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Abstract

The following are summaries of student led research projects.

Epidemiology and Outcome in Lateral end Clavical Fractures.

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The clavicle is the most commonly fractured bone in the human body. Fractures of the clavicle can be divided into medial, middle and lateral clavicle fractures. Conservative treatment is widely accepted as the treatment of choice for both medial and meddle clavicle fractures. However, lateral end fractures have previously been shown to have a high incidence of non-union and re-fracture if treated conservatively and a number of studies have recommended operative treatment, open reduction and internal fixation for this type of fracture.

Our results have shown that males were 2-3 times more likely to sustain a lateral end clavicle fracture and the average age at fracture was 42 years for males as opposed to 47 for females. The main causes of fracture were simple falls, road traffic accidents, falls from heights and sporting injuries. The results also showed that in contrast to the earlier recommendations those patients who were treated conservatively had earlier union, less local complications and were able to return to work and activities of daily living earlier than those who underwent operative treatment. In addition those patients who were treated conservatively had better shoulder function, less pain and were more satisfied with the outcome. This leads us to conclude that lateral end clavicle fractures should be treated conservatively.

Study into Oxygen Therapy and Doctors' Knowledge of it.

Adam J. Paul. *Western General Hospital, Edinburgh.*

We looked at the use and knowledge of oxygen therapy. This involved postal questionnaires sent to SHOs and PRHOs from which we received 120 replies, interviewing 45 SHOs and PRHOs at the WGH and visiting all patients on oxygen on 5 occasions over 5 weeks. In total 72 patients were seen. With a response rate of 52.1% only 7.3% of doctors were able to answer 6 basic questions correctly; only 20% of those working at the WGH knew when oxygen should be humidified. 25.5% of interviewees write up oxygen on the Kardex with only 1 in 45 specifying a mask type. However, 94.7% of patients seen were wearing their masks, but only

19.4% had an oxygen prescription written up and 30.6% had had no ABG or pulse oximetry carried out since they had been started on oxygen. Given these findings we felt that, coupled with 26.7% of interviewees who have had no formal oxygen therapy teaching, there is a need for improvement in oxygen prescription and documentation procedures and in basic oxygen therapy knowledge of junior staff.

Diabetes Prevalence and In-Hospital Mortality in Patients with acute Myocardial Infarction.

James East. *Departments of Cardiology and Diabetes, Royal Infirmary of Edinburgh.*

Acute myocardial Infarction (AMI) is a principal cause of death in patients with diabetes. To Quantify both the prevalence of known diabetes and previous undiagnosed diabetes (random plasma glucose > 11.1 mmol l^{-1}) in patients presenting with AMI and in-hospital mortality we retrospectively examined the records of all 409 patients admitted to the RIE CCU during the calendar year 1997 with AMI. 79 (19%) fulfilled the criteria for diabetes with 29 (37%) being previously undiagnosed (PUD). Mean (+/- SD) admission plasma glucose was 14.7 mmol l^{-1}. The in-hospital mortality rate was 14% for non-diabetics and 25% for diabetic patients, (p=0.026), odds ratio 2.04 (95% C.I. 1.13-3.70). The excess mortality was accounted for by the death rate in those with PUD, 41% vs 16% known diabetics, (p=0.026) vs 14% non-diabetics, (p<0.001). Those with PUD were older (71 +/- 9 vs 66 +/- 10 years, p=0.02), more likely to be female (79 vs 47%, p=0.021), and had a higher admission plasma glucose (15.9 +/- 3.4 vs 13.8 +/- 5.0 mmol l^{-1}, p=0.041) than in those with known diabetes. This suggests that patients presenting with AMI without previously diagnosed diabetes and an admission blood glucose level > 11.1mmol l^{-1}, indicating either stress hyperglycaemia and/or undiagnosed diabetes, represents a high risk group. This group of patients may particularly benefit from active glycaemic management.

Urinary Analysis of Luteal Function in Infetile Couples.

Simon Pridgeon. *The Department of Obstetrics and Gynaecology, Royal Infirmary of Edinburgh.*

Introduction. About half of couples who fail to conceive within a year seek infertility advice. Routine investigations fail to determine a cause in a quarter of cases. The measurement of hormonal metabolites in urine is used widely as part

of ovulation assessment, however, only limited information is extracted from these results. Here we are seeking to find the best ways of utilising this data.

Objectives. To establish guidelines for the interpretation of urine tracking results and to investigate whether this test can be used to identify luteal phase defects. We also aim to evaluate its role in the monitoring of ovulation induction.

Methods. A case note survey of infertile couples in whom urinary tracking has been used either to investigate ovulation or to monitor ovulation induction with anti-oestrogen therapy was carried out and a patient questionnaire was used to examine the methods of urine collection.

Results. 528 sets of urinary tracking results were examined from 400 different women. 165 of the cycles were used to monitor ovulation induction. The patients fell into 6 diagnostic categories: male factor infertility (7.3%) ovulatory infertility (28%), tubal infertility (8%), unexplained infertility (19.5%), mixed cause of infertility (16.7%) and unclassified
(20.5%). Menstrual cycle length was shown to describe variations in ovulatory patterns. A normal range was established for the urinary pregnendiol/creatinine ratio to identify ovulation (1.16 +/- 0.5). An unexplained increase in urinary oestrone was detected in avovulatory women. There was no difference in maximal pregnendiol measurements to identify luteal phase defects in women with unexplained infertility (pmax: 1.15 +/- 0.50 in the unexplained group compared with 1.17 +/- 0.51 for all other diagnoses). There was a significant difference in the maximal pregnendiol values between successful ovulation induction and induction that failed to produce an ovulatory event (1.35 +/- 0.71 compared with 0.36 +/- 0.21).

Conclusion. Urinary tracking is a highly practical and user friendly investigation. It is valuable in monitoring women with long menstrual cycles or those being treated with anti-oestrogen induction. We have found no benefit for the use of urine tracking in women with normal menstrual cycles nor have we found any evidence that it can be used to identify women with unexplained infertility who would benefit from clomiphene therapy. The establishment of clear guidelines for interpretation of urinary data may optimise its usage and cut the costs of infertility services.

Cumulative Ultimate Incidence of Diabetes and Impaired Glucose Tolerance Over 6 Years of Follow-up in Patients with Gestational Diabetes in Edinburgh.

P.J. Huggan,*Department of Diabetes, RIE.*

Objectives. To determine the cumulative incidence of abnormal glucose metabolism in women with previous history of GDM.
To identify factors in the index pregnancy that are associated with an increased risk in later life of abnormal glucose metabolism

Methods. Retrospective study of defined cohort.

Subjects. 119 women diagnosed with GDM at the Simpson Memorial Maternity Pavilion (SMMP) between July 1991 and March 1993, reassessed in 1998.

Main Outcome Measures:

Glucose status as defined by diagnosed diabetes, impaired glucose tolerance or normality during the follow-up period. Patients whose glucose status was unknown at follow-up were invited for measurement of fasting plasma glucose

Results. Twelve women had diagnosed diabetes (10%) and 4 had impaired glucose tolerance (IGT; 4%). Thirty women (25%) had definite normal glucose tolerance and four women (4%) could not be classified. Sixty-nine women (61%) were either lost to follow-up or failed to attend for follow-up screening. The prevalence of confirmed abnormal glucose tolerance in the 50 studied women was 32%.Women with post-partum diabetes had a higher BMI in pregnancy and both fasting and 2 hour blood glucose levels were higher during OGTT in pregnancy.

Conclusions. The 5 year cumulative incidence of diabetes after GDM is at least 20% in this cohort. The high rate of patients lost to follow-up or failing to attend for screening makes an accurate level impossible to determine. Those developing post-partum diabetes were heavier and had a more severe disorder of glucose metabolism during pregnancy.

Trends in HIV Testing- A Comparative Analysis Between Homosexual and Heterosexual Men.

K. Dhaliwal, Department of Genito-urinary Medicine, RIE.

Introduction. The development of an enzyme-linked immunosorbent assay for screening blood for antibodies to HIV was a major milestone in the history of AIDS prevention and treatment. With the recent upsurge of public awareness, testing has become more of a health issue for many people. At present, few studies have been conducted to analyse the reasons for testing and to see if the increase in uptake can be attributed to any specific cause. In 1996 alone, the G.U.M. department conducted 2217 HIV antibody tests (same day testing and routine testing).

Aims. 1) to study the reasons why patients undertake HIV testing and in particular to analyse if there are any differences between homosexual men (HO) and Heterosexual (HX) men in the **reasons for testing**.

2) To assess if there has been an increase over the years in the numbers of test carried out ***proactively*** (patients not at past risk of infection, but confirming their negative status to allow a future event to proceed safely, e.g. discarding condoms).

Methods. Database compiled for homosexuals and heterosexuals (matched for age, sex and dates of attendance). Six year quarters from 1994 to 1997 were chosen. Each test episode was assigned a 'reason for testing' category.-past risk, ongoing risk, new relationship, proactive, illness, indeterminate reason.. Results were analysed for quarter studied and age groups.

Results. 438 HXs and 427 HOs compared. Past risk- HO= 53% & HX= 52%. 15% HX proactive as opposed to 6% HO (χ^2=18.3, p<0.001). No positive HIV tests in HXs vs 17 in HOs for the periods studied. Risk status; low risk (HO=41%, HX= 82%). Medium risk-(HO=3%, HX= 7%). High risk (HO= 56%, HX= 7%).

Conclusions. **Past risk** and **indeterminate reason** account for the majority of tests taken by both population groups.

The majority of heterosexual males being tested had a 'low risk' of being infected, this was in contrast to homosexual men, the majority of whom had a 'high risk' of being infected (see graphs).

The results of the study do not support the impression held by the clinicians that there had been an increase in the proportion of tests carried out proactively. Further extension of the years analysed may show a trend for increasing tests being taken proactively.