Association of British Clinical Diabetologists, Spring Meeting, Hilton Newcastle Gateshead, 6th & 7th May 2010.

POSTERS

POSTER 1

Comparison of medical assessment and self-reporting by drivers with insulin-treated diabetes for 15 years or more at licence renewal.

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Background: DVLA receives around 27 Police notifications per month of driving incidents associated with hypoglycaemia in drivers with diabetes mellitus. DVLA relies on self-declaration of a relevant medical condition in determining medical fitness for licensing Group 1 (car or motorcycle) drivers. Medical reports are requested in only a proportion of renewals where no medical problem (such as disabling hypoglycaemia) has been self-reported.

Aim: The aim of this study was to assess the sensitivity and accuracy of medical self-declaration in drivers who had insulin- treated diabetes of long duration.

Methods: This study was performed in 2007-08 on 2779 drivers who had insulin-treated diabetes for 15 years or more at the time of their licence renewal. The driver's personal declaration about their medical condition was compared with the assessment made independently by their doctor. Responses were analysed to assess risk of disabling hypoglycaemia, presence of impaired awareness of hypoglycaemia (IAH) and the accuracy and sensitivity of their self-declaration.

Results: Overall, 10.5% of drivers' self-declarations were inconsistent with their doctors' reporting of recorded episodes of disabling hypoglycaemia or IAH. The relationship to duration of insulin therapy was greatest in those treated with insulin for 20 years or more and in older drivers, aged over 49 years.

Conclusion: Around 1 in 10 drivers with insulin-treated diabetes of long duration are returning inaccurate self-reports. This degree of inconsistency with medical reports suggests a need to strengthen the licence renewal process for those treated with insulin for 15 years or more

POSTER 2 - WITHDRAWN FROM PUBLICATION

Comparison Of OGTT And HbA1c To Identify Hyperglycaemia In An Elderly Population.

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Background: The International Expert Committee recently recommended HbA1c should be used for diagnosis of diabetes. We compared the diagnosis of diabetes and intermediate hyperglycaemia in individuals using OGTT with those identified using HbA1c.

Methods: A screening study of individuals aged 60 years and older from a GP practice in Newcastle upon Tyne. Individuals attended fasting and underwent an OGGT. Standard WHO cut points were used for fasting and post challenge glucose; on HbA1c diabetes was > 6.5%, intermediate hyperglycaemia > 6.0%.
Results: 584 individuals (42.5%) participated. 252 (43%) were male. 26 (4.5%) had diabetes identified by OGTT; 18 (3.1%) identified by HbA1c. 7 individuals had diabetes on both (Kappa for agreement = 0.292). 149 (OGTT) and 103 (HbA1c) individuals had intermediate hyperglycaemia (Kappa = 0.187). Cardiovascular risk profile was compared between those with any degree of hyperglycaemia on OGTT (n=93) and HbA1c (n=58).Those with OGTT hyperglycaemia were more likely to be male and to have a better (more healthy) cardiovascular risk profile than those identified by HbA1c. An initial analysis of the data suggests that those who have hyperglycaemia defined on both measures have a worse risk profile.

Conclusions: Agreement between OGTT and HbA1c in identification of hyperglycaemia was low. Those identified by HbA1c had a worse cardiovascular risk profile.

POSTER 3
Milk Alkali Syndrome.
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A 40year-old polish lady presented with vomiting and carpopedal spasm. She had peptic ulceration from consuming 140units of ethanol per week, for which she took 4spoonfuls of "soda" daily for dyspepsia. Arterial blood identified a metabolic alkalosis with compensatory hypercapnia: pH 7.7, pCO2 8.4kPa, BE >+30mmol/L and bicarbonate 83mmol/L. Her venous blood identified hypochloraemia <50mmol/L, urea 8.9mmol/L, creatinine 267µmol/L, corrected Calcium 3.34mmol/L and Phosphate 2.93mmol/L. Her ECG reported a prolonged corrected QT interval of 610miliseconds.
Her spasm resolved with rehydration with NSaline. Sadly she self-discharged and ignored the advice to avoid "soda" in future. She regrettably suffered an out of hospital cardiac arrest and died.

Milk Alkali Syndrome (MAS) is the association of hypercalcaemia, renal impairment and metabolic alkalosis due to ingestion of calcium and absorbable bicarbonate. MAS was originally described after the administration of 'Sippy regimen' (calcium carbonate, sodium bicarbonate, magnesium oxide and bismuth subcarbonate) for the treatment of peptic ulcer disease in 1910.
With the advent of PPIs, MAS became uncommon, however there is evidence of a resurgence in incidence due to the use of calcium carbonate for prophylaxis of osteoporosis and its easy 'over the counter' availability. MAS has been reported as the third commonest cause of hypercalcaemia after primary hyperparathyroidism and malignancy(1). Her symptoms and signs were of hypocalcaemia despite her cCa3.34mmol/l. For every 0.1 increase in pH, ionized calcium decreases by ~0.05mmol/l and it therefore likely that the marked alkalaemia reduced her ionised calcium manifesting as carpopedal spasm and prolongation of the QT interval. Vomiting with consequent hypochloraemia and volume depletion are also likely to have exacerbated the metabolic alkalosis.
It is important that the resurgence of MAS is recognised and that care is taken with the prescription of calcium carbonate especially in at risk populations.

(1) Abreo K, Adlakha A, Kilpatrick S, Flanagan R, Webb R, Shakamuri S.
The milk-alkali syndrome. A reversible form of acute renal failure.
Arch Intern Med. 1993 Apr 26;153(8):1005-10.

POSTER 4
Pituitary Apoplexy presenting concomitantly with new onset Diabetes Mellitus.
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A 25year old Jamaican man, with no previous past medical history, presented to the A&E department with an acute onset severe headache, which had woken him from sleep. The headache was constant, apical and associated with an episode of vomiting. He also gave a 2month history of polyuria and

polydipsia, which he self-treated by drinking 'lucozade'. He noted some weight gain over the preceding month. He had a grandfather who developed T2DM at advanced age, but no other family history of diabetes or endocrine disorders.
On examination, he was afebrile and haemodynamically stable. He did not have any evidence of meningism and neurological examination including visual fields was normal. His BMI was 30 and he did not have clinical evidence of glucocorticoid or GH excess. Blood tests revealed a raised serum glucose of 27mmol/l and HbA1c 12%, confirming new diabetes mellitus. An isolated elevated ALT 124IU/L was felt to be secondary to NAFLD on liver ultrasound.
A CT scan of his head revealed a pituitary adenoma. This was followed up with an MRI pituitary, which demonstrated significant enlargement of the pituitary gland, extending into the suprasellar region, causing compression and mild superior displacement of the optic chiasm. The appearances suggested acute pituitary haemorrhage into a pre-existing pituitary macroadenoma. Further blood tests revealed: 9am cortisol 40nmol/l, TSH 0.24mIU/L(0.35-4.94), fT4 11.6pmol/l(9-19), fT3 3.6pmol/l(2.6-5.7), prolactin 95mIU/L(54-380), testosterone <0.7nmol/l(9-56), LH 0.5 IU/L, FSH 1.9IU/L, IGF-1 23nmol/l(14-47). Results of biochemistry and imaging were consistent with pituitary apoplexy, which as his visual fields were unimpaired, was managed conservatively. He was started on hydrocortisone replacement and insulin.
A literature search has revealed only one other similar presentation of pituitary apoplexy following new onset of likely type 2 diabetes in a young patient (1).

(1) Hemorrhagic pituitary apoplexy in an 18 year-old male presenting as non-ketotic hyperglycemic coma (NKHC).Kamboj MK, Zhou P, Molofsky WJ, Franklin B, Shah B, David R, Kohn B.
J Pediatr Endocrinol Metab. 2005 Jun;18(6):611-5.

POSTER 5

Diabetic neuropathic cachexia - a rare syndrome that needs to be considered to avoid lengthy and unnecessary investigations.

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A 52 year old south asian man with 3 years history of type 2 diabetes mellitus was admitted with 15 kg weight loss over the preceding 12 weeks. He was a non-smoker and teetotaller. His diabetes was well controlled on metformin 1.5 g per day with an HbA1c of 6.6%. He had no retinopathy or nephropathy. He complained of fire-like pain in his feet and numbness in the right hand and difficulty sleeping. Neurological examination showed wasting of bilateral quadriceps and small muscles of the hands, absence of all deep tendon reflexes, right ulnar neuropathy and left lateral popliteal nerve palsy. A working diagnosis of peripheral neuropathy secondary to paraneoplastic syndrome was initially made. Radiological imaging including CT thorax, abdomen, and pelvis was unremarkable. Laboratory tests for vitamin B12, vitamin B6 and folic acid levels, tumour markers, autoantibody screen, complements, protein electrophoresis were all normal. Thyroid function and short synacthen tests were also normal. Gastroscopy was normal except for evidence of gastritis. Nerve conduction studies and EMG confirmed right ulnar neuropathy and showed non-specific neuropathy in the lower limbs. A diagnosis of diabetic neuropathic cachexia was made. He was advised to have a "free diet" and was treated with insulin. His neuropathic pain was treated with pregabalin, amitriptyline and morphine. At six months follow up he had gained 9 kg in weight and his neuropathic pain was much improved. Diabetic neuropathic cachexia is a rare syndrome but it is important that this clinical syndrome is recognized and considered in patients with diabetes mellitus to avoid lengthy diagnostic work-ups and unnecessary investigations.

POSTER 6

Unmet diabetes needs for patients discharged within 24-hours after hospital admission

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Introduction and Aim

The impact of specialist diabetes reviews for hospitalised patients is increasingly acknowledged with in-patient diabetes care services being shown to improve patient care. However, little is known about benefit of such reviews for patients discharged early after hospital admissions. We aim to evaluate the nature of admissions, quality of discharge planning and unmet diabetes needs of patients discharged within 24hours of hospital admission.

Methods

Case notes of patients with diabetes discharged from emergency areas within 24-hours of admission were prospectively reviewed. The audit was conducted over a period of 4 consecutive weeks.

Results

Overall, 53 patients were identified. The underlying admission reasons were 19% diabetes related (including 6% newly diagnosed), 77% general medical and 4% requiring other specialist input. The glycaemic consequence from admission or its treatment was estimated to be adverse in 45% (deterioration 36% and hypoglycaemia risk 9%), of whom, 15% had appropriate treatment changes initiated before discharge and additional 7% arranged early follow up for their glycaemic needs. Thus 23% of all diabetes admissions had unmet needs as a consequence of hospital admission. We intend to report the impact of these needs on readmission rates.

Conclusion

Specialist teams ought to consider devising strategies to identify these patients routinely as a means to deliver a truly governed care for hospitalised patients.

Further analysis –
Readmissions (3m readmission numbers include those in 1m category)
8 in 8 patients within 1month post discharge – all 8 GIM index admission
17 in 13 patients within 3months post discharge – 11 GIM index admission and 2 DM index admission

Impact of adverse glucose control on readmissions
55% of all discharges estimated to have a neutral impact on glucose post admission – 7 readmission in 1m and 12 in 3m
45% with 'adverse glycemia' as a consequence of admission or its treatment – 1 readmission in 1m and 5 in 3m

Outreach contact and its impact
12 of 53 were seen by outreach anyway – readmissions 1 in 1m and 2 in 3m
25 not seen by outreach but could have been – 4 readm in 1m and 8 in 3m
16 could not have been seen by outreach (out of hours admission and discharge) – 3 readm in 1m and 7 in 3m

In the process of looking at readmitted patients' notes to identify reason for readmission (DM/GIM/Specialist) and whether Diabetes contributed to readmission

POSTER 7

Severe reactive hypoglycaemia after Nissen fundoplication in Ehlers – Danlos syndrome treated with Acarbose.

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Introduction:
Dumping syndrome and postprandial hypoglycaemia have been reported after Nissen fundoplication. The pathophysiologic mechanisms are poorly understood and a variety of therapies have been tried to control hypoglycaemia in these patients.

Case report:
A 40 year old lady who underwent Nisssen fundoplication for gastroesophageal reflux disease was investigated for recurrent symptomatic hypoglycaemic episodes. 72 hour fast was unremarkable. She underwent a five hour oral glucose tolerance test which had to be terminated earlier as she developed neuroglycopaenic symptoms. Impaired glucose tolerance was demonstrated with a sharp early rise in serum insulin which was resulting in late hypoglycaemia.

Table:

Sample (Min)	**Venous glucose mmol/L**	**C-Peptide ng/ml**	**Insulin pmol/l**
Basal	**3.9**	**1.4**	**14**
60	**13.4**	**>5**	**>190**
120	**13.1**	**>5**	**>190**
180	**3.7**	**>5**	**96**
210	**1.5**	**3.3**	**42**

Her reactive hypoglycaemia was related to late dumping syndrome. Treatment with acarbose markedly reduced the frequency of her hypoglycaemic episodes.

Discussion:
Dumping syndrome is a frequent complication of oesophageal, gastric or bariatric surgery. Rapid gastric emptying causes release of several gastrointestinal and pancreatic hormones and late postprandial hypoglycaemia. Persons with the dumping syndrome as a result of previous gastric surgery have been reported to have increased levels of glucagon-like peptide 1, possibly owing to the rapid presentation of nutrients (a stimulus for the secretion of this peptide) to the distal ileum, the site of L cells, which are the source of glucagon-like peptide 1. This results in an exaggerated postprandial insulin peak.
The first step in treating dumping syndrome is the introduction of dietary measures. Acarbose can be added to these measures for patients with hypoglycaemia, whereas several studies advocate guar gum or pectin to slow gastric emptying. Metformin can be useful. Diazoxide or somatostatin analogues may be required for patients with debilitating hypoglycaemia.

POSTER 8

Sugar and Wheat; a Trustwide Audit of Coeliac Screening in Type 1 Diabetics.

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Introduction: Coeliac disease, an autoimmune disorder, increases the risk of lymphoma and osteoporosis. Gluten free diet can reduce this risk. Identifying coeliac disease is clinically relevant. Incidence of coeliac disease in the general population is 1% rising to 1.6-2% in type 1 diabetics. Recent NICE guidelines recommend routine screening of type 1 diabetics by serological testing.

Methods: Type 1 diabetics attending annual review clinics from November 2008 to November 2009 identified. Laboratory electronic records used to check if and when serological testing performed.

Results: 256 patients studied; 120 females, 136 males; mean age 35. 106 patients (41%) had antiendomysial antibodies checked since diagnosis. Of these, 2 tested positive i.e. 1.83% of all patients screened. 32 patients (30%) had been screened within one year of diagnosis of diabetes. The mean time between diagnosis and testing was 2.7 years (range 1 -11 years).

Conclusion: In keeping with the reported incidence of coeliac disease, 1.8% of patients screened had positive serology. However, adherence to NICE is suboptimal; only 41% of patients were screened. 70% of patients had a time interval of greater than one year between diagnosis of diabetes and screening.
This audit demonstrates a need to improve screening. The proforma used in diabetic annual review clinic will be developed to include mandatory coeliac screening to meet NICE standards and improve care.

POSTER 9

Evidence for an "Epidemic" of Gestational Diabetes (1995-2008): Implications for service delivery.

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Aims: To document the trend in the number of women with Gestational Diabetes Mellitus (GDM) attending a combined diabetes antenatal clinic (ANC) in a multicultural city in the English Midlands.
Methods: The diabetes ANC database contains records of all pregnancies complicated by GDM managed in the combined diabetes ANC since 1994. The cases were subdivided by ethnicity as recorded on the Patient Administration System. Total delivery numbers were obtained from the maternity database (Euroking) from 2003.
Results: The number of GDM cases rose from 22 in 1995 to 123 in 2008. The rate of increase was constant until 2005, but has accelerated since. The ethnic mix has changed reflecting immigration to the inner city. From 1995-2001 the mean ethnic breakdown Caucasian: South Asian: Other was 33.3%: 64.6%: 2.1% compared with 30.6%: 59.2%: 10.2%. for 2002-2008.
Conclusion: This confirms our impression of an "epidemic" of GDM leading to increasing pressure on diabetes antenatal services which have had little additional investment over the 14 years covered by this data. Some of the increase in cases is attributable to the immigration of women from high prevalence areas for whom additional resources (interpreters) are required, but may also reflect a greater uptake of selective screening in the community. NICE has endorsed selective screening for GDM which may lead to further pressure on resources. There is an urgent need for commissioners to review capacity to manage the increasing burden of GDM and to invest in services accordingly.