Abstracts from the Association of British Clinical Diabetologists (ABCD) meetings

Abstracts from the Autumn 2007 meeting

An unusual cause of retroperitoneal haemorrhage

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Introduction: Adrenal glands are a common site for cancer metastases. However, massive adrenal haemorrhage secondary to adrenal metastasis is rare. We report an unusual case of spontaneous massive retroperitoneal haemorrhage from an adrenal gland metastasis.
Case report: A 74-year-old man was admitted with sudden onset of right upper quadrant abdominal pain. He had a 20 pack per year history of cigarette smoking. On examination he was distressed with blood pressure of 85/59mmHg and regular pulse of 90 beats /min. Abdominal examination revealed tenderness and guarding in the right hypochondrium and the right flank. Initial laboratory investigations revealed haemoglobin of 14.4g/dl and haematocrit of 41%. His haemoglobin and haematocrit subsequently dropped to 8.9g/dl and 25.9%, respectively. Computed tomography (CT) scan of the abdomen revealed bilateral adrenal masses (right 5.6cm and left 2.4cm) with right adrenal and extensive retroperitoneal haemorrhage. No signs and symptoms of hypoadrenalism developed and his response to short synacthen test was satisfactory. Phaeochromocytoma was ruled out by normal urinary catecholamine levels (6 samples). Subsequent CT of the chest showed an abnormal lesion in the right upper lobe and 4cm soft subcarinal mass, the histology of which showed squamous cell carcinoma of the lung.
Discussion: Clinically significant adrenal haemorrhage secondary to metastases from lung cancer is extremely rare. To the best of our knowledge, there are only 10 reports (15 patients) in the English literature of adrenal haemorrhage secondary to metastases of lung carcinoma. Of the 15 patients, only 7 patients were known to have lung cancer before their presentation with adrenal haemorrhage.
Conclusion: It is important to consider adrenal haemorrhage in the differential diagnoses of patients with lung cancer who present with abdominal pain and hypotension. Similarly, lung cancer should be ruled out in patients with spontaneous adrenal haemorrhage.

Hypoglycaemia secondary to leukaemoid reaction

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Introduction: Artifactual hypoglycaemia has been reported to occur in leukaemia, and also reported in polycythaemia vera, being caused by *in vitro* autoglycolysis due to an exaggerated consumption of glucose by white blood cells.[1] We report a case of recurrent hypoglycaemia found to be artifactual secondary to a leukaemoid reaction.
Case report: A 78-year-old lady with a poorly differentiated endometrial adenocarcinoma was referred to us with a history of recurrent fasting hypoglycaemic episodes. Her admission blood glucose (BG) was 1.8mmol/L. She underwent frequent fasting BG testing, and the results fell as low as 1.3mmol/L. On a follow up at the diabetes clinic she did not recall any of the classical symptoms of hypoglycaemia during her admission.

Her results throughout and following her hospital stay are as shown in the following Table.

Date	WCC x10^9/L	Fasting BG mmol/L
3/11/04	15.4	4.8
08/04/05	58.1	2.0
12/04/05	71.0	2.2
15/04/05	74.9	1.3
03/05/05	9.4	4.4

Fasting serum insulin was <3.0mu/L (0.0–16.0), BG 2.4mmol/L and C-peptide 0.08nmol/l (0.14–1.39). Liver chemistry results were normal. She was discharged home after exclusion of other causes of hypoglycaemia. It happens that her son has diabetes and she was therefore using his glucometer to monitor her sugar levels. During this time she took 15 readings and none was ever below 3.5mmol/L.

In her clinic review, her WCC had fallen to 9.4x10^9/L and her BG had normalised to 4.4mmol/L. In the absence of symptoms of hypoglycaemia and normalisation of BG after her WCC was back to normal, she was advised to discontinue glucose monitoring.
Conclusion: Unnecessary investigation can be avoided in patients with a leukaemoid reaction and low serum glucose levels due to artifactual change when true hypoglycaemia has been excluded. The circumstances that allow this type of artifactual hypoglycaemia may also produce factitious euglycaemia during evaluation of suspected diabetes mellitus.

Reference

1. Murphy S. Polycythemia vera. In *Hematology*. Williams WJ, Beutler E, Erslev AJ, *et al* (eds). New York, NY: McGraw-Hill, 1990; 193–202.

Severe hypertriglyceridaemia causing acute pancreatitis in pregnancy

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Case report: A 27-year-old Bangladeshi woman with a 2-year history of diet-controlled type 2 diabetes presented at 13 weeks' gestation into her 4th pregnancy weighing 57kg (BMI 25kg/m^2).Her first 2 pregnancies were uncomplicated; her 3rd was complicated by gestational diabetes requiring insulin.

At this initial assessment her results are as follows: HbA_{1c} 7.7%, total cholesterol (TC) 3.17(<5), TG 8.53 (0-2.2), HDL 0.77 (>1.0), LDL not calculated due to high TG.

She went on to require insulin almost immediately in this 4th pregnancy and had good control throughout.

At 32 weeks' gestation she developed sudden onset, severe epigastric pain requiring admission. The patient deteriorated rapidly becoming severely unwell. On investigation, her blood was visibly significantly lipaemic.

Laboratory results were not available for the first 24 hours making clinical judgment the only tool that could be employed in her management. However, through a process of serial dilution an approximate estimate of the serum lipid levels showed elevated serum cholesterol and TG levels (TC 31, TG 138). A spot urine amylase was measured showing elevated activity compatible with acute pancreatitis(7914IU). A CT scan of her abdomen demonstrated a necrotic head of pancreas, with no evidence of gallstones.

The potential maternal morbidity and mortality from an emergency caesarean section to such an unstable and compromised

mother was considered extremely significant. Sadly, fetal distress developed rapidly culminating in intra-uterine death.
Discussion: Acute pancreatitis in pregnancy is rare. It has a high mortality for both mother and fetus. In the course of her antenatal assessment, our patient showed a TG level of 8.53mmol/L and an HDL of 0.77mmol/L. In a non-pregnant population these values are pathognomonic of type III or IV hyperlipidaemia, but there are no formal, normal ranges for lipids in pregnancy and, indeed, many centres do not even measure lipids in pregnancy as the results are thought to be meaningless.

We postulate that in our patient inadequate diabetic control as well as the high oestrogen of pregnancy exacerbated her underlying dyslipidaemia, causing hypertriglyceridaemia and pancreatitis.

Comparing the demographics and pregnancy outcomes of our GDM population with our general antenatal population and assessing the relevance of the ACHOIS trial for these women

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Introduction: The ACHOIS trial (Australian Carbohydrate Intolerance Study in Pregnant Women) recently showed that treating gestational diabetes mellitus (GDM) significantly reduces serious perinatal morbidity. Our unit differs from ACHOIS in terms of diagnostic criteria for GDM and target capillary blood glucose (CBG) levels.
ACHOIS: 75gm oral glucose tolerance test (OGTT) with diagnostic values of fasting <7.8mmol/L, 2-hour 7.8–11.0mmol/L. CBG monitoring targets are <5.5mmol/L fasting/pre-prandial and <7mmol/L 2hrs post-prandial.
Our methods: 50gm oral glucose challenge test (OGCT) is performed (refer for 75gm OGTT if > 7.8mmol/L at 1hr). Diagnostic values at OGCT are: fasting >6mmol/L, 2hr >9mmol/L. CBG monitoring targets are <6mmol/L fasting/pre-prandial and <8mmol/L 2hr post-prandial.
Methods: A retrospective review of all women with GDM in our unit from 2000–2005 inclusive was performed. Demographic, treatment and outcome data were collected.
Results: During the study period, there were 474 women with GDM (2.6% incidence). Our GDM population was older, more obese, more insulin resistant and had an Asian and Afro-Caribbean representation almost 75% and 50%, respectively, greater than in the ACHOIS group. Furthermore, 53% of our GDM population required insulin compared with 20% in the ACHOIS intervention group despite lower target BMs. Our GDM group were more likely to need an induction of labour, have a caesarean section, suffer from shoulder dystocia and have a baby >4kg at birth.
Conclusion: The data presented highlight the higher risk in our women with GDM compared with the general population and the disparity between them and the women in the ACHOIS trial. Outcomes achieved by ACHOIS should only be extrapolated with caution to such multi-ethnic populations.

Should we see and treat all women with previous gestational diabetes (GDM) for GDM in their subsequent pregnancies without screening?

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Introduction: Recurrence rates of gestational diabetes mellitus (GDM) in a subsequent pregnancy range from 30–70%. Should we see and treat all women with previous GDM for GDM in their subsequent pregnancies without screening?
Aim: To address whether seeing women with previous GDM early in a subsequent pregnancy is likely to offer better diabetic control.
Methods: From 2000–2005 inclusive all women with a history of GDM were seen in the combined obstetric endocrine clinic early in their next pregnancy without further screening. A retrospective comparison was made between women treated for previous GDM with those newly diagnosed.
Results: From 2000–2005, 419 case notes were reviewed. 123 women (29%) had previous GDM and 296 (71%) had not. Women with previous GDM were older and heavier than the newly diagnosed group (NDG). There was no difference in ethnicity between the two groups. Women with previous GDM were more likely to have a first HbA_{1c} ≥7% ($p<0.005$). They were also more likely to need insulin (66.7% *vs* 47%; $p<0.00000$). 58.3% of women with previous GDM required insulin before 28 weeks' gestation (when routine GDM screening usually occurs). This is highlighted by a significantly earlier gestation at which insulin was started in the previous GDM group (median 25.1 weeks *vs* median 33.4 weeks; $p<0.0000$) compared to the NDG.
Conclusion: We recommend seeing and treating all women with previous GDM as though they are GDM in their subsequent pregnancies without further screening. We have shown that treatment in subsequent pregnancies may be necessary prior to the routine 28-week screening which would result in an unacceptable delay in treatment.

Metabolic acidosis is not always an emergency

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A 42-year-old lady was referred to the medical admissions unit from surgical pre-assessment with metabolic acidosis and a past medical history of spina bifida and type 2 diabetes.

Arterial blood gas was requested due to previous problems with anaesthesia showing a pH of 7.21. Though she was asymptomatic, the anaesthetist was concerned about the possibility of diabetic ketoacidosis.

Repeat arterial blood gas was similar with a very low bicarbonate of 17 and base excess was -15. Urinalysis was negative including ketones. Routine bloods showed good glycaemic control with an HbA_{1c} of 8.4%, mild renal impairment, creatinine 115µmol/L, anaemia Hb 11.5g/dL and raised white cell count $12.6x10^9$/L which appeared to be longstanding.

When analysing the blood gas report, gas exchange seemed to be unaffected and it appeared that there was an isolated reduction of bicarbonate as lactate was 0.6mmol/L

Reviewing medical notes we realised that the reason for her low bicarbonate could be due to her having a urinary diversion and that this was the likely cause of her metabolic acidosis. Looking at her blood results in more detail also showed a high serum chloride level of 108mmol/L with a normal anion gap of 19mmol/L. We then discharged the patient on oral sodium bicarbonate therapy.

In conclusion, although this episode of metabolic acidosis did not have any immediate medical consequences for the patient, it is still necessary to be diagnosed and managed.

A national survey of the current state of screening services for diabetic retinopathy in England, Wales and Scotland

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Aim: The aim of this survey was to ascertain the progress made in the implementation of retinal screening services and explore any barriers or difficulties faced by the programmes during implementation.
Methods: To achieve this, we commissioned a web-based survey (opinion taker) between June and November 2006. The questionnaire contained 73 questions which included demography, infra-

structure for retinal screening service, and the process of retinal photography in detail, population coverage, adherence to National Screening Committee (NSC) guidance and resource allocation etc. We also explored if robust mechanisms were in place for dealing with 'screen positive' patients. The methodology for the survey allows responses to be automatically loaded onto a data file that was analysed by using SPSS Statistical package. 68 of 115 screening units, contacted in England, responded (59%).

Results: The survey analysis has shown up the following key messages. 1. Of those programmes which replied to the survey, a majority have an established service for retinal screening and 73% of programmes felt they have made significant progress since the start of implementation. The degree of progress made varied among screening programmes. 83% of the programmes provide a call and recall service through a central register. 2. The majority of programmes (74%) follow the NSC guidance in implementation and delivery of retinal screening services. 3. A significant number of programmes (66%) have highlighted that resource allocation is inadequate to sustain the provision of a high-quality retinal screening service and some highlighted the lack of infrastructure and IT support. 4. A large proportion of programmes (63%) have purchased the NSC recommended retinopathy management software, while others continue to use local or other available programmes to run the service. 5. The most important and challenging issue confronting units was the provision of annual quality assurance (QA) reporting and the inability of the various software systems to comply and deliver to the expected detail. 6. Many units were working effectively with ophthalmology units but the processing of screen positive patients (fast track referral, diabetes assessment and feedback to the retinal screening units) remains a cause for concern. Providing robust QA and feedback from ophthalmology units remains a big challenge at present.

Conclusions: This survey has shown a significant progress in the provision of retinal screening services in England. There are still a number of challenges faced by the programmes to comply with expected national standards. This is unlikely to be resolved unless urgent provisions are made for electronic messaging between the data collection in ophthalmology units as well as retinopathy management software. To improve and sustain high-quality service, national guidance, adequate resource allocation and local leadership remains crucial.

Need for in-patient diabetes nurse specialist

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Background: With the increasing prevalence and awareness of diabetes, there is a growing emphasis on the key role the multidisciplinary team plays in the care of every patient with this chronic condition. Diabetes nurse specialists (DNSs) are an integral part of this team both in the hospital and the community. This review assesses how the absence of specialist nurse care impacts not only on the time to discharge but also the quality of care delivery.

Objectives: To evaluate the need for a ward based DNS at Kettering General Hospital (KGH). This project will consider whether the absence of a DNS in this role leads to the delayed discharge or compromised care of diabetic patients.

Methods: A search was conducted through the hospital database to obtain the notes of the last 150 patients who were admitted to KGH for diabetes without complications or diabetic ketoacidosis.

Of these, 36 sets of patient notes were found to be accessible through Kettering medical records department and the admission notes were assessed. The number of notes finally evaluated was dictated by the availability of notes on the KGH site.

The notes were analysed by a single reviewer for continuity using a standardised proforma. The patients were then subdivided into 5 different groups according to possible DNS input, including newly diagnosed diabetes, change to medications, advice requested, erratic BMs and no proven delay.

Main results: The analysis of 36 records showed an average delay of 1.44 days per patient based on the date stable for discharge when all non-diabetic problems had been resolved. It can be hypothesised, however, that this delay is even longer as only admissions in which a delay was proven, according to the criteria, could be documented. In 61% of all medical records assessed a DNS was requested by one or more of the doctors involved, despite the fact that there is no DNS currently working in KGH. Clearly, a request in this way would indicate a need for the input of a DNS. In 72% of cases in which a DNS was requested in medical records, a definite delayed discharge can be demonstrated.

Conclusions: The absence of a DNS does lead to the delayed discharge of patients from KGH. Although the effect on quality of care cannot be assessed officially by this audit, it is clear from analysis of the admission records that without the input of a DNS, diabetic patients are receiving sub-optimal care. This is reflected in the re-admissions seen.

Highlights from the ABCD Autumn 2007 meeting are scheduled for publication in the March 2008 issue of *Practical Diabetes International*