hyperglycaemia, hypertension, renal disease, problems with diet or weight and dyslipidaemia. Well informed and motivated patients and health professionals are the best defense against diabetic limb loss.

S2.4 ADVANCES IN MANAGEMENT OF SEXUAL DYSFUNCTION IN DIABETIC MEN.

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Erectile dysfunction is one of the most important symptom of which men complain. This is increasing in frequency particularly in men with diabetes. We had had vast local experience since 1985 in the management of erectile dysfunction. We take a

meticulous history and patients under go full investigations to reach the cause of erectile dysfunction (ED). In chronological order, we started with the intracorporal injection of vasoactive drugs (Papaverine, PGE1) in the treatment of honeymoon impotence and diabetic patients and in vascular, psychogenic and neurogenic impotence. In the later years, since their availability, the oral agents became the first line therapy starting with Sildenafil and followed by its friends (Vardenafil, Tadalafil etc). Penile prosthesis still has very important role in our practice for patients not responding to other kind of treatment or has contraindications for their use. In this paper we will discuss our experiences, results and complications of each type of treatments.

S3.1 EPIDEMIOLOGY OF TYPE 1 DIABETES IN BENGHAZI

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(No Abstract Received)

S3.2 MODERN MANAGEMENT OF DIABETIC KETOACIDOSIS IN CHILDREN

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Diabetic ketoacidosis (DKA) is the most frequent related cause of morbidity and mortality in children with type 1 diabetes mellitus (T1DM). Although DKA occurs less frequent in children with type 2 diabetes, case series have documented frequencies of DKA at diagnosis of type 2 diabetes in children ranging from 6-33%. A diagnosis of type 2 diabetes can not be excluded based on the occurrence of DKA. The frequency of DKA at diabetes onset range between 15-67% in Europe and North America and rates correlate inversely with regional incidence of type 1 diabetes mellitus. The incidence of DKA at onset of Type 1 diabetes mellitus is more common in children under the age of five years of age, children without a first degree relative of type 1 diabetes mellitus, and children from families of lower socioeconomic status. In children who have established diabetes, DKA occurs at a rate of approximately 1-10% per patient per year. DKA in patients who have established diabetes occurs more frequently in patients with poor metabolic control (high HbA1c) or previous DKA, children with psychiatric disorders, adolescent girls, and those with difficult family circumstances including lower socioeconomic status and lack of appropriate health insurance. 75% of episodes of DKA beyond diagnosis are probably associated with insulin omission or treatment error. The remainder is due to inadequate insulin therapy during inter-current illness. The risk of mortality from childhood diabetic ketoacidosis is less than 0.5%. Most of DKA related deaths are caused by cerebral oedema (62%-87%), only a minority of deaths in DKA are attributed to other causes. Cerebral oedema occurs in about 0.3-1% of all episodes in DKA, and its aetiology, pathophysiology and ideal method of treatment are poorly understood. The mortality

of cerebral oedema is around 25% with 35% of survivors suffering severe neurological sequelae. Prevention of DKA and reduction of its incidence should be a goal in managing children with diabetes.

S3.3 THYROID DISEASE IN PREGNANCY

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As thyroid disorders are in general much more prevalent in women than in men, it is not surprising that thyroid disorders are relatively common among pregnant women. During pregnancy maternal thyroid function is modulated by three factors including an increase in hCG concentrations that stimulate the thyroid gland, In hyperemesis gravidarum and trophoblastic tumours hCG concentrations may increase in to a level sufficient to induce biochemical hyperthyroidism, significantly increases in urinary iodide excretion and an increase in thyroxine-binding globulin during the first trimester. Concerning the thyroid and infertility, there is good evidence to suggest that thyroid autoimmunity (TAI) is involved in infertility with regard to pregnancy loss thyroid autoimmunity is associated with a significant increase in the risk of miscarriage. The main risk associated with TAI is the occurrence of maternal hypothyroidism; this can be easily prevented by screening for thyroid dysfunction and antibody presence during early pregnancy, followed by the administration of L-thyroxine when needed. The two most common causes of thyrotoxicosis in pregnancy are Graves' disease and gestational transient thyrotoxicosis. In management of Graves' disease during pregnancy the main principle of anti-thyroid drug treatment is to administer the lowest dose needed for regulating clinical symptoms, accepting mild degree of thyrotoxicosis. Both propylthiouracil and carbimazole/methimazole can be used during pregnancy. Radioactive iodine is contraindicated in pregnancy. Foetal and neonatal thyrotoxicosis is a real risk when TSH-R Antibodies has not decreased during late gestation. Undiagnosed hypothyroidism is present in 2-4% of unselected women entering pregnancy. In most women with pre-existing hypothyroidism; thyroxine requirement increase by 50% above preconception dosage. Maternal hypothyroxinemia even when it is mild may be associated with alterations in the neuro-psycho-intellectual outcome in the progeny. Evaluation of the solitary thyroid nodule during pregnancy relies on the use of ultrasound and fine needle aspirations, as the radioisotope thyroid scan is contraindicated. Treatment options for thyroid carcinoma during pregnancy are limited to thyroid surgery.

CLINICAL MANAGEMENT WORKSHOPS:

WS1: MANAGEMENT OF DIABETES: FROM LIFE STYLE TO INSULIN

WS1.1 DIET FOR LIBYAN DIABETICS

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Abstract: Dietary advice is continuously changing: it is becoming more lax. Refined sugar can now be taken, though not alone. The total amount of carbohydrate, not the type, is important. Type 1 diabetics should adjust their premeal insulin dose according to the carbohydrate (not protein or fat) content of the meal. Long term beneficial effects of low glycaemic index foods is not determined. Recommended sweeteners are: saccharin, aspartame, acesulfame potassium and sucralose. Couscous, pasta and legumes in sauce in traditional Libyan diet are acceptable sources of carbohydrates. Fibre in type 2 diabetes must be consumed in very large amounts to be of benefit.

Protein intake in Libya is 70-80g/day, in line with the recommended. Protein intake does not contribute to postprandial hyperglycaemia. Many areas in Libya do not traditionally eat fish. Olive oil is high in monounsaturated fatty acids and contains the recommended ratio of omega 6: omega 3 oils. Latter also contained in walnuts.

50% of male diabetics and 75% of female diabetics in Libya are obese. For weight reduction, restriction should be on fat intake. Except in certain conditions, the extensive use of multivitamins in Libya is not warranted, nor is the use of tri-B (vit B1,B6,B12) for diabetic neuropathy. Pregnancy: there is increased energy needs in the 2nd & 3rd trimesters, folate \pm multivitamins should be started prepregnancy. A night-time snack will prevent nocturnal hypos and fasting ketosis.

WS1.2 OPTIMAL USE OF THE OLD AND NEWER ORAL ANTIDIABETIC DRUGS.

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The oral agents available to treat patients with type 2 diabetes mellitus (DM) have increased in number and difference in mode of action. Thus we now have more opportunity than ever before to make more choices and combinations of the old and established drugs with the newer agents. The traditional step wise approach will be discussed. Having failed diet and exercise, metformin monotherapy is the first to employ particularly in obese patients. Metformin has been shown to reduce cardiovascular disease in the UKPDS. In the steno 2 trial, however, non-obese

patients were started on a sulphonylurea. This is also more appropriate for intensely symptomatic patients and thin patients. Metformin therapy is complicated by gastrointestinal side effects in over 30% of patients. In addition it is increasingly recognized that monotherapy is not adequate to achieve glycemic targets. Therefore earlier use of the combinations is

encouraged. As over 85% of the type 2 diabetic patients are obese, it becomes obvious that counteracting the insulin resistance is more appropriate than stimulating further insulin secretion. Use of an insulin sensitizer such as Rosiglitazone or Pioglitazone is the logical step in those who could not tolerate metformin or has contraindications for its use. The combination of metformin and a Glitazone in those who do not respond adequately to either one of them is probably ideal. The use of triple therapy (i.e metformin, a glitazone and a sulphonylurea) has recently gained a licence for use in Europe and is increasingly gaining grounds over consideration of insulin in those who are obviously not-insulin deficient. It has a more physiologically-based logic, less inconvenience than insulin and less associated weight gain. Use of the new preparations from the older agents such as modified release form of metformin and sulphonylureas may give additional benefits in some patients but may not be the first line preparations to use. The old alpha glucosidase inhibitors though they are weak agents but still has a place in those with impaired renal or cardiac functions. The newer postprandial regulators may have some advantages in certain patients but they are not widely used. The choices and combinations of new and older oral agents reflects a matching game of their features with the individual needs of the patient.

WS1.3 INSULIN THERAPY: THE PRINCIPLES AND PRACTICE

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All type 1 diabetic patients need insulin treatment. In type 2 diabetes, insulin may be used temporarily during periods of acute illnesses or stress and during pregnancy to control hyperglycaemia. Many type 2 patients will become refractory to diet and oral agents overtime, and will also require insulin for metabolic control. Insulin lowers blood glucose by suppressing hepatic glucose output and by stimulating glucose uptake by peripheral tissues. A variety of insulin treatment protocols are frequently used to mimic the physiological secretion of insulin in healthy people (with relatively constant low background level on which are superimposed prandial peaks of insulin secretion). These protocols are using short and longer acting insulins or a combination of both. The choice of regimen will depend on several factors, including the desired degree of metabolic control and the patient's lifestyle and ability to adjust to insulin injections and availability of medical facilities. Besides the use of the standard insulin syringes, Insulin pen devices are also available. (and they are easy and convenient to use). Intensive insulin therapy using a subcutaneous pump is an alternative to multiple daily injections. The rapid acting insulin analogues are associated with lower postprandial glucose levels and lower rates of hypoglycaemia.

Nowadays nasal insulin is a promising alternative as it obviates the inconvenience of using injections. Patients initiating insulin therapy must be educated on the recognition and management of hypoglycaemia and sick days, adjustment for food intake and physical activity and also advice on driving and work. They should be strongly encouraged to perform self-monitoring of blood glucose. With continuous education and guidance, the insulin treated patient can lead a normal and active lifestyle.

WS2: WORKSHOP THEME: DIABETIC AND ENDOCRINE EMERGENCIES

WS2.1 THYROID EMERGENCIES

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Thyroid disorders are common but thyroid emergencies are rare. Thyroid storm is a sudden, life-threatening exacerbation of thyrotoxicosis. In its pure form the manifestations are due simply to the action of excess thyroid hormone. In recent years, thyroid storm has become rare, largely because of earlier recognition of the disease, better pre- and postoperative medical management. Acute exacerbations of the symptoms of thyrotoxicosis induced by undercurrent illness, especially infection, are still seen occasionally. Thyroid storm may be the initial presentation of thyrotoxicosis. Common clinical presentation includes fever, tachycardia, neurological abnormalities, and hypertension, followed by hypotension and shock. Because thyroid storm is invariably fatal if left untreated, rapid diagnosis and aggressive treatment are critical. Diagnosis is primarily clinical, and no specific laboratory tests are available. Several precipitating factors can lead to progression of thyrotoxicosis to thyroid storm. Today, thyroid storm occurs more commonly as a medical rather than a surgical crisis. Adult mortality is extremely high (90%) if early diagnosis is not made and the patient is left untreated. With better control of thyrotoxicosis and early management of thyroid storm, adult mortality has declined to less than 20%. Myxedema coma or crisis, an uncommon but life-threatening form of untreated hypothyroidism with physiological decomposition. The condition occurs in patients with long-standing untreated hypothyroidism and is usually precipitated by a secondary insult such as climate-induced hypothermia, infection, other systemic diseases, and drug therapies. Patients with myxedema coma have changes in their mental status, including lethargy, stupor, delirium, or coma. If not promptly diagnosed and treated, mortality rates are nearly 100%. Even with immediate recognition and appropriate medical intervention, mortality rates of up to 25% are observed. Early recognition of thyroid emergencies is essential because the early diagnosis and optimal treatment will reduce the mortality and morbidity rates.

WS2.2 PITUITARY AND ADRENAL EMERGENCIES

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Both Pituitary and adrenal gland dysfunction can be the underlying cause of life threatening medical emergencies. An early recognition and prompt intervention is almost always life saving and can completely reverse the hemodynamic, neurological, and electrolyte abnormalities without any residual deficit. Proper initial assessment and urgent management is challenging to physicians most of the time. The current and past medical history which may include: autoimmune disease, history of surgery, or head and neck irradiation may be related to some cases of adrenal and pituitary emergencies. Others such as paroxysmal or sustained hypertension, headache and/or sweating can also be the key point to suspect the diagnoses. The current and previous list of medications may all help and give some clues to the cause of the underlying situation.

WS2.3 MODERN MANAGEMENT OF DIABETIC KETOACIDOSIS IN ADULTS.

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The most common reasons for acute admission to our department at Tripoli diabetic hospital are either DKA or diabetic metabolic decompensation. Diabetic ketoacidosis (DKA), an acute complication of diabetes caused by a relative or absolute lack of insulin. We defined DKA as hyperglycemia (serum glucose of >14mmol/l) in the presence of two of the triad of serum bicarbonate of <15mmol/l, arterial PH of <7.35 or significant ketosis (urine ketostix ++ or more). DKA is associated with a considerable morbidity and mortality, usually precipitated by stopping insulin 41% ,infection 13%, other intercurrent illness 7% , no causes identified 17% and 22% are newly diagnosed cases.The importance of the most common precipitating factors of DKA varies with the population sample being studied., if DKA is adequately managed the prognosis is excellent. however when the patient is elderly or when the intercurrent illness is significant (such as sepsis, myocardial infarction, renal impairment) there is significant mortality. Presentation with Coma and/or renal impairment are a particularly poor prognostic sign; careful monitoring of fluid and electrolytes and treatment of intercurrent illness are crucial for optimizing outcome.

WS2.4 DIAGNOSTIC AND CLINICAL MANAGEMENT STRATEGIES FOR HYPOGLYCAEMIA

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Despite our advances in the treatment of diabetes, hypoglycemic episodes are often the limiting factor in achieving optimal blood sugar control. In addition to the biochemical processes that occur, the body starts to consciously alert the affected person that it needs food by causing the signs and symptoms of hypoglycemia, there is some degree of variability among people, in the symptoms and signs of hypoglycaemia but also within individual over a period of time. While much hypoglycaemia is symptomatic and inconvenient rather than dangerous, in a group of patients it may lead to incapacity, injury or seizures, is particularly unwelcome in the elderly and people with severe micro- and macroangiopathy. Patients receiving certain sulphonylurea (glibenclamide) or insulin are particularly at risk. There are other rare causes for hypoglycemia, such as insulin producing tumors and some herbal and traditional medications. Severe hypoglycaemia is more common in a syndrome of hypoglycaemia unawareness; in which patients with insulin treated diabetes fail to recognize falling blood glucose until it is too late to be corrected. Also severe hypoglycaemia may occur in diabetic patient who lack other counter-regulatory hormones (hypopituitarism, adrenal insufficiency and pancreatectomy). An episode of severe hypoglycaemia may induce extreme fear in the patient and his family; leading to noncompliance with medication and deterioration in glycaemic control. Also may have other impact on patient's life such as job prospect, driving motor vehicle or using heavy equipment. If in spite of well planned medication and meals, still events do occur. Patients should be reassured that a modicum of vigilance (through more frequent blood glucose monitoring and a careful review of results), as well as further diabetes education (so that patients become more skilled regarding prevention, recognition and treatment of hypoglycemia), can reduce the risk of any potential problems even further.

ABSTRACTS OF FREE COMMUNICATIONS: ORAL COMMUNICATIONS:

OC1. INFECTION-RELATED MORBIDITY AND MORTALITY AMONG LIBYAN DIABETIC PATIENTS AT TRIPOLI MEDICAL CENTRE.

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INTRODUCTION: The risk of infection-related morbidity and mortality among diabetics are increased. In this study, the causes of infection related morbidity and mortality among diabetic patients admitted in Tripoli Medical Centre (TMC), a major secondary and tertiary referral centre for the western provinces of Libya examined. **METHODS AND MATERIALS:** The case notes for all patients admitted with infection to medical wards at TMC during a 3 year period (January 2000 - December 2002) were reviewed. Admission diagnoses, demographic variables, past medical history of co-morbid conditions were noted. **RESULTS:** Infection was encountered in

488 (8.4%) of all people with diabetes admitted to the medical wards. They were 236(48.4%) males and 252 (51.6%) females. The mean age for all patients was 61.9±13.9 (range16-97) years. Infection was the primary cause of admission in 369 patients. Respiratory tract infection accounted for 57.2% of the admissions. These were due to pneumonia (78.7%), tuberculosis (12.3%), bronchiectasis (5.2%) and lung abscess (2.4%). Gastrointestinal infection occurred in 10.6% of the admissions due to acute gastroenteritis (76.9%), ascending cholangitis (17.9), and two patients admitted with liver abscess. In 119 patients infection complicated other primary diagnoses. These were mainly attributed to chest infection, septicemia, urinary tract infection and skin infection. The overall in-patient mortality was 22.2%. Mortality in respiratory tract infection was 11.8% all due to pneumonia. Mortality due to acute gastroenteritis was 16.7%, ascending cholangitis (42.9%). In the 119 patients in whom infection complicated other diagnosis the overall mortality was 29.4%. The overall in-hospital mortality among diabetic patients admitted with infection was high (24%). The main reasons for deaths were pneumonia (n 46, 39.3%) and septicemia (n 47, 40.2%). Other poor prognostic markers included older age, history of cerebrovascular disease, hypoglycemia and hyperglycemia (>350mg/dl) at presentation. **CONCLUSIONS:** The greater risk for infection-related mortality among diabetics call for adoption of aggressive preventative measures and therapeutic measures.

OC2. PREVALENCE OF MICROALBUMINURIA AND AWARENESS OF ITS SIGNIFICANCE IN NEWLY-DIAGNOSED TYPE 2 DIABETIC PATIENTS IN TRIPOLI, LIBYA.

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BACKGROUND: Microalbuminuria has been identified as risk factor predicting development of diabetic nephropathy in type 1 diabetes (T1DM) and increased cardiovascular risk in type 2 diabetes mellitus (T2DM). **OBJECTIVES:** The aims of this study were to firstly assess the prevalence of microalbuminuria in newly diagnosed persons with diabetes mellitus in Tripoli, Libya, secondly, test the relationship between hypertension, obesity, microalbuminuria in this subgroup of patients and thirdly assess the awareness of patients about microalbuminuria. **PATIENTS AND METHODS:** Patients with newly diagnosed diabetes in the previous 6 months were recruited. They were chosen from 7 primary care diabetes clinics. An informed consent was obtained and a questionnaire was filled by the patients and the awareness was tested by semi-structured interview. A physical examination was conducted by a single observer (including height, weight and blood pressure). Samples were taken for assessment of glycaemic control and microalbuminuria (Micral II spot test (Roche)). A total of 316 consecutive patients were included. Their mean age was 49.9 (26-80) years. 58.2% were women. None of the patients had had any dysuric symptoms at the time of testing. **RESULTS:** Out of the 316 patients studied, 72 patients tested positively for microalbuminuria (22.8%). Of these 54 patients (75%) had hypertension.

Non-parametric testing (χ^2) showed a significant correlation between hypertension and presence of microalbuminuria ($p < 0.0001$) and between microalbuminuria and obesity ($p < 0.0001$). The poll of the patients revealed that none of the respondents know what microalbuminuria. None were aware of the relationship of the diabetes-associated kidney damage. Also no patient was aware whether had had been tested microalbuminuria. **CONCLUSIONS:** This study demonstrated a high prevalence of microalbuminuria in the newly diagnosed type diabetic patients in Tripoli. It is specially increased in obese and hypertensive patients. No knowledge of the concept of microalbuminuria was detected nor any awareness of the increased risk of kidney disease associated with diabetes suggesting the need for intensive education of primary health care professionals and patients to prepare for systematic screening and timely interventions.

OC3. THE CORRELATION BETWEEN HBA1C LEVELS AND DIABETIC RETINOPATHY IN LIBYAN PATIENTS

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BACKGROUND: Diabetic retinopathy (DR) is a major cause of preventable blindness in our country. It has no symptoms before developing late complications such as vitreous haemorrhage or retinal detachment. Long term poor glycaemic control is a known risk factor for diabetic retinopathy and its progression. Whether short and medium term control has a predictive value is not established. Depending only on fasting blood sugar test for long term control of diabetes is not reliable for early recognition and treatment of diabetic retinopathy. **AIMS:** To correlate the fundus changes with the level of serum glycosylated haemoglobin (HbA1c) and fasting blood glucose (FBG). **PATIENTS AND METHODS:** 2000 Libyan diabetic patients, (864 men and 1,136 women). Their mean age was 50 +/- 20 years and they had had diabetes for 12 +/- 7 years. 760 patients were on insulin therapy and 1,240 on oral hypoglycaemic agents. 20% of the patients were known hypertensives. Detailed fundus examination with 90 diopter through fully dilated pupil was carried. Their FBG and HbA1c was recorded for this survey. **RESULTS:** No Diabetic retinopathy was detected in 610 patients (30.5%). 540 patients (27.0%) had background diabetic retinopathy (BGDR), 380 (19%) had pre-proliferative (PPDR) and 470 (23.5%) had proliferative diabetic retinopathy (PDR). The mean HbA1c for the whole group was 8.7 +/- 2%. There were no one with HbA1c <4%. Fifty patients were between 4-6%, 1380 patients between 6-8%, 452 patients between 8-10 and 118 patients >10.0%. The mean fasting blood glucose for the group as a whole was (150 +/- 50 mg/dl). Blood glucose were < 126 mg/dl in 140, 126-150 mg/dl in 882 patients, between 150-180mg/dl in 768 patients and >180 mg/dl in 210 patients. Patients with better glycaemic control indicated by lower HbA1c (less than 7%) had lesser frequent and also milder forms of diabetic retinopathy (no retinopathy at all (70%), mild BGDR (23%) and PPDR/PDR (7%) whereas patients with poor glycaemic control (HbA1c

>10%) had more frequent diabetic retinopathy and more advanced disease (No one had normal fundi, 3% had mild BGDR and 97% had had PPDR/PDR. **CONCLUSIONS:** All diabetic patients should have HbA1c test every 3-6 months. High HbA1c identifies patients at high risk and more detailed and possibly more often retinopathy screening is mandatory for those with higher levels.

OC4. PERINATAL MORBIDITY AND MORTALITY IN RELATION TO THE DEGREE OF GLYCAEMIC CONTROL IN AL-KHADRA HOSPITAL, TRIPOLI, LIBYA.

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OBJECTIVES: The aim of this study was to determine the outcome of diabetic pregnancies in relationship to the degree of glycaemic control as measured by glycated haemoglobin (HbA1c). **PATIENTS AND METHODS:** A prospective study was performed in the department of obstetrics at Al-Khadra Hospital, Tripoli, Libya during a twelve month period from 1.1.2005 to 31.12.2005. Sixty six diabetic mothers who delivered during this period were included. Data on age, parity, previous history of caesarean section, macrosomia, congenital anomalies, intrauterine fetal death, gestational diabetes mellitus, and neonatal deaths were documented. Family history for diabetes and abortions was recorded. Pregnancy-induced hypertension in the index pregnancy was noted. Serum HbA1c was estimated during the first, second and third trimesters. Neonatal morbidity outcome data recorded included large for gestational age, small for gestational age, neonatal hypoglycemia, respiratory distress syndrome, polycythaemia, hypocalcaemia and hyperbilirubinaemia. **RESULTS:** The mean age of the mothers was 31.6 (range 23-44) years. There were 30 women with type 1 diabetes mellitus (T1DM), 9 women with type 2 diabetes mellitus (T2DM) and 27 women with gestational diabetes mellitus (GDM). There were 16 women of gravida 1, 21 women were gravida 2-3 and 29 women of gravida 4 or more. High risk factors included 5 cases of abortions, 24 cases of mild pre-eclampsia, 2 cases of severe pre-eclampsia, 2 cases of polyhydramnios and 1 case of oligohydramnios. There were 51 cases have received insulin and other 15 only treated with diet. In the group as a whole the serum HbA1c ranged in the first trimester (5.8-11.5 %) and in the third trimester (4.8-12.1%). Serum HbA1c of $\geq 8.5\%$ was taken as markedly abnormal. Women with such results were ($n = 3-4.4\%$, $n = 14.21\%$) in the first, second and third trimesters respectively. In early pregnancies abnormally high HbA1c was associated with 2 cases of congenital abnormalities (type of diabetes: GDM). High HbA1c was associated with large for gestational age ($n = 7$, 50%) in women with GDM ($n = 2$), type 1 ($n = 4$) and type 2 ($n = 1$). Neonatal hypoglycaemia occurred in all 14 women with high HbA1c (5 in GDM, 7 in type 1 diabetes and 2 in type 2 diabetes). **CONCLUSIONS:** Poor glycaemic control during pregnancy reflected in abnormally high HbA1c was associated with poor pregnancy and neonatal outcomes. Intensive management of

diabetes before and during pregnancy is needed to achieve the recommended international targets for non-diabetic pregnancies.

OC5: THE TREND OF PREVALENCE OF MACROSOMIA IN TRIPOLI, LIBYA (1983-2005).

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BACKGROUND: Identification of a macrosomic fetus is important to avoid occurrence of neonatal and maternal complications associated with macrosomia. The prevalence of macrosomia is increasing in some parts of the world, which may be due to increasing risk factors such as obesity, whereas it is decreasing in other areas as in USA, which may be due to early diagnosis of diabetes, and early intervention by either inducing labour or performing caesarean sections. The aim of the study was to examine the prevalence of macrosomia and its change over years and to evaluate its relation to sex, and months of the year. **PATIENTS AND METHODS:** A retrospective observational study at the Obstetric Department, Tripoli Medical Center. Data were collected from records of women who delivered between 1st January 2005 and 31st of December 2005. A total of 11,112 deliveries took place. Macrosomia was defined as birth weight of 4 kg or more. Comparisons were made with published series from the same settings 2 and 20 years ago. **RESULTS:** The prevalence of macrosomia was 10.6%. Macrosomia in our series and that of Elkhbouly and Benhamida in 2003 (11.8%) was both higher than the series of Soni et al. (1983) who reported only 4%. Further more, 84% of the babies had a weight between 2.5 to 3.9 kg, 4.8% between 1-2.5 kg and 0.05% were <1 kg. Majority of the macrosomic babies had weight between 4-5 kg (95.8%). There were more male macrosomic infants (62.7%) than macrosomic females (37.3%). The highest prevalence of macrosomia was observed in February, March and April (13.4%, 13.2%, 12.3% respectively), and lowest in June (9%). 25% of the macrosomic infants were born to diabetic mothers. **CONCLUSIONS:** We have shown a subtle short-term change in the prevalence of macrosomia (2003 to 2005) but a remarkable increased compared with data published 20 years ago (1983). The prevalence of macrosomia is higher in male infants and was greater in February - April. Diabetes in pregnancy carries a risk for macrosomia. Further studies are needed to ascertain the trend and causes of macrosomia. The methodology of screening for gestational diabetes may be particularly important.

POSTERS:

P01: ADRENAL INSUFFICIENCY IN PRIMARY ANTIPHOSPHOLIPID ANTIBODY SYNDROME.

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Antiphospholipid antibody syndrome is characterised by recurrent venous or arterial thrombosis, thrombocytopenia and/or recurrent fetal loss in the presence of antiphospholipid antibodies. Antiphospholipid antibody syndrome may be seen in-patients with established Systemic Lupus Erythematosus or alternatively as isolated disease in-patients with no evidence of a lupus type abnormality. Antiphospholipid antibodies have been also associated with a variety of neurological and cardiac manifestations. Adrenal failure has also been described as rare complication of this syndrome. We describe a 46-year-old man with a previous history of recurrent deep venous thrombosis (DVT) of the lower limbs, who presented with adrenal insufficiency despite taking warfarin. He presented with a history of feeling weak, tired, recurrent abdominal pain and hypotension. CT Abdomen showed bilateral adrenal masses. A diagnosis of Addison's disease was suspected on the basis of hyponatremia (132 nmo/L), and pigmentation. His short synacthen test was entirely flat 0-time cortisol 29-nmo/l, 30 minutes 27 nmol/l and 60 minutes value 29 nmol/l. ACTH 787 ng/L (NR 0-47) compatible with primary adrenal failure. He had an undetectable plasma Aldosterone with an elevated plasma Renin value were 11.2 pmol/ml/hr (NR 1.1-2.7). Adrenal antibodies were negative. He had normal thyroid function test. His Anticardiolipin IgG is >100 GP U/ml (NR 0-10), his IgM is 25.3 MPLU/ml (NRn0-7) all consistent with diagnosis of lupus anticoagulant syndrome. He was treatment with Glucocorticoids and mineralocorticoid replacement and he doing well on his current treatment. This cases highlights that the antiphospholipid antibody syndrome should be considered as a possible pathogenic process in patients presenting with Addison's diseases whom the aetiology is not obvious and especially on male patient.

P02: INCREASED BONE TURNOVER UNMASKING OCCULT VITAMIN D DEFICIENCY LEADING TO OSTEOMALACIA WITH GROWTH HORMONE TREATMENT IN AN ADULT.

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Growth Hormone (GH) deficiency in the adult is associated with sub-optimal bone mineral density (BMD) and reduced bone turnover. GH replacement therapy results in increased bone turnover and new bone formation with biphasic changes in BMD: an initial reduction, followed by sustained improvements. We report a case in which the anabolic effects of GH on bone precipitated profound Vitamin D (Vit D) deficiency:

highlighting clinical, radiological and biochemical features. A 56-year-old man with panhypopituitarism following treatment for acromegaly, commenced adult GH replacement following biochemical confirmation of severe GH deficiency (GHD). Baseline IGF-1 was markedly reduced at - 7.77 SDS. BMD was reduced at -4.82 and - 2.84 SDS at lumbar spine and hip, respectively, while bone turnover markers were normal, with urine deoxypyridinoline cross links/creatinine (DPD/Cr) ratio of 3.2 nmol/mmol (2.3-5.4) and plasma osteocalcin 3.0 mcg/L (1-7.2). Total and ionised calcium (iCa^{2+}), phosphate and alkaline phosphatase (ALP) were in the normal range, as they had been for the previous 2 years. GH replacement increased bone turnover, DPD/Cr ratio and plasma osteocalcin increasing to 9.6 nmol/mmol and 8.3 mcg/L respectively within 5 months, associated with increased IGF-1 (-0.92 SDS) and improved wellbeing. However, 11 months after commencing GH bone turnover remained high and the patient developed progressive symptoms of proximal myopathy. Subsequent examination 15 months after initiation of GH revealed wasting and weakness of proximal muscles. iCa^{2+} and phosphate were reduced at 1.11mmol/L (NR 1.19-1.37) and 0.5 mmol/L (NR 0.8-1.44) respectively. ALP was elevated at 247 u/L (NR 35-120). Intact parathyroid hormone (PTH) was markedly elevated at 558ng/L (NR 10-65). 25 (OH) cholecalciferol was reduced at <5 nmol/L (NR 10-75), while total Vit D was in the lower normal range at 23 nmol/L (NR 15-75). Radiology and radioisotope bone scans were consistent with osteomalacia. The patient was treated with high dose vitamin D analogues, with gradual improvement in symptoms and biochemistry. This case highlights the potential for GH replacement to increase bone turnover and unmask occult Vit D deficiency in susceptible individuals. Care should be taken to optimise Vit D status in such individuals prior to and at initiation of GH.

P03. PROLACTINOMA RESISTANCE TO STANDARD DOPAMINE AGONISTS AND ACQUIRED TACHYPHYLAXIS TO CABERGOLINE.

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BACKGROUND: Dopamine agonists are a mainstay in the treatment of both micro and macroprolactinomas. They reduce prolactin (PRL) levels and shrink tumours. A minority of prolactinomas are resistant to dopamine agonists and acquired resistance to dopamine agonist therapy is unusual. We present a case of macroprolactinoma which demonstrates sequential acquired resistance to Bromocriptine and Cabergoline. Moreover, withdrawal and re-challenge with Cabergoline resulted in changes in PRL levels consistent with partial tachyphylaxis of the tumour to this agent. **CASE STUDY:** A 38-year-old man presented in 1984 with visual obscuration, and secondary hypogonadism. PRL levels were 85,000 MU/L. Pituitary imaging with CT revealed a macroadenoma with supra-sella extension and bilateral cavernous sinus involvement. Bromocriptine was commenced, building to a final dose of 30 mgs/day. Visual symptoms resolved over 2-3 weeks. PRL levels fell, with normalisation of pituitary-

gonadal axis function. Serial radiology confirmed tumour shrinkage. Residual though stable cavernous sinus tumour was noted. 11 years after presentation, and without change in treatment or alteration in compliance, routine monitoring noted a progressive rise in PRL to 6500 MU/L. Repeat imaging noted no change in the appearances of the sella or the residual tumour. Bromocriptine therapy was withdrawn over 2 weeks, and Cabergoline introduced, building to a dose of 2 mgs/week. Serial monitoring of PRL noted a progressive fall over several months to 600-900mu/L. 5 years after commencing Cabergoline, serial monitoring again began to note a progressive rise in PRL levels such that over a 2 year period, PRL rose to 56,423 MU/L associated with symptoms of hypogonadism. Repeat pituitary imaging revealed increased tumour at the apex of the left orbit. There was no symptomatic or biochemical response to further increases in Cabergoline to 6 mgs/week. Cabergoline was withdrawn over 2 weeks, and Quinagolide introduced to a dose of 100mcg/day. PRL levels rose over 5 weeks to a peak value of 91,000 mu/L. Quinagolide was withdrawn, and Cabergoline re-introduced to a dose of 6 mg/week. 6 weeks after re-introduction, PRL levels had fallen to 12,240mu/L, consistent with a degree of re-sensitisation to Cabergoline. Thereafter, values progressively rose to a peak of 105,680 mu/L despite dose increments. The patient was treated with 45Gy external beam radiotherapy to a field including the pituitary fossa, cavernous sinus and tumour abutting the left orbital apex. Subsequent serial monitoring has revealed a progressive fall in PRL. **COMMENTS:** This case demonstrates acquired resistance to Bromocriptine and Cabergoline complicating the management of macroprolactinoma. The natural history of this process could involve the development of a drug-resistant tumour clone, data we presented demonstrate re-sensitisation following Cabergoline withdrawal and re-introduction in keeping with partial tachyphylaxis at a receptor or post-receptor level contributing to this unusual phenomenon.

P04: LESSON OF THE WEEK: DELAYED DIAGNOSIS OF SECONDARY HYPOADRENALISM DUE TO ISOLATED ACTH DEFICIENCY IN AN ADULT BECAUSE OF LACK OF HYPERPIGMENTATION AND ELECTROLYTE DISTURBANCES.

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A twenty seven year old intensive care nurse presented originally 6 months previously with a symptom-complex including weight loss, vomiting, diarrhoea, generalized aches and pains and feeling tired. She was admitted twice to the surgical unit to exclude surgical causes and particularly intestinal obstruction. Plain imaging of the abdomen revealed no evidence of obstruction and flexible sigmoidoscopy was normal. She was reviewed a month later and barium follow through was reported as normal. However, she has started to lose weight and thus was referred to the gastroenterologist for

further investigations of possible inflammatory disease. She lost 8 kg of weight in less than 3 months. Physical examination showed her to be bordering on being cachectic and there was some abdominal tenderness. Her baseline blood investigations were normal. Upper GI endoscopy was normal and biopsies were normal too. A psychiatric review, which was completely normal! A short synacthen test was done for sake of completion. Baseline serum cortisol was 63 rising to 339 nmol/l at 30 minutes. On repeating it was 30 nmol/l in the morning rising to 364nmol/l at 30 min and 537nmol/l at 60 min. Reviewing her investigations on admission revealed normal serum electrolytes, normal BP. Ultrasound of the abdomen was normal, thyroid function was normal and her LH and FSH were transiently marginally low. Serum Prolactin during her stress was 974 nmol/l. on basis of her low basal serum cortisol and poor response to ACTH, she was started on Hydrocortisone replacement over a weekend awaiting the serum ACTH measurements. The trial of Hydrocortisone replacement improved her well being and stopped the nausea and vomiting within a couple of days. Pituitary MRI scan was normal. Her serum folate, B12, ACE, autoantibody profile and Ferritin were all normal. She was reviewed 2 weeks later, on Hydrocortisone replacement of 20 + 5 + 10 she was feeling very well. She put on just 1kg of weight and she had no episode of vomiting for two weeks. BP: sitting 120/70 mmHg and standing 110/80 mmHg. Her Hydrocortisone dose was to 15 + 5 + 5. I explained to her that the most likely diagnosis here is isolated ACTH deficiency. COMMENTS: Isolated ACTH deficiency is a difficult diagnosis to make. However, although it is very much more rare than primary hypoadrenalism, It should still be considered in the typical presentation despite lack of a marked skin pigmentation and electrolyte disturbance.

P05. QUALITY OF GLUCOSE CONTROL IN PATIENTS WITH TYPE 2 DIABETES IN SAUDI ARABIA

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BACKGROUND: Diabetes is a common disease in Saudi Arabia with a prevalence of about 24 %. The purpose of this study is to assess the quality of glucose control and describe the modes of diabetes therapy in a cohort of patients with type 2 diabetes in the Eastern region of Saudi Arabia. METHODS: The study population consisted of adult patients with type 2 diabetes attending Internal Medicine, Family Medicine, Primary care and Endocrine clinics who had a minimum follow up of 6 months. RESULTS: A total of 438 patients were evaluated; the mean age was 54.2 ± 12.3 years; duration of diabetes since diagnosis 10.5 ± 7.4 years, and HbA1c 8.7 ± 1.95 %. Of all the patients, therapy consisted of oral hypoglycemic agents in 44.1 %, insulin in 55 % (including 35.1 % on both insulin and oral agents), and diet alone in 0.9 %. Of

patients on insulin, 78.8 % were on 2 or less daily injections and 21.2 % were on 3 or more daily injections. HbA_{1c} of less than 7 % was achieved in 20.2 % (95% CI, 16.4 to 24.1) of all patients (68.3 % of patients on oral agents, 13.4 % on insulin and 75 % of patients on diet alone), while 31 % (95% CI, 28.1 to 35.7) of patients (26.6 % of insulin-treated patients and 23.4 % of those taking oral agents) had poor glucose control (HbA_{1c} greater than 9.5%, as defined by the American Diabetes Association's quality improvement project). CONCLUSIONS: These data indicate that the majority of Saudi patients with type 2 diabetes required glucose-lowering drugs. A large proportion was on insulin and many patients on oral agents were candidates for insulin therapy. The high rate of poor glucose control is alarming and imposes a great risk of diabetes complications. Clinical, public health and research efforts are needed to address these issues.

P06. THE EFFECTS OF DIFFERENT TYPES OF DIABETES ON PREGNANCY OUTCOME IN TRIPOLI, LIBYA (2003-2004).

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BACKGROUND: Diabetes during pregnancy is classically divided as pre-existing diabetes including type 1 diabetes mellitus (T1DM) and type 2 diabetes mellitus (T2DM) on one hand and diabetes developing during pregnancy (i.e. Gestational Diabetes mellitus (GDM)). Different types of diabetes have different effects on maternal, fetal and neonatal outcomes reflecting the different mechanisms of pathogenesis. AIMS: The aim of this study was to assess the effects of the type of diabetes on pregnancy outcome (maternal, fetal and neonatal). PATIENTS AND METHODS: In a prospective design, a total of 210 pregnant women with diabetes delivered in Al-Jala Maternity Hospital, Tripoli, Libya over two years (1.1.2003 to 31.12.2004). 38 women had T1DM (18 %), 69 had T2DM (33%) and 103 had GDM (49%). The relative frequencies of the observed complications in the different types were documented. RESULTS: T1DM was associated with greater rates of pregnancy-induced hypertension (7.9%) and pre-eclampsia (13%). Fetal complications including prematurity (34.2%), intrauterine fetal death (7.9%), intrauterine growth retardation (2.6%) were greater in T1DM whereas macrosomia (30%) was particularly increased in T2DM. GDM was associated with increased rates of caesarean section (73.8%), polyhydramnios (7.9%) and premature rupture of membranes. Neonatal complications including increased risk of congenital heart disease (12.8%), neonatal hypocalcaemia (33.3%), perinatal mortality (20.5%) were increased in T1DM whilst polycythemia (5.7%), respiratory distress syndrome (7.1%) were increased in T2DM. Increased rate of neonatal hypoglycemia (39.4%) and hyperbilirubinemia (10.6%) were observed in GDM. CONCLUSIONS: Different types of diabetes seem to cause different spectra of complications during pregnancy. Careful attention to good glycaemic control at the critical stages should reduce the complications rates.

P07 THE OUTCOME OF ACUTE MYOCARDIAL INFARCTION AMONG LIBYAN DIABETICS: THE TRIPOLI MEDICAL CENTER EXPERIENCE (2000-2002).

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INTRODUCTION: Diabetes is an important risk factor for coronary artery disease. Furthermore diabetic patients with myocardial infarction have a worse prognosis than non-diabetic patients with myocardial infarction. **PATIENTS AND METHODS:** The demographic data, risk factors, clinical presentations, complications, management and outcome of hospitalization were extracted from the case records of 300 consecutive diabetic patients admitted to Tripoli Medical Centre with acute myocardial infarction from January 2000 to December 2002. **RESULTS:** Three hundred diabetic patients admitted with acute myocardial infarction (AMI) at Tripoli Medical Centre (48% of all AMI patients). The mean age for males was 59.6 ±11.4 years and for the females 63.4±10.8 years. The peak age of occurrence was at 60-69 years for both sexes. Male to female ratio was 2.1:1. Important risk factors included hypertension 40.3% and cigarette smoking 49.6%. Of these patients 45% received thrombolytic therapy, 53% β-blockers and 50% ACE inhibitors. The hyperglycemia was managed with injections of regular insulin, according to sliding scale. During hospitalization infarct extension was reported in 2% of the diabetic patients, Post AMI angina occurred in 6.3%, ventricular septal defect in 1%, VT/VF were reported in 6.3%, complete heart block in 10.7%. Cerebrovascular accidents were reported in 9 patients, ketoacidosis occurred in five diabetics (with no mortality) hyperosmolar non-ketotic state in two patients both died. Cardiogenic shock reported in 13% (with 80% mortality risk), Heart failure occurred in 29.7% with a mortality rate of 15.7%. Seventy seven patients were Seventy seven patients discharged home, 3.7% left against medical advice and 58(19%) patients died during hospitalization mainly due to cardiogenic shock 55%, and heart failure 24%. **CONCLUSIONS:** There is a high mortality rate of diabetic patients after myocardial infarction calling for more vigorous primary and secondary prevention measures as an integral part of their medical care.

P8. PROGNOSTIC INDICES FOR HOSPITAL MORTALITY IN DIABETIC PATIENTS IN TRIPOLI, LIBYA (2000-2002).

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INTRODUCTION: People with diabetes have higher all-cause mortality rates than similar people without diabetes, mainly attributable to cardiovascular causes. Better understanding of the burden of diabetes might guide decisions about treatment and prevention. Therefore, the mortality in diabetic patients admitted to Tripoli Medical Centre, a major secondary and tertiary care centre, over a three years period was investigated and the determinants of in-hospital mortality in diabetic patients were investigated. **PATIENTS AND METHODS:** In a retrospective design, the clinical

case records of all diabetic patients who died in the medical wards including the intensive care units, during the period between 1st January 2000 to 31st December 2002 were examined. Admission diagnosis, demographic variables, past medical history of co-morbid conditions were noted. **RESULTS:** During the study period a total of 575 diabetic deaths occurred. These accounted for 26.1% of all deaths occurring on medical wards. The mortality rate among diabetic patients was 9.9% compared with 6.5% in non-diabetic admissions. The deaths in people with diabetes involved 292(50.8%) males and 283(49.2%) females. The mean age was 65.3±12.7 (range 18-95). The leading causes of deaths were cardiovascular disease 183(31.8%), cerebrovascular accidents 102(17.7%) and Infection 83(14.4%). Other causes included malignancy (10%), liver cirrhosis (5.6%), and acute diabetes complications (5%). Factors predictive of mortality were admission- diagnosis of hyperosmolar non ketotic state, cerebro-vascular disease, acute coronary syndromes infection. Admission hyperglycemia, old age, renal dysfunction and prior Stroke were also associated with poor outcome. **CONCLUSIONS:** Diabetes contributed significantly to mortality in our medical wards. The excess mortality was mainly due to atherosclerotic complications and is potentially preventable through implementation of more aggressive approaches to the management of cardiovascular risk factors.

P9. THE PRACTICAL DIABETES KNOWLEDGE OF THE FINAL YEAR MEDICAL STUDENTS IN TRIPOLI, LIBYA

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BACKGROUND: Education is an essential pre-requisite for patient empowerment. In well-structured diabetes care, education is normally undertaken by diabetes specialist nurses or diabetes educators but doctors remain to have a role. Future doctors should have the basic knowledge by the time they qualify. **OBJECTIVES:** We aimed to assess the basic practical diabetes knowledge of final year medical students. **MATERIALS AND METHODS:** Randomly selected 325 final year students (2005-2006) in the Faculty of Medicine, Al-Fateh University, Tripoli, Libya were included. We used the Arabic 24-item "Short Diabetes Knowledge Test" modified from (Beshyah & Sherif, 2000). It has 24 multiple choice questions of which 14 were general and 10 were on insulin-treatment issues. Data were also collected on their prior exposure to the general medical and diabetes components of final year course, household history of diabetes and personal involvement with diabetes care, health care professionals in the family, their interest in Arabic health magazines and their future intentions. **RESULTS:** 325 questionnaires were served. The total score (mean (range)) was 18.4(9-24) out of 24, for the general questions was 10.0(4-14) out of 14 and for insulin treatment questions was 8.5(4-10) out of 10. In individual questions, the best scores (>90%) were related to clinical management of hypoglycaemia, insulin dose

adjustment, complications and driving whereas the worst scores (<50%) were in four questions related to dietary education. There was a trend for better score in student who attended both the medicine and diabetes clinical attachments [19.2(12-24)], either course [18.5(11-23)] than those who attended neither course [17.9(12-23)] in the total scores. Similar trends were seen in the general questions and insulin-specific questions. There were no differences between those who had a house-hold history of diabetes (18.9(12-24) and others 18.3(11-23). There was no impact of having a health care professional in the family (n=100) nor of reading Arabic health magazines (n=158). There were no differences between those with medical-type of future intentions and those with surgical intentions (18.6 vs. 18.3). CONCLUSIONS: Our final medical students have good working knowledge of medical-type diabetic problems to enable them to deliver care and educate their future patients. However, there were some deficits in the dietary aspects of care. Similar findings were shown in Libyan nurses previously reflecting the lack of interest or inadequate teaching. These findings highlight the need for a newer approach for raising awareness of dietetics amongst diabetic educators.

P10. AUDIT OF THE DIAGNOSTIC ACCURACY OF FINE NEEDLE ASPIRATION IN NODULAR THYROID DISEASE.

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BACKGROUND: Fine needle aspiration is the first line investigation in nodular thyroid disease. **OBJECTIVES:** We audited the diagnostic accuracy of fine needle aspiration in our hands. **PATIENTS AND METHODS:** Patients who had had nodular thyroid disease (including single thyroid nodules, multinodular goitres and thyroid cancer) and had had a pre-operative fine needle aspiration followed subsequently by thyroid surgery in the period from 1st January 1994 to 31 December 2004 were studied retrospectively. 100 patients were included of whom 90 were women and 10 were men. Their mean age was 43 years. 58 patients had a single thyroid nodule and 42 had multinodular goitres. **RESULTS:** A correlation between the cytology results of the fine needle aspiration cytological diagnosis and the histopathological report of the surgical thyroid tissue was made. The sensitivity, specificity, positive predictive value, negative predictive value and the accuracy index were found to be 52%, 85%, 80%, 42%, and 89% respectively. Comparing these results with previously published series from other centres, the sensitivity of fine needle aspiration in our hands is low. However, the specificity, positive predictive value, negative predictive value and the accuracy index were similar to other published series.

P11. CLINICAL CHARACTERISTICS, RISK FACTORS AND OUTCOME OF THYROID-ASSOCIATED OPHTHALMOPATHY IN THE LIBYAN POPULATION.

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AIMS: To study the natural course and factors that may influence prevalence, severity and outcome of thyroid-associated ophthalmopathy (TAO) in our patients' population. **PATIENTS AND METHODS:** A descriptive study was carried out on patients attending the endocrine out patient clinic in Tripoli Medical Centre, Tripoli, Libya. 155 patients were included. The duration of TAO stretched from 1 week to 18 years. Their age ranged 15–71 years. The smoking habits, family history of thyroid disease, other medical history were recorded. The thyroid functional status and presence of goitre were noted. TAO assessment were performed and TAO being scored as mild, moderate or severe. The therapy given and outcome were recorded. **RESULTS:** The severity of TAO was mild in 49%, moderate 44 % and severe in 7%. The overall female to male ratio was 2:1. There were more women with mild and moderate TAO whereas men had more severe TAO (2.4:1). Over two thirds were younger than 35 yrs. Men aged mostly between 25-44 years and women were more affected above 45 or below 25 years of age. Severe TAO tended to affect men between 35-44 years of age. Severe TAO was associated with positive family history of thyroid disease and majority were hyperthyroid at presentation (96%). Presence of goitre was not correlated with severe TAO. 28 patients were smokers (18%) and 127 were non smokers (82%). Smokers tended to have a more severe ocular involvement than non smokers with a ratio of (smoker to non-smokers 1:1) in severe ophthalmopathy subgroup. There was no relationship between smoking dose nor duration of and the TAO severity. Hyperthyroidism was treated mainly medically (76%). Radioiodine was used infrequently (1.3%) and only in patients with mild or moderate TAO. Thyroid surgery and combinations of the three modalities were employed in 23.9%. **CONCLUSION:** TAO is a multi factorial disorder in which genetic and environmental factors interact. It is potentially preventable by cessation of smoking. Although, in general, women are more frequently affected, severe forms seem to affect men more often. Early recognition and appropriate management to both hyperthyroidism and ophthalmopathy should limit their complications.

P12 TRANSIENT NEONATAL DIABETES MELLITUS: A CLINICAL AND GENETIC CASE STUDY.

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INTRODUCTION: Transient Neonatal Diabetes Mellitus (TNDM) is a rare condition with estimated incidence of 1 in 400,000 live births. **CASE STUDY:** A male,

born at 38 weeks, induced labour because of oligohydramnios, body weight 1.9 Kg < 3rd centile, on day 24 of life presented to A&E; H/o being unwell, off feeds, and lethargy. On examination: Pulse 120 bpm, Temp. 37.3, RR 35/ minute, Wt 1.95 Kg, CRT > 3. Investigations and Management: Blood Glucose 60mmols, urine was positive for glucose and ketones, Venous gas Ph 7.19, pco2 4.13, po2 7.31, Hco3 12.4 and BE -15.6, Na 136, K 5.7, U 10.8, Cr 104, Ca 3.38, Mg 1.22, lactate 2.7, HBA1c 9.7%, Insulin < 1.0 mU/L (3.0-17), TSH 2.9, ICA negative, Urine for AA and organic acids negative. Given 10 mls/ kg N saline bolus, Insulin IV, started with 0.05 u/Kg/hr initially, then 0.025 u/ kg/hr, IV Cefuroxime, Transferred to Guy's PICU, Spent 2 days on unit, NG feeds commenced at 5mls/kg/hr EBM, Insulatard: initially started on 1u, been gradually increased to 3u (am) +2.5u (pm). GENETIC ANALYSIS: Genetic studies confirmed parentally derived duplication of the 6Q24 region which is well known as a cause of the transient neonatal diabetes. PROGRESS: Remained well controlled on BD Insulatard, Insulin requirements fell gradually to the extent that he was off all treatment by 12 weeks of age. COMMENTS: TNDM presents in growth retarded neonates with hyperglycaemia, dehydration and failure to gain weight in the first six weeks of life in term infants. Patients usually require exogenous insulin therapy for a mean of three months. The condition spontaneously resolves before 18 months of age, however some patients develop type 2 diabetes later in life. In most cases, TNDM seems to be caused by double dose of a gene on chromosome 6q24 that is normally expressed only from the paternal copy as in our patient.

P13. MATURITY ONSET DIABETES OF THE YOUNG (MODY) IN CHILDREN

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INTRODUCTION: MODY is a rare form of autosomal dominant inheritance, which accounts for 15% of all non-type 1 diabetes in the United Kingdom. CASE STUDY: 14 years old male presented with being unwell, with tiredness and lethargy for 2 months. His mother checked BG 7.9, 8.2 (fasting), and 8.2 after tea. On examination, his weight was 64.4 kg, Ht 1.76 m, BMI 20.8 kg/m². Investigations revealed normal full blood count and thyroid functions. OGTT results: fasting glucose 6.0 mmol/l and 2hrs 8.9mmol/l, HBA1c was 6.1%, and serum C-peptide 1020 pmol/l (190-990). Genotype was G72R / N. Subsequent to his diagnosis, his mum and brothers had OGTT and blood tests for molecular genetic analysis performed. All had impaired OGTT. All had MODY, subtype Glucokinase. They were referred to Regional MODY Nurse for counselling and to the dietician for dietary advice.COMMENTS: MODY usually develops before the age of 25 years and presents with non ketotic-hyperglycaemia due to pancreatic B cell dysfunction². Patients with MODY are similar to those with type 2 diabetes in that they have mild hyperglycaemia and usually do not require insulin. In contrast to patients with type 2 diabetes however, MODY patients are neither obese nor insulin resistant. MODY should be considered in patients who

are not obese and with two-three generation family history of diabetes. MODY 2 is caused by a mutation of the glucokinase gene on chromosome 7p. This leads to the development of mild hyperglycaemia that develops in childhood and rarely requires specific treatment or results in complications, as illustrated by our patient and his family.

P14. THE EFFECTS OF GENDER, AGE, FAMILY HISTORY AND SMOKING ON THE OUTCOME OF MEDICAL TREATMENT FOR GRAVES' HYPERTHYROIDISM.

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BACKGROUND: Graves' Hyperthyroidism has an unpredictable response to medical therapy with Thionamide. Many factors have been postulated to predict the outcome but have not generally proved clinically useful to be widely adopted in clinical practice. AIMS: The study attempted to determine factors that may predict the outcome (relapse, lasting remission) after drug treatment. PATIENTS AND METHODS: Retrospectively we studied 60 patients with Graves' hyperthyroidism referred to the endocrine clinic at Jamahiriya Hospital between 2000 and 2004. All patients received anti-thyroid medications for 18 months. We classified the patients according to gender, age (above 30 years, below 30 years), family and smoking history. Criteria for diagnosis were symptoms and signs of hyperthyroidism, diffuse goitre, Graves' Ophthalmopathy and biochemical evidence including raised serum T3 and/or serum T4 with suppressed serum TSH concentrations. Remission was defined as patients who received antithyroid drugs for 18 months and remained euthyroid at least 6 months following discontinuation of Thionamide therapy. Failure was deemed in any patient with has clinical and biochemical relapse within 6 months of drug discontinuation or has persistent hyperthyroidism during continuation of medical therapy beyond 18 months. RESULTS: Their mean age was 34.5 years. 19 patients (31.7%) were men and 41 patients (68.3%) were women. Forty three patients (71.7%) were older than 30 years of age and 17 (28.3%) below 30 years of age. 37 patients (61.7%) had failed medical therapy of 12 were men representing 20%, 63.1% & 32.4% the whole group, total number of men and the total relapses respectively. 25 women failed medical therapy representing 41.7%, 61.0% and 67.6% of whole group, all females and the total relapses respectively. 10 cases with medical therapy failure (16.7%) were less than 30 years, while 27 (45%) of cases were above 30 years. 18 cases (30%) have positive family history of thyroid disease. 12 cases (66.6%) had medical therapy failure. None of the female patients were smoker, 6 men (31.6%) were smokers. 4 out of them (66.6%) had failure to medical therapy. CONCLUSIONS: Graves' hyperthyroidism is more common in female than male and patients above 30years of age. Relapse rate is more common in females and in patients over 30 years of age. Family history of thyroid disease and tobacco smoking are associated with a higher relapse rates.

P15. PREGNANCY OUTCOME IN SUBSEQUENT EPISODES OF GESTATIONAL DIABETES MELLITUS IN ALJALA HOSPITAL, TRIPOLI, LIBYA (2003-2005)

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AIMS: To evaluate individuals seen for with a subsequent gestational diabetes mellitus (GDM) and to assess the factors that influence their outcome. PATIENTS AND METHODS: We have studied prospectively a 62 out of 284 women who attended Aljala Hospital's Diabetic Clinic from 1/1/2003 to 31/12/2005. Those who presented with two episodes of GDM were reviewed for gestational age at delivery, mode of delivery, use of insulin, neonatal complications and relationship of management to outcome. RESULTS: out of cohort of 284 women with gestational diabetes, 62 women had a subsequent pregnancy. Their mean age of was 32 and 35 years in the first and subsequent pregnancies respectively. Gestational age at delivery was 37 weeks+4 days. 22 women delivered vaginally and 40 by caesarean section. 39 women did not require insulin in 1st pregnancy and they required it in the subsequent pregnancy. 19 women did not require insulin in either pregnancy. 4 women used insulin in both pregnancies. Women who changed from diet to insulin 47%, 37% and 16% required it during the 3rd trimester, 2nd trimester and 1st trimester respectively. Those who used insulin in both pregnancies required it 9 weeks earlier in the subsequent pregnancy. There were fewer neonatal complications seen in the subsequent pregnancy. 8 intrauterine foetal deaths occurred in the first cohort (all on diet only) but none in subsequent pregnancy (75% on insulin). 3 had congenital heart disease. Erb's palsy occurred in 3 vaginal deliveries of babies greater 5 kg in the first cohort and in one baby (of 4.8kg) delivered normally in the second pregnancy. Macrosomia (>4kg) was less prevalent in the subsequent pregnancy (43% versus 69%). Macrosomia was similar in those who used insulin in both pregnancies. But macrosomia tended to be less the earlier the conversion from diet to insulin. Birth weights were lower at the subsequent pregnancy (4.2kg versus 3.9kg). There was an increase the rate of caesarean section (n=40/62, 64%) and corresponding decrease in vaginal deliveries (n=22/62, 36%) during subsequent pregnancy. CONCLUSIONS: Our data suggest that subsequent pregnancies are associated with a more favourable outcome, possibly due to the more active management approach. Timely of insulin in subsequent pregnancies is recommended. Increased rate of caesarean section was observed but was associated with better neonatal outcome is in subsequent pregnancies.

P16. SERUM LACTATE IN METFORMIN-TREATED TYPE 2 DIABETIC PATIENTS

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Biguanides including metformin have been linked in the past to lactic acidosis ,a metabolic condition associated with high rate of mortality , however the incidence of lactic acidosis with metformin is very low. This study involved 30 patients with type 2 diabetes mellitus who received metformin in doses ranging from 500-1500 mg/day for a period of 1.3 ±0.92 years There were 30 healthy persons as controls who did not take metformin .Metformin caused mild increases in serum lactate, but not to the level of lactic acidosis . Serum lactate levels were not affected by age, sex, duration of treatment , duration of diabetes or doses of metformin

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