ASSA - SAGES 2004 Congress

Cape Town International Convention Centre, 6 - 10 August 2004

This issue of the *SAMJ* features scientific abstracts pertaining to original research presented at the Congress, but does not include the many invited lectures.

24th Biennial Congress of the Association of Surgeons of South Africa (ASSA)

42nd Annual Congress of the of the South African Gastroenterology Society (SAGES)

in association with:

South African Society of Endoscopic Surgeons (SASES)

Vascular Society of Southern Africa (VASSA)

Trauma Society of South Africa (TSSA)

South African Gastrointestinal Nurses Society (SAGINS)

ASSA FREE PAPERS

Sunday 8 August, 08h00 - 10h00
Venue: Rooms 2.61 - 2.66
Chair: N Naidoo/R Barry

VIDEO-ASSISTED THORACOSCOPIC (VATS) EVACUATION OF POSTTRAUMATIC HAEMOTHORACES

PH Navsaria and AJ Nicol
Trauma Unit, Groote Schuur Hospital and University of Cape Town

Background This report reviews a recent trauma unit experience with thoracoscopic evacuation of posttraumatic haemathoraces.
Patients and Methods The records of all trauma patients undergoing surgical intervention for retained haemothoraces over the thirty month period, January 2001 to June 2003 was reviewed.
Results The study included forty-six patients. All sustained penetrating injuries, 40 with stab and six with gunshot wounds. Twenty-two, seventeen, and seven patients each had one, two and three attempts at drainage with tube thoracostomy, respectively. In 37 (80%) patients, retained infected/uninfected pleural fluid was successfully evacuated thoracoscopically. VATS failed in 9 (20%) patients and the procedure was converted to open thoracotomy. Dense adhesions was present in all nine these patients. The mean time interval between injury and thoracoscopy and thoracotomy, was 13.3 (range 3-46) and 14.5 (range 11-24) days, respectively (P=0.139). The mean volume of pleural fluid evacuated thoracoscopically was 650 mLs. The failure of VATS evacuation correlated with the empyema rate (P=0.0013). The median post-operative stay was 5 days for both groups.
Conclusion VATS is an accurate, safe and reliable operative therapy for retained posttraumatic pleural collections, even in patients presenting later than the conventionally accepted 3-5 day window period from the time of injury.

DNA RELEASED FROM REJECTING ORGANS IS AN INDICATOR OF THE DEGREE OF GRAFTCELLULAR DAMAGE

B.Interewicz, W.L. Olszewski, M.Maksymowicz, M.Sikora, J.Stanisawska
Dept. Dept. of Surgical Research and Transplantology, Medical Research Center, Pol. Acad. Sci., Warsaw, Dept. of Surgery, Medunsa Polokwane Campus, Polokwane

Warm and cold ischemia and rejection bring about disintegration of transplant endothelial and parenchymatous cells. The problem remains open how to quantitatively estimate the degree of damage. A reproducible method would enable optimising the preservation procedures and adjust the immunosuppressive protocol to the lowest necessary dosages. Donor-specific genetic material released from the disintegrating cells seems to be the most reliable diagnostic factor. Here we present our experience with semiquantitative measuring donor DNA in recipient blood and tissues after syngeneic and rejecting allogeneic heart transplant.
Material and Methods In autologous group LEW males and females were used. The BN (RT1n) and LEW (RT1l) male rat hearts

were transplanted into LEW (RT1l) female rats. Seven, 30 days (without immunosupression) and 30 days after CsA and Tacrolimus treatment rec ipient blood, bone marrow, skin, lymph node, spleen, liver, and heart were harvested. Genomic DNA was isolated, the PCR reactions were performed with rat Y-Sry specific primers. Products were electrophoresed, silver stained and analyzed by OneDscan software.
Results The presence of donor Y-Sry fragment was documented in all investigated allogeneic and syngeneic recipient tissues after each type of transplantation. The mean numbers of donor DNA copies (expressed in optical density units, OD) were estimated in all tissues. The mean values were always higher early after syngeneic transplantation, reaching on day 7 in lymph nodes mean OD values of 7. The presence of Sry-fragment was hardly detectable as long as the heart allograft rejection was controlled by cyclosporin A administration (day 30). Cessation of immunosuppressive therapy resulted in appearance of donor Y-Sry fragment in all recipient tissues. The OD values of donor Sry-fragment were inversely correlated with the percentages of donor-phenotype (OX27+) cells in recipient tissues. Conclusions. The initial high wash-out of donor DNA from the graft was caused by ischemia damage, whereas that after cessation of CsA by rejection. Detection of Sry-DNA fragment in male-to-female tx or microsatelite fragment analysis method in female-to-female is reproducible.

URETERIC COMPLICATIONS FOLLOWING RENAL TRANSPLANTATION

S Edu, M Hommes, C Apostolou, MD Pascoe, AR Pontin, **D Kahn**
Transplant Unit, Groote Schuur Hospital & University of Cape Town

Renal transplantation is performed as a routine procedure in most major centres. The surgical technique is well established. Despite this, ureteric complications still occur and result in significant morbidity. The aim of this study was to audit the ureteric complications after renal transplantation at Groote Schuur Hospital. The records of all patients treated surgically for a ureteric complication following renal transplantation between 1994 and 2003 were retrospectively reviewed. The ureteric leaks were treated with either refashioning of the anastomosis or re-implantation, and the ureteric obstructions were managed by uretero-ureterostomy. There were 17 patients included in the study, 8 males and 9 females, with a mean age of 39 years (range 12-76) There were 16 cadaver donor transplants and one liver donor transplant. The 8 ureteric leaks presented after a median of 7 days and the 9 ureteric obstructions after a median of 31 months. In 9 patients a uretero-ureterostomy was performed. The remaining patients had re-implantation of the ureter into the bladder (n=3), refashioning of anastomosis (n=3), and a pelvic-vesicostomy (n=2). Sixteen patients still had a fuctioning graft after a mean follow-up period of 3.4 years.
In conclusion, ureteric complications after renal transplantation are relatively uncommon and can be successfully managed surgically.

DISSEMINATION OF DNA FROM DONOR ORGANS IN RECIPIENT TISSUES DEPENDS ON DOSAGE OF CYCLOSPORIN A AND FK 506

M.Sikora, B. Interewicz, **W.L. Olszewski**, A.Dominiak, A.Wluka, M.Maksymowicz
Dept. of Surg. Res. & Transpl., Medical Research Center, Polish Academy of Sciences, Warsaw, Poland

The destruction of the rejecting graft involves the cellular elements. Cellular debris contains fragments of nuclei with their genetic material. They are disseminated in the recipient. Even with immunosuppressive therapy a portion of graft cells undergo disintegration and their DNA is distributed throughout recipient organs. The question arouse as to whether cyclosporine A (CsA) and FK506 may have a damaging effect on graft cells and be responsible for a portion of DNA detected in recipient tissues.
Aim To localise donor DNA in recipient tissues 30 days after syngeneic BMC, heart and skin transplantation without immunosuppression and 30 days after syngeneic and allogeneic transplantation in recipients treated with low and high doses of cyclosporin A (CsA) and FK506.
Methods Animals: male LEW (RT1Al)and BN (RT1An) rats served as donors and Female LEW (RT1Al) as recipients. Free skin flaps (SK), heart (H), bone marrow cells (BMC).Thirty days later blood (B), bone marrow (BM), skin (SK), lymph node (LN), spleen (SPL), liver (L), and heart (H) were harvested. Genomic DNA was isolated, its quality was checked electrophoretically, after spectrophotometrical quantification, 5mg of DNA, 25 pmol of each rat Y sex determining region (Y-Sry)
Specific primers 5- GAGAGAGGCACAAGTTGGC, 5-AATACCAGTGGATGTGATGCGG and 12ml of reaction mixture HotStarTaq Master Mix Kit (final volume 25 ml) were taken for PCR reaction.
Results Thirty days after syngeneic grafting without immunosupression donor DNA was found in all examined tissues. The release of DNA was found decreased after 30 days treatment with CsA and was localised mainly in the spleen. Thirty days after grafting of allogeneic SK, H and BMC with CsA and FK506 immunosuppression, the level of detected donor DNA reached higher values in all examined tissues after low dose treatment. Comparing results after CsA and FK506 treatment of allogeneic grafts, the OD values were slighty higher after admininstration of FK506. The high OD DNA values in low dose treated animals suggest inefficient immunosuppression. Estimation of donor DNA may be a useful factor in evaluation of the efficacy of immunosuppressive therapy.

BACTERIAL ANTIGENS IN ATHEROSCLEROTIC ARTERIES OF LOWER LIMBS

B.Interewicz[1], **W.L.Olszewski**[1,2] , M.Sikora[1], Z. Machowski,[3]
[1]Dept. of Surgical Research & Transplantology, Medical Research Center, Polish Academy of Sciences, [2] Central Clinical Hospital, Ministry of Internal Affaires, Warsaw, Poland, [3] Dept. of Surgery, Medunsa Polokwane Campus, Polokwane

By far the most common cause of coronary artery disease is atherosclerosis. Chlamydia pneumoniae (CP) has been reported to be a pathogenic agent in the mechanism leading to atherosclerosis. The majority of available data is focused mainly on coronary artery disease whereas distribution of CP in different areas, associated with atherosclerotic disorders, has not been completely clarified. Serological studies suggest a relationship between atherosclerosis and Cytomegalovirus (CMV) or Helicobacter pylori (HP).
Aim To investigate the presence of microbial DNA with the use of broad-range PCR, targeting conserved region (16sRNA) of the gene encoding for ribosomal RNA and specific primers to detect CP and HP in atherosclerotic plaques of popliteal and posterior tibial arteries.
Methods DNA was extracted from specimens of 21 patients with atherosclerotic changes of lower limbs. PCR amplification was performed with primers for gene fragment coding bacterial 16s RNA, major outer membrane protein (ompA) of CP and urease gene of HP DNA with positive and negative controls. Products were separated by PAGE electrophoresis and silver stained.
Results The presence of microbial DNA(16sRNA) was documented in 47% of examined samples, CP could be demonstrated in 52% of tested patients while HP was not detected. In 23% of cases bacterial DNA was present but CP was not found, and inversely in 23% samples CP was present whereas bacterial DNA was not detected.
Conclusions Our results suggest association between CP and atherosclerosis and highlight the need for search for bacterial DNA together with CP in vascular areas with atherosclerotic changes.

RADIO-GUIDED OCCULT LESION LOCALIZATION IN BREAST CANCER

B.Kavin , D.Stupart , H.Ball*, A Fataar#, D.M.Dent, E. Panieri.
Departments of Surgery, Radiology*, and Nuclear Medicine#, University of Cape Town and Groote Schuur Hospital, Observatory, 7925.

Background Radioguided Occult Lesion Localization (ROLL) is a new technique for locating and excising clinically occult breast lesions, which relies on intralesional injection of radiolabelled Tc-99 colloid and intraoperative use of a handheld gamma probe to guide the excision.
Aim The aim of the study was to clinically validate the use of this technique in the Breast and Endocrine Surgery Unit at Groote Schuur Hospital. The primary end point of the study was the accuracy of this technique in removing the suspicious lesion.
Patients and Methods Data was prospectively collected on 18 patients with impalpable lesions detected mammographically or by ultrasound, from January 2003 to June 2004. In all patients the lesion was injected with a radiolabelled marker (9 tin colloid, 9 nanocolloid) 1 to 27 hours preoperatively (mean 21hours 21mins), and removed with the aid of a hand held gamma probe. We documented preoperative clinical and radiological data, operative details with specific reference to operative time, accuracy of localization, and histopathological confirmation of diagnosis.
Results Accurate removal of the suspicious lesion was documented in all 18 patients by means of intraoperative radiological confirmation with specimen mammography and later review of pathological data. No patients required re-operation to confirm diagnosis.
Conclusion We have found ROLL to be an easily reproducible and accurate method of localizing impalpable breast lesions, which has logistical and practical advantages over hookwire localization.

ORTHOTOPIC LIVER TRANSPLANTATION AT GROOTE SCHUUR HOSPITAL AND RED CROSS CHILDREN'S HOSPITAL, CAPE TOWN.

CWN Spearman,AJW Millar,M McCulloch,L Michell,P Gordon,T Lopez, JThomas, T Butt, L Goddard, P Sinclair, H Rode, **D Kahn**
Red Cross War Memorial Children's Hospital and Groote Schuur Hospital, Cape Town,South Africa

Orthotopic liver transplantation is the treatment of choice for selected patients with endstage liver disease. In South Africa, liver transplantation is still considered a last resort resulting in patients being referred late in course of their disease. Since 1987, 55 adults(18-56yrs)and 70 children(6mths-13yrs)have undergone 131 transplants. Indications for liver transplantation in the adults have included postnecrotic cirrhosis(14), primary sclerosing cholangitis(18)alcoholic cirrhosis(7) metabolic(6),fulminant hepatic failure(4),redo transplant(3),tumour(2),other (4). Indications in children:Biliary atresia(38),metabolic (9),fulminant hepatic failure(10),Autoimmune hepatitis(5),redo transplant(3),other(8). 6 Combined liver/kidney transplants have been performed. The main medical complications have been infections (TB,CMV infection, de novo hepatitis B)and post-transplant lymphoproliferative disease. Cumulative 1 and 5 year survival figures are 74% and 62% respectively for adults and 79% and 67% for children. However with the introduction of prophylactic IVI gancyclovir and the exclusion of HBV IgG core Ab positive donors, the projected 5 year paediatric survival is> 80% The transplant programme in Cape Town remains active but is limited by a shortage of donors (40% potential donors HB IgG core Ab positive) and ongoing referral of patients at a preterminal stage.

HEPATIC RESECTION FOR INTRAHEPATIC STONES

W. Ddamulira, JEJ Krige, PC Bornman, S Cullis,*SJ Beningfield
Departments of Surgery and *Radiology, University of Cape Town and Groote Schuur Hospital, South Africa.

Recalcitrant primary intrahepatic bile duct stones (PIBS) result in repeated episodes of biliary sepsis, strictures, cholangitic abscesses, liver atrophy and ultimately biliary cirrhosis.
Aim This study evaluated the efficacy of liver resection in the treatment of complicated intrahepatic stones.
Patients and Methods All patients who had a liver resection for PIBS from 1989 to 2003 were evaluated. Prospective data included stone distribution, complications, operation details, histology of resected specimen and follow up.
Results The 21 patients (10 men) had a mean age of 38 years (range 19-58). 17 patients had left lobe involvement alone, while 4 had bilateral involvement. 15 had left lobe liver atrophy, 13 had associated strictures and 9 had associated cholangitic abscesses. 19 patients had a left lateral segmentectomy, 1 a left hepatic lobectomy and 1 a right hepatic lobectomy. 14 patients had had in addition a hepaticojejunostomy with an access loop (n=9), hepaticojejunostomy without an access loop (n=3) and hepaticoduodenostomy (n=2). 7 patients had liver resection only of whom two had a previous hepaticojejunostomy. Mean operating time was 4 hrs 07 min (range 145-630min). Mean blood loss was 700mls (range 700-4000mls). 2 patients required intra-operative transfusion. There were no procedure related deaths. Postoperative complications included subphrenic abscess (1), bile leak (1), enterocutaneous fistula (1) and an incisional hernia. Mean follow-up was 61 months. 19 patients had complete stone clearance while 2 required further percutaneous radiological extraction of recurrent stones via an access loop.
Conclusion Liver resection offers effective treatment in patients with complicated PIBS. The addition of an access loop provides a mechanism of dealing with residual contralateral intrahepatic ductal strictures and recurrent stones.

PACKING FOR CONTROL OF HAEMORRHAGE IN TRAUMATIC LIVER INJURIES.

AJ Nicol, M Hommes, R Primrose, PH Navsaria and JEJ Krige, Trauma Unit, Groote Schuur Hospital and University of Cape Town.

Background Liver packing for complex liver injuries has been associated with an increased risk of abdominal sepsis and bile leaks. There is little consensus on the optimum time of liver pack removal and whether the duration of packing increases the incidence of these complications.
Patients and Methods Retrospective review from January 1996 until 2004 of all patients requiring liver packing in a level 1-trauma centre.
Results 96 patients (18%) out of a total of 537 required liver packing for liver injuries identified at laparotomy. Mean age was 30 (14-68) with a mean RTS of 6.415 (SD±1.677). The mechanism of injury was penetrating trauma in 75 (73%) and blunt trauma in 21 (27%). The mean total duration of packing was 2.44 days (0.5 – 6 days). There was no association between the total duration of packing and the development of liver-related complications (p=0.1550) or septic complications (p=0.2840). Early removal of packs (< 24 hours) was associated with a higher rate of rebleeding than the removal of packs at 48 hours (p=0.0056).
Conclusion The total duration of liver packing does not result in an increase in septic complications or bile leaks. Early relook (<24 hours) is associated with rebleeding and does not lead to early removal of packs.

MANAGEMENT OF BILE DUCT INJURIES FOLLOWING PENETRATING LIVER TRAUMA

S Burmeister, JEJ Krige, PC Bornmann, S Cullis, AJ Nicol, P Navsaria
Surgical Gastroenterology and Trauma units, Department of

Surgery, University of Cape Town and Groote Schuur Hospital, Cape Town, South Africa

Aims To determine the optimal management and outcome of persistant biliary fistulae and strictures following penetrating liver trauma in a tertiary referral trauma centre.
Patients and Methods All patients admitted to Groote Schuur hospital with penetrating liver trauma who subsequently developed biliary complications (persistent bile leak or stricture >1 week post injury). Patient data were reviewed retrospectively utilising the liver trauma data base and endoscopy records. Bile leaks or strictures which did not resolve after endoscopic stenting underwent surgical repair.
Results Between 1984-2001, 29 patients presented with persistent bile leaks (n=24), strictures(n=1) or a combination (n=4). 15 patients had postoperative bile drainage while 12 patients had radiological and 3 subsequent surgical drainage. Imaging of the biliary system was by ERCP (n=25) or PTC (n=6).The site of the leak was identified in 26 patients. Leaks were classified according to anatomic location on cholangiography: Extrahepatic (common bile duct, common hepatic duct or left and right hepatic ducts; n=6) or Intrahepatic (central or peripheral segmental ducts; n=20).

Site of lesion	Perc drained	Endoscopic sphincterotomy or stent	Surgery	Spontaneous resolution
Intrahep-central (n=6)	4	6	0	0
Intrahep-peripheral (n=14)	7	11	1	1
Extrahep- prox L/R duct (n=1)	0	0	1	0
Extrahep- hepatic duct (n=2)	0	0	1	1
Extrahep- CBD (n=4)	1	1	3	0
Unknown (n=4)	0	1	0	3

Conclusions Intrahepatic central and peripheral bile leaks are likely to resolve with endoscopic stenting. Extrahepatic proximal injuries invariably require surgical repair.

Sunday 8 August, 11h10 - 12h50
Venue: Roof Terrace
Chair: R du Toit/T Madiba

DIAGNOSTIC LAPAROSCOPY AND DIVERTING SIGMOID LOOP COLOSTOMY IN THE MANAGEMENT OF CIVILIAN EXTRAPERITONEAL RECTAL GUNSHOT INJURIES

PH Navsaria, J M Shaw, AJ Nicol, D. Kahn,
Trauma Unit, Groote Schuur Hospital and The University of Cape Town

Aim This prospective study reviews the management of isolated civilian extraperitoneal rectal gunshot injuries using a protocol of diagnostic laparoscopy (DL) and abdominal wall trephine diverting loop colostomy, without laparotomy, distal rectal washout (DRW) and presacral drainage (PSD).
Patients and Methods Patients admitted to the trauma unit at Groote Schuur Hospital between January 2000 and December 2002 with a rectal injury was confirmed by digital rectal examination and proctosigmoidoscopy. Missile peritoneal violation was excluded by DL. Normal DL examination was followed by formation of a diverting sigmoid loop colostomy through an abdominal wall trephine, without a laparotomy. No DRW or PSD was performed.
Results Of the 104 patients admitted with rectal injuries, 20 (19.2%) qualified for inclusion into the study. Eighteen exhibited a transpelvic trajectory. DL was normal and a trephine diverting loop sigmoid colostomy performed in 20 patients. No pelvic sepsis occurred. Two patients (10%) developed rectocutaneous fistulae. Nineteen stomas have since been closed. There were no deaths.
Conclusion Low-velocity gunshot injuries isolated to the extraperitoneal rectum can be managed with minimum morbidity and no mortality by laparoscopic exclusion of intraperitoneal missile penetration, followed by an abdominal wall trephine diverting sigmoid loop colostomy without laparotomy, DRW and PSD.

HOW MANY HOURS DO SURGICAL REGISTRARS WORK?

S. Vadia, D. Kahn
Department Of Surgery, University Of Cape Town

The number of hours worked by Junior Doctors in Europe and America have been significantly reduced. In Europe doctors are restricted to less than 40 hours per week and in America to less than 70-80 hours a week. These restrictions have had a major impact on the training of Junior Doctors.
Aim of this study was to determinethe number of hours worked by surgical registrars at Groote Schuur Hospital(GSH). Thirty - three registrars on the surgical rotation at GSH/UCT were asked to indicate the number of hours spent on duty in hospital, the number of hours spent on call at home, and the number of hours off duty. The 8 registrars in the Surgical firms at GSH spent an average of 68 hours in the hospital and an average of 37 hours per week on call at home. The registrars at the peripheral hospitals spent an average of 70 hours per week on duty of which an average of 9 hours was spent at home. The registrars with a fixed on/off duty roster(as those in Trauma Unit) worked an average of 65 hours per week. Thus in summary, surgical registrars, especially those in the surgical firms are required to work unacceptably long hours.

SELECTIVE NON-OPERATIVE MANAGEMENT OF LIVER GUNSHOT INJURIES

JAO Omoshoro-Jones, AJ Nicol, PH Navsaria, R Zellweger and D Kahn
Groote Schuur Hospital Trauma Unit, Dept of Surgery, University of Cape Town

Background The concept of non-operative management of liver gunshot injuries is not widely accepted in contrast to the practice in blunt trauma. This study was conducted to evaluate non-operative management in gunshots to the liver.
Method A prospective study over a 36-month period of all patients presenting with documented liver gunshot injuries (LGSIs), who were haemodynamically stable with no peritonism underwent a strict protocol of NOM according to validated criteria, after a thorough clinical and contrast-enhanced computed tomography (CT) scans evaluations.
Outcome measures were protocol success or failure rates, morbidity and mortality rates, and hospital stay.
Results 33 patients (mean age 25, range 13-50) were enrolled. The majority (14/33, 42%) had grade III injuries, whilst major (grade IV/V) and minor (grade I/II) injuries occurred in 33% (11/33) and 24% (8/33) of patients respectively. Concomitant injuries were mostly related to the right hemi-thorax (75/111). The overall success rate of non-operative management was 94% (31/33). Two patients required laparotomy, one for delayed haemorrhage from a renal injury, and one patient who died from necrotising fasciitis, which was unrelated to the liver injury. Morbidity and mortality rates were 36% (12/33) and 3% (1/33) respectively. A thoracobiliary fistula was successfully managed endoscopically. Higher complication rates with major liver injuries approached, but did not reach significance (p = 0.06). Conclusion: In centres with the appropriate facilities, the non-surgical management of

appropriately selected patients with LGSI is highly feasible, safe and effective, irrespective of the severity of the liver trauma.

HUMAN KERATINOCYTE STEM CELLS SURVIVE FOR MONTHS IN SODIUM CHLORIDE AND CAN BE SUCCESSFULLY TRANSPLANTED

WL. Olszewski, M. Moscicka, D. Zolich.
Dept. of Surgical Research & Transplantology, Medical Research Center, Polish Academy of Sciences, Central Clinical Hospital, Ministry of Internal Affaires,
Warsaw, Poland, Dept. of Surgery, Medunsa Polokwane Campus, Polokwane

Clinical allogeneic transplantation (tx) of epidermis and skin is refractory to immunosuppressive drugs. Autogenous epidermis or skin are available only in small amounts and should either be cultured or transplanted immediately. We have been searching for methods of long-term preservation of skin for tx. Since epidermis and dermis are resistant to ischemia and dehydration, we tried to use dehydration method for preservation of skin fragments for tx. Aim. The study was carried out to prove that skin fragments dehydrated in powdered sodium chloride can retain their vital properties and can be successfully tx. Methods. Human skin fragments (30) from lower limbs were harvested during elective vascular surgery. They were placed in heat-dried fine sodium chloride powder (1part skin 9 parts of NaCl), sealed in aluminium foil and kept at room temperature for 3 to 6 months. Before tx , they were desalinated and fragments 1x1 cm were transplanted to the dorsum of scid mice (60). After 3 weeks, the grafts were harvested for histochemical evaluation.
Results Skin grafts were taken by the recipient. Following initial desquamation of upper layers of epidermis, graft surface looked smooth, pinky and displayed bleeding upon piercing with injection needle. On histology, keratinocytes looked normal forming 6 to 9 cell layers. They were all HLA class I positive in contradistinction to mouse cells. Staining with mAbs against human p63(stem cells), CD29 (transient cells), PCNA (proliferating cell nuclear antigen) revealed normal pictures of basal layer cells. In mice receiving BrdU injection (incorporates into DNA of dividing cells) 24 h before harvesting a number of nuclei of basal cells were stained. Control staining against mouse MHC I and II antigens, macrophages and granulocytes did not reveal presence of mouse antigens in tx human epidermis. In dermis, fibrobl asts looked normal and there were some large HLA DR+ cells in the intercapillary spaces. Conclusions. Human epidermal stem cells survive in a dehydrated state for months and upon transplantation give rise to keratinocyte progenies.

COSMETIC RESULTS OF IMMEDIATE BREAST RECONSTRUCTION AFTER SKIN-SPARING MASTECTOMY: A THREE TO FIVE YEAR FOLLOW-UP

E.M.Muller; E. Panieri; D Hudson*, D.M. Dent
Division of General Surgery and Plastic Surgery*, Groote Schuur Hospital and University of Cape Town, Observatory, 7925, Cape Town, South Africa

Aim The aim of this study was to determine the cosmetic outcome of immediate reconstruction at three to five years after surgery by means of: eliciting the patients' own impression of cosmetic outcome; qualitative evaluation by a review panel of standardized patient photographs; quantitative evaluation by means of standardized breast measurements.
Patients and Methods Retrospective evaluation of patients who had skin-sparing mastectomy and immediate reconstruction between 1998 and 2002 and who were available for follow-up three to five years after surgery, using: patient photographs and objective assessment of cosmetic outcome according to fixed parameters and patient interviews and self assessments of cosmetic outcome.
Results 14 patients underwent TRAM flap, 2 Latissimus Dorsi and 6 Prosthetic reconstruction. 63% of patients would recommend immediate reconstruction, a further 27% would recommend it with some reservations, 10% would not recommend this procedure. 8 patients (36%) were very satisfied, 6 patients (27%) moderately satisfied, 5 patients (23%) slightly satisfied and 3 patients (14%) not satisfied at all with their cosmetic result. Objective scoring (out of 10) indicated that 6 patients (27%) scored less than 4, 8 patients (36%) between 4 and 6, 7 patients (32%) between 6 and 8 and 1 patient (5%) more than 8.
Conclusion Most women who would recommend the procedure, had a TRAM flap reconstruction. Patients who had TRAM flap reconstruction were more satisfied with their results than patients who had a prosthesis. Objective scoring was generally higher in the group who had TRAM flap reconstruction than in the group who had prosthetic reconstruction.

CLINICAL VALIDATION OF SENTINEL LYMPH NODE BIOPSY IN BREAST CARCINOMA.

H Bardwell, E Panieri, DM Dent.
Departments of General Surgery, Groote Schuur Hospital and University of Cape Town, Observatory 7925, Cape Town, South Africa

Background Sentinel lymph node biopsy (SLNB) in patients with breast cancer provides accurate staging of the lymph nodal status while avoiding unnecessary axillary dissection. We performed a validation study of the first 36 patients, which showed the technique to be accurate for routine clinical use (overall predictive value- 97%, negative predictive value 95%).
Aim The objective of this study is to further validate SLNB technique by clinical follow up of patients who did not have an axillary clearance after a negative SLNB.
Method Fifty-one patients underwent SLNB at Groote Schuur Hospital from August 2001 until March 2003. Twenty-one had positive SLN and were excluded from this study. Thirty patients had a negative SLNB and did not undergo axillary node clearance. We performed a clinical review of these to identify how many had developed regional lymph node metastases at follow up.
Results Data was available on 29 patients, with a mean follow up of 19.5 months (range 15-26 months). No cases of regional lymph node recurrence were noted.
Conclusion The results further validate the accuracy of the SLNB technique in our institution.

VALIDATION OF SENTINEL LYMPH NODE BIOPSY IN PRIVATE PRACTICE.

J Edge, A Nizami*, J Whittaker#.
Surgery-Chris Barnard Memorial Hospital, *Nuclear Medicine-Kingsbury Hospital, #Pathology, Cape Town, 8000

Objectives Sentinel lymph node biopsy(SLN) is an established alternative to routine axillary lymphadenectomy in patients with early breast carcinoma, allowing selective lymph node clearance in patients with a positive SLN. Validation of the technique is necessary before accepting it as a routine procedure, yet this poses significant financial difficulties in private practice. The aim of this study was to validate and assess the accuracy of SLN biopsy in predicting the axillary lymph node status of patients with breast carcinoma managed in private practice.
Methods We studied 40 patients with clinically node negative breast carcinoma. All patients underwent preoperative lymphoscintigraphy following an intratumoral injection of 99mTc-nanocolloid. Sentinel lymph nodes were identified using blue dye and a hand held gamma-probe. The first 5 patients underwent a complete axillary clearance. The subsequent 35 patients underwent frozen section ± imprint cytology of the SLN, followed by axillary sampling if the SLN was negative for tumour, or complete axillary

clearance if the SLN was positive. The pathological status of the SLN was compared to that of the status of the axillary sampling (sentinel node negative) or clearance (sentinel positive).
Results sentinel nodes were identified in34 patients (localization rate 85%). In 4 cases a sentinel node could not be identified, and in 2 cases the node was parasternal. The SLN accurately reflected the axillary lymph node status in 34 of 34 patients (overall predictive value 100%). In 6 cases the SLN contained tumour: in 4 of these other nodes were involved, and in 2 cases the SLN was the only positive node. The SLN did not contain metastases in 28 patients, and none of these had metastases in the axillary clearance/ sampling lymph nodes (negative predictive value 100%). Twenty-eight patients avoided an axillary clearance.
Conclusion There is a learning curve in performing SLN biopsy. We feel that axillary biopsy sampling with sentinel node biopsy is a reasonable alternative to axillary clearance, offering comparable information, while limiting morbidity. Biopsy of SLN has a high accuracy in reflecting the presence or absence of axillary node metastases in patients with breast carcinoma, validating the technique in our hands. We now rely on the sentinel node and do not perform an axillary sampling in node negative patients.

MANAGEMENT OF HEAD INJURY IN A GENERAL SURGICAL UNIT WITH AN OFF-SITE NEUROSURGICAL SERVICE
BMW Zulu, T.E. Madiba, TV Mulaudzi, DJJ Muckart
Department of Surgery, University of KwaZulu-Natal, Durban.

Introduction In order to cope with bed shortages in the only neurosurgical unit (NSU) in KwaZulu-Natal, it has become necessary to manage head-injured patients in the general surgical unit (GSU) at the referral hospitals in consultation with the NSU via Telemetry.
Aim To assess the outcome of patients with head injuries managed in a GSU of King Edward VIII Hospital in Durban in consultation with regional NSU formerly situated at Wentworth Hospital (WWH), Durban.
Patients and Methods Prospective audit carried out over a 6-month period (January-June 2001). All patients with head injuries severe enough to warrant admission to hospital were included. Demographic data, findings on admission as well as the patients' in-hospital course were documented.
Results A total of 236 patients were included in the study, of whom 196 were male (M:F ratio=6:1) and the mean age was 30.66 + 10.57. There were 215 blunt injuries and 21 penetrating injuries (bush-knife = 4, firearms =5, stabs = 3 and other = 9). Only 30 patients had severe head injury (GCS < 8). Of the 98 patients who required brain CT as per our local guidelines, radiological lesions were found in 66 patients, namely contusions (28), subdural haematomas (12), diffuse axonal injury (6), increased intracranial pressure (6), extradural haematomas (5), fractures to cranial bones (5) and findings not related to trauma (4).
All the scans were faxed to the NSU at WWH and individual cases were discussed with the neurosurgeons. Twenty nine were accepted by the NSU for neurosurgical evaluation of whom one died on arrival at WWH. All the surviving 28 patients had various neurosurgical procedures. The median interval between admission at the referral hospital and the commencement of the operation at WWH was 8 hours (ranged 3 – 18).
Twenty four (10%) patients died. The mortality rate for severe head injuries was 67% compared to 4% among those with mild to moderate injury ($p<0.0001$). Four of the patients who underwent surgery died, of whom 3 had a GCS > 8. The long term sequelae were epilepsy (3), monoparesis (2), hemiparesis (1), disorientation (3), confusion (2), RDS (1), facial nerve palsy (1), inability to communicate (3).
Conclusion Head trauma is associated with high morbidity and mortality. Outcome is determined primarily by GCS on presentation. Non-surgical treatment of traumatic brain injury at the referral hospital by the GSU is safe. Delay before surgery did not seem to affect outcome.

LONG-TERM OUTCOME OF LAPAROSCOPIC ANTIREFLUX SURGERY: INTERIM REPORT ON AN INDEPENDENT AUDIT
AO Laosebikan, SR Thomson
Department Of Surgery, Nelson R Mandela School Of Medicine, University Of Kwazulu Natal, Durban.

Introduction A variety of factors affect the selection and outcome of long-term treatment options for GORD which are life long acid suppression or antireflux surgery. Centres of excellence report very good results with surgery. The results in private practices are largely unreported. An independent audit of laparoscopic antireflux surgery performed by a group of private surgeons is presented.
Materials and methods Consent was obtained from the group practice and approval from the university ethics committee. 572 cases have so far been reviewed. Data about symptoms and drug use before and after surgery was gathered by means of questionnaire and review of hospital records of patients who had the procedure between 1994 and 2002. Each patient served as own control. Converted procedures were excluded. 269 replies were received and 196 responses are analysed.
Results The average age was 55,3 years with an equal gender ratio. Heartburn was present in 88,3% and preoperative dysphagia in 50% of responders. Endoscopy negative reflux was present in 40%, although half of these had prior PPI therapy. PH/manometric studies were done in 13,7% of cases. A combination of acid suppressants had been used in 74,0% of responders and 65,8% alluded to PPI use. Symptomatic relief in this group was complete or incomplete in 20,3% and 46,9% respectively. A Nissens fundoplication was the most frequent procedure. The "re-do procedure" rate was 8,8%. 71,8% of responders became heartburn free. Severe postoperative symptoms experienced include excessive passage of flatus (39,1%), bloating (15,5%), dysphagia (8,4%) and burping with difficulty (7,5%). 12,9% of responders continued PPI use for symptom relief. Using the visual analogue scale, 70,9% patients were completely satisfied.
Conclusion Laparoscopic antireflux surgery is an effective but not perfect therapeutic option for the treatment of gastroesophageal reflux disease and patients must be made aware of the possibility continued demand for medical therapy and the troublesome side effects of this procedure.

Monday 9 August, 143h0 - 16h00
Venue: Rooms 2.61 - 2.66
Chair: E Steyn/T Hardcastle

PREDICTORS OF OUTCOME IN LIVER INJURIES. A 6-YEAR EXPERIENCE FROM A SINGLE UNIT
WL Sikhondze, NM Naidoo, TE Madiba
Department of Surgery, University of KwaZulu-Natal, and King Edward VIII Hospital, Durban, South Africa.

Introduction Severe bleeding associated with liver injury makes it one of the major causes of mortality in patients with abdominal trauma.
Aim This study was undertaken to document outcome in patients with liver trauma and to assess factors that may affect such outcome.
Patients and Methods This is a prospective audit of patients with liver injury treated in one surgical ward at King Edward VIII Hospital over a 6 year period (from 1998 to 2003). All patients underwent laparotomy and data collected included demographic data, intra-operative findings, operative management and outcome.
Results Out of a total of 430 patients with abdominal trauma 93 patients (22%) were found to have liver injuries, of whom only 4 were female. Their mean age was 27.78 + 10.32 years. Injuries were due to firearms (63), stabs (23) and blunt trauma (7). Delay before surgery was < 12 hours in 77 patients, > 12 hours in 9 patients and

was unknown in 7 patients. Sixteen patients (17%) presented with shock (systolic BP < 90 mm Hg). grade 1 injury were found in 25, grade 2 in 31, grade 3 in 24 , grade 4 in 9 and grade 5 in 4 patients. Management of liver injuries was conservative (46), suture repair (34), liver packing (11) and segmental resection (2). A drain was left in situ in 36 patients. Thirty three patients required ICU management (35%) and the mean ICU stay was 7.18 + 6.06 days. nineteen patients (20%) needed a re-laparotomy for various reasons. Complication rate was 37%. 19 patients died, giving a mortality rate of 20% (24% for firearms, 43% for blunt trauma and 4% for stabs). Of the 16 patients who presented in shock, 8 died (50%). None of the 37 patients with Injury Severity Score (ISS) of < 9 died whereas all the 19 deaths occurred in patients with ISS > 9. Mortality and morbidity rates were 18% and 35 % where delay was < 12 hours respectively and 11% and 44% where delay was > 12 hours respectively. Hospital stay was 11.84 + 10.57 days.
Conclusions Liver injuries occurred in 22% oaf abdominal injuries. Shock was associated with a higher mortality, as were firearm and blunt injuries. A higher ISS was associated with a high mortality. Delay before surgery did not influence outcome.

THE CLINICAL APPLICATION OF A NEW TRAUMA DIGITAL X-RAY DEVICE; THE STATSCAN
AJ Nicol, PH Navsaria and S Beningfield.
Trauma Unit, Groote Schuur Hospital and University of Cape Town.

Background The Statscan is a new digital radiography system designed for trauma radiology and developed as a collaborative effort between the University of Cape Town and Lodox systems. The aim of this study was to assess the clinical application of the Statscan in a high volume trauma centre.
Patients and Methods A prospectively collected database of all patients scanned from 1999. All patients were underwent both conventional radiology and a Statscan.
Results Over 337 trauma patients have been scanned since 1999. Over the last 4 months 31 patients in the resuscitation room received a Statscan. The mean time taken for the acquisition of conventional primary survey X-rays was 23 minutes (range 10-60) and 9 minutes (range 3-30) for the Statscan. The Statscan was useful in locating in situ bullets, identifying fractures that were overlooked clinically, for performing emergency department angiography and single shot IVP's.
Conclusion The Statscan is a major advance in trauma radiology with respect to the rapid acquisition of images and the ability to generate a whole body X-ray. Situated in the resuscitation room it can detect foreign bodies and allow for the performance of emergency department angiography and intravenous pyelograms.

BRACHIAL ARTERY INJURIES
Swart N, Zellweger R, Hess F, Navsaria PH, Nicol AJ.
Dept of Surgery: Trauma Unit, Groote Schuur Hospital & University Of Cape Town

Aim Analyses of 124 surgically managed brachial artery injuries.
Methods The medical records were analyzed for demographic data, mechanism of injury, associated injuries, treatment and outcome.
Results There were 113 males and 11 females with a mean age of 28.7 years. Majority of the injuries were caused by stab (57.3%) and gunshot wounds (29%), respectively. Primary anastomosis was possible in 47 patients, while 73 patients required vein interposition grafting. Lower arm Fasciotomy was performed in 15 (12.1%) patients. Associated injuries included peripheral nerve lesions in 77 (62.1%), non-repaired brachial vein injuries in 17 (13.7%), and concomitant humerus fracture in 12 (9.7%) patients. Thirty-nine (31.5%) patients had remote injuries.
Conclusion The primary repair of penetrating brachial artery injuries was possible in approximately one third of patients. Approximately two thirds of the patients had associated nerve lesions. Critical limb ischaemia rarely occurred.

ABDOMINAL INFERIOR VENA CAVA INJURIES
PJ de Bruyn, AJ Nicol, PH Navsaria
Trauma Unit, Groote Schuur Hospital and the University of Cape Town

Aim To review and determine prognostic factors in patients with inferior vena cava (IVC) injuries.
Methods Retrospective record review of all patients with an IVC injury seen between January 1999 and December 2003. Demographic data, mechanism of injury, surgical management, associated injuries, complications and mortality was determined. Those with clinical manifestation of peritonitis and/or shock underwent emergent laparotomy.
Results Forty-eight patients with IVC injuries were identified: one stab and 45 gunshot wounds and two with blunt trauma. There were 42 males. Mean age of 27.3 years. Thirty-three patients presented in shock. Mean blood transfusion requirement was 9 (R0-22) units. IVC injury was suprarenal in six, infrarenal in 41and retrohepatic in one. Treatment involved ligation in 30 and primary repair in 18 patients. The mean weighted RTS, ISS and PATI scores were 6.278, 23.7 and 42.33, respectively. There were 15 deaths with a mortality 31.9 (15/47) %. Traditional prognostic indicators compared survivors (33) with non-survivors (15). Statistics presented.
Conclusion Comparing survivors vs. non-survivors: Shock, massive blood transfusion and high ISS were significantly associated with mortality. The level of injury, ligation or repair, and no. of associated injuries had no influence on outcome. The presence of a consultant surgeon statistically improves outcome.

POPLITEAL ARTERY INJURIES
MJV Hewat, C Apostolou, NG Naidoo, AJ Nicol, PH Navsaria
Trauma Unit, Groote Schuur Hospital and the University of Cape Town

Aim Popliteal artery injuries are associated with a high amputation rate. This study was undertaken to identify the factors associated with amputation in patients with popliteal artery trauma.
Methods Retrospective record review of all patients with a popliteal artery injury operated on in the Trauma Unit at Groote Schuur Hospital between January 1999 and December 2002.
Results: Sixty-one patients with popliteal artery injuries were identified. The mean age was 28 years. Penetrating and blunt trauma accounted for 40 (38 gunshot and 2 stab wounds) and 21 (11 motor vehicle accidents and 10 falls) injuries, respectively. The anatomical level of arterial injury was above the knee in 26, at the knee in 22, and below the knee in 13 cases. Associated injuries included fractures in 23, knee dislocation in 14 and popliteal vein injury in 20 patients. Limb viability at surgery was assessed as viable in 15, threatened in 39 and non-viable in 7. Treatment of the arterial injury involved reversed vein grafting in 34, primary anastomosis in 14, prosthetic graft insertion in 6, and primary amputation in 7. Ten patients required delayed amputation, resulting in an overall amputation rate of 27,9%. A delay between injury and surgery of more than 7 hours was associated with an increased amputation rate (p=0.05). Concomitant venous injury, fracture, and knee dislocation were not associated with increased amputation rates.
Conclusion Popliteal artery trauma has a high amputation rate, with delay to surgery the most significant contributor.

HYPOALBUMINEMIA IN BRAIN-DEAD ORGAN DONORS
SB Ibirogba, A Mall, CW Spearman, E Shepherd, D Kahn
Department of Surgery, University of Cape Town and MRC Liver Centre

Introduction Hypoalbuminemia is documented to be associated with severe head-injury and is attributed to hypermetabolism/hypercatabolism seen in these patients. Brain injured patients are also known to have depressed albumin level due to negative nitrogen balance. However, no known study on the albumin status in brain-deal organ donors has been documented.
Aim To determine the albumin status in brain-dead organ donors seen at the Transplant Unit of Groote Schuur Hospital.
Method Thirty-sevel brain-dead organ donors seen at GSH Transplant Unit between January 2001 and December 2002, were retrospectively assessed for age distribution, biochemical parameters (Serum electrolytes, urea, creatinine, liver function test (AST, GGT, LDH, total protein and albumin), and hemograms (Hemoglobin and platelets), time of injury, time certified brain dead, and biodata (weight and height). The results were then statistically analysed.
Results The mean age of 37 brain dead organ donors seen over two years was 27.6 years (+SD 10.70). The male-female ratio was 3:1 (n=28: n=9). About 51% (n=19) of the brain-dead organ donors were white, while the remaining races together constituted about 49% (n=18). The cause of death in the majority of the subjects (n=26, 70.3%) was trauma related (Assault, MVA, GSW, Fall). The average time interval between being certified brain dead and harvesting of the organ is 11 hours (+SD 6.2). The mean height recorded in 27 subjects was 1.72m (+SD 0.11), and the average weight recorded in all patients was 69.6kg (+SD 19.5). The mean total protein level recorded in 33 subjects was 49.4g/dL (+21.OSD), while the mean albumin level was 23.2g/dL (+7.4SD). Other electrolytes and liver function tests parameter were normal.
Conclusion This study deomonstrated significant hypoproteinemia and hypoalbuminemia in brain dead organ donors seen at the Transplant Unit of GSH. A further controlled prospective study is needed to validate this finding.

SURGICAL MANAGEMENT OF PSEUDOCYSTS ASSOCIATED WITH TRAUMA
Vermaak JS, Balabyeki MA, Tun M, Jeppe C, Smith MD
Chris Hani Baragwanath Hospital, University of the Witwatersrand, Department of Surgery,

Introduction Pseudocysts associated with blunt abdominal trauma are not a common presentation. Due to the paucity of information in current literature, we wanted to review our own records regarding the outcome of patients who had psuedocysts associated with blunt abdominal trauma. AIM: To evaluate the safety and efficacy of surgery in the management of psuedocysts in trauma.
Method A retrospective review of the database of patients diagnosed with pseudocysts in the setting of trauma from August 1991 to February 2000 (a total of 103 months).
Results There were 10 patients reviewed with a mean age of 28 years (range 18 - 40). Nine males and one female. Serum amylase ranged from 154 to 4160 (average 2280) at the time of presentation which was on average 25 days after the traumatic insult (range 3 - 72 days). One internal drainage procedure, 8 resections, and 1 combination of drainage and resection procedures were performed. Previous attempts to address the pseudocysts non-surgically were attempted in 5 patients. Only one patient had documented early morbidity. We had long-term follow-up in 4 patients. There was no operative mortality or cyst recurrence.
Conclusion Surgical mangement is a safe option and was required in all the patients. Morbidity and mortality is acceptably low.

Monday 9 August, 14h00 - 15h15
Venue: Roof Terrace
Chair: M Smith/B Warren

MEDICOLEGAL HAZARDS OF A THYROIDECTOMY OPERATION – HOW TO AVOID THEM
Fetter G.K., Botha J.R.
Department of Surgery, University of the Witwatersrand.

Aim
1. To demonstrate routine complete exploration of the whole length of the recurrent laryngeal nerve (RLN) decreases permanent injury significantly.
2. To demonstrate routine exploration of the parathyroid glands also decreases the incidence of permanent hypoparathyroidism.
3. To justify why a "subtotal" operation should be done infrequently.
4. To justify the use of the Harmonic SC14 shears for routine use for thyroidectomy operations.

Introduction For benign thyroid disease, a general rule of thumb suggests that a permanent RLN injury rate of 5% is acceptable for the surgeon who does the occasional thyroidectomy. This should drop to about 1-2 % in centres of excellence. An acceptable rate of permanent hypoparathyroidism is about 4 – 8% after a total thyroidectomy. The challenge therefore is to show that, with proper surgical technique, this "acceptable" complication rate becomes unacceptable.
Methods A retrospective analysis of thyroidectomies done by myself over the last few years was analysed. A review of the literature was also undertaken. In one study, reviewing surgery for benign thyroid disease, routine RLN exposure resulted in a permanent RLN injury rate of 0,0 to 1,1% in over 27,000 nerves put at risk. Prior to this study, the permanent RLN injury, by the same surgeon, was 3 -10 % higher compared to the period where the RLN was only localised.
Conclusions Routine complete RLN exposure, based on latest data, should be mandatory. Once the technique is perfected, fewer subtotal thyroidectomies and lobectomies will be performed, resulting in less need for difficult "redo" thyroidectomies.

USE OF SELF EXPANDING OESOPHAGEAL STENT FOR OESOPHAGEAL CARCINOMA
J Roberts Thomson
Department of Surgery, Polokwane Hospital

Introduction The self expanding oesophageal stent has been in use for the past 5 years. Its exact place in management of this disease when compared with other modes of treatment remain controversial. Aim A review of 108 consecutive stent inserts is presented.
Methods Patient selection and technique of insertion is described as well as follow up. Results Of 108 stents inserted 64 were available for follow-up at one month. 72 Boston Scientific and 36 Wilson Cook stents were inserted. 66 were done as day case procedures. Median, ode and Mean survival was around 4 months.
Conclusions Stent insertions are useful for all stages of carcinoma. Cost is a concerning factor.

THE EXPRESSION OF MUCIN IN NORMAL TISSUE. AN IMMUNOHISTOCHEMICAL STUDY
[1]DB Matelakengisa, [2]M Tyler, [2]A. Mall, [1]P. Hall
Divisions of Anatomical Pathology[1] and General Surgery[2], Faculty of Health Sciences, University of Cape Town

Introduction Mucins are high molecular weight glycoproteins expressed in a variety of normal tissues and disease states.

Aim To determine the optimum tissues to be used as positive control slides for future studies of mucins in various disease states.
Materials and Methods Sections of normal tissues - breast, cervix, endometrium, fallopian tubes, gallbladder, biliary tree, lung, oesophageal glands, pancreatic duct, salivary gland ducts, seminal vesicle and small and large intestine, were stained by alcian blue and PAS to demonstrate acidic and neutral mucins respectively, and high iron diamine/alcian blue to show sulphated and acidic non sulphated mucins. Immunohistochemical stains were performed using antibodies to MUC1, MUC1c, MUC2, MUC5AC and MUC6.
Results The tissues expressed acidic, neutral and sulphated and acidic sulphated mucins in variable combinations. MUC1 and MUC1c are expressed in breast, cervix, endometrium, fallopian tube, focally in biliary tree, pancreatic ducts and salivary gland ducts, MUC2 in lung, large and small intestines, MUC5AC in cervix and gallbladder and MUC6 focally in gallbladder and seminal vesicle.
Conclusion The following are recommended as positive control slides – breast for MUC1 and MUC1c, colon for MUC2, cervix for MUC5AC and gall bladder for MUC6.

THE BIOCHEMICAL CHARACTERISATION OF RESPIRATORY MUCINS FROM PATIENTS WITH TUBERCULOSIS (TB). A REPORT OF PRELIMINARY FINDINGS.

[1]**U Govender**, [1]A Mall, [1]Z Lotz, [2]V Burch, [3]H Zar and [1]D Kahn.
[1]Dept of Surgery, [2]GF Jooste and [3]Red Cross Hospitals, University of Cape Town.

Introduction TB is endemic in South Africa and is a recognised cause of bronchorrhea (more than 100ml of mucus production per day). To date there are no reports on the type of mucin produced in the respiratory tract of patients with TB. MUC5AC and MUC5B mucins are found in normal respiratory secretions.
Methods Sputum from patients (adults, n=15 and children, n=6) was obtained from patients at Red Cross and GF Jooste Hospitals in Cape Town. TB diagnosis was made by AFB staining and/or culture. The sputum was added to 6M guanidinium chloride (GuHCl) and a cocktail of proteolytic inhibitors at a dilution of 1:5. Mucins were purified by CsCl density gradient ultra-centrifugation at a 105 000g, twice for 48h and analysed by gel filtration, SDS-PAGE and agarose gel electrophoresis.
Results Mucins fractionated at a density of approximately 1.39g/ml-1 in CsCl/GuHCl. The mucin peak, as determined by the PAS assay was found to be free of all contaminant protein at this density. Gel filtration studies showed that mucins from both controls and TB patients contained both polymeric and degraded glycoproteins (subunits). Agarose gel electrophoresis showed that MUC2 was present in patients with lung disease, with TB patients secreting two different glycoforms of this mucin. MUC5B was absent in patients with TB.
Conclusion Whilst MUC2, a novel mucin was present in a variety of diseases of the lung, MUC5B, a mucin normally found in the respiratory tract, was absent in patients with TB.

INCISIONAL HERNIA: PRELIMINARY RESULTS OF A SINGLE UNIT EXPERIENCE

Y.Pillay, N.M.Naidoo, T.E.Madiba
Department of General Surgery, Nelson R. Mandela School of Medicine, Durban.

Introduction Incisional hernias are a common problem in general surgery and they have a varied aetiology. For the purposes of this study incisional hernia has been defined as a hernia through an incisional site away from known abdominal wall defects.
Aim To document a single unit experience with the management of incisional hernias at King Edward VIII Hospital.
Patients and Methods This is a prospective audit of incisional hernias in a single unit over 41 months (January2001-May 2004). The information documented included demographic data, nature of original operation and intra-operative findings. All patients except one underwent repair. Documented intra-operative information included the identification of the original suture as well as the number of defects. Generally a tissue repair was performed using nylon suture. There was selective mesh repair only if the sheath could not be closed without tension.
Results A total number of 51 patients were seen of which 45 were female. 38 and 12 patients underwent elective and emergency surgery respectively. One patient was managed conservatively. Medical risk factors included diabetes (4), hypertension (2), diabetic & hypertension (1), cardiac disease (1). The aetiology included gynaecological surgery (n=37), general surgery (n=10) and unknown (n=3). There was history of previous sepsis in four patients (7%).
There was one sheath defect in 42 patients, two defects in 2 patients, and three defects in 3 patients. In 58% of patients the original suture could not be found, suggesting a possibility that an absorbable rather than a non-absorbable suture was used at the original operation. Gangrenous bowel was present in two patients. Forty six patients underwent tissue repair and only four had a mesh repair.
The morbidity rate was 15% including atelectasis (2), wound sepsis (5) and recurrence (1). Three patients died of whom one had gangrenous bowel.
Conclusion Most incisional hernias follow gynaecological surgery. There was no evidence of a non-absorbable suture having been used at the original operation in over half of the patients. We recommend that meticulous technique is essential in closing the abdominal incision and that a non-absorbable suture be used to close the sheath.

MANAGING ARTERIAL SIZE DISCREPANCY IN MICROVASCULAR AUTOTRANSPLANTATION – A COMPARISON OF TWO TECHNIQUES.

R Rickard, G Engelbrecht, D Hudson, D Kahn
University of Cape Town

Microvascular autotransplantation of tissue is employed in reconstruction following trauma or cancer ablation. Often in head and neck reconstruction, and increasingly in microsurgical breast reconstruction, an arterial size discrepancy will exist where the upstream vessel is significantly smaller. Anastomotic patency rates decrease with increasing size discrepancy. Microsurgical texts have traditionally taught that arterial discrepancies can be dealt with by obliquely sectioning the smaller vessel, and that this angle of section should not exceed 30 degrees. No experimental data is found to substantiate this statement. More recently, a limited report of the success of an invaginating end-in-end anastomosis has been published as a technique to deal with this discrepancy. We have designed a series of experiments to allow us to compare these two techniques, where a size discrepancy exists of 1.5-2 : 1, and where the upstream vessel is smaller.
Materials and Methods An anatomical model was sought where there was the size discrepancy required and where tension at the anastomosis would be absent. After pilot studies in the Guinea Pig and Rabbit, we arrived at a Wistar Rat Superficial Epigastric (external diameter ~550 µm) / Femoral Artery (external diameter ~950 µm) model, giving a median mismatch of 1.75 : 1. A paired design was used. Side and order of execution were randomised. 312 anastomoses in 156 animals were required to find a greater than 5% discrepancy in patency rate (80% power, 5% significance level). Anastomoses were timed. Patency was checked at 1 hour and at 1 week. Results Full results from the experiments will be available 31 June 2004. Results of 214 anastomoses in 107 animals to date (04 June 2004) indicate a difference in patency rate of less than 5%. The invagination technique takes 2/3 of the time required

to execute an oblique cut technique.
Conclusion In rat arteries where a size discrepancy of 1.75 exists, the invagination technique of microvascular anastomosis is superior in terms of speed of execution.

PERI-OESOPHAGEAL FIBROSIS AS A CAUSE FOR POST LAPAROSCOPIC NISSEN FUNDOPLICATION DYSPHAGIA.
M van Rensburg, M Callanan, PC Bornman
Surgical Gastroenterology, Dept of Surgery, Groote Schuur Hospital, University of Cape Town

Introduction We report a hitherto poorly defined subgroup of patients with intractable dysphagia after laparoscopic Nissen fundoplication (LNF) caused by dense peri-oesophageal fibrosis who do not respond to conservative treatment.
Methods All patients who underwent revision laparoscopic surgery since 2002 for persistent dysphagia as a result of peri-oesophageal fibrosis were reviewed to assess demographic features and clinical outcome after revision surgery. Severity and frequency of dysphagia were graded according to a numerical scoring system ranging from 0 to 16.
Results Nine patients who previously underwent LNF were demonstrated to have peri-oesophageal fibrosis as the only abnormality detected at the time of revision laparoscopic surgery for dysphagia. There were 2 males and 7 females; mean age 43.5 yrs (21-71). Post-LNF dysphagia was persistent and severe in all (4-16) associated with marked weight loss in 8 patients (5-34kg). Mean time to revision surgery was 16,5 months (2-57). One patient required re-operation at 10 days for a missed benign oesophageal stricture. All but one patient had complete relief of dysphagia with a mean follow-up of 12 months.
Conclusion This study draws attention to a subgroup of patients with severe and persistent dysphagia caused by peri-oesophageal fibrosis and who do not respond to conservative treatment. Early identification of these patients is important to avoid prolonged and inappropriate conservative treatment. Revision surgery provides immediate and sustained relief of dysphagia in the majority of patients.

Poster Session

Sunday 8 August, 13h00 - 14h00

Venue: Roof Terrace

THE COST OF TREATING SERIOUS FIREARM-RELATED INJURIES IN SOUTH AFRICA
D Allard, VC Burch*
Department of Surgery and Internal Medicine*, GF Jooste Hospital,Cape Town, South Africa

Introduction Firearms, the leading external cause of non-natural deaths in South Africa (SA), claim approximately 15 000 lives annually. This figure is dwarfed by the non-fatal injury burden. Up to 127 000 firearm-injured victims seek state health care assistance per annum. The fiscal burden of treating these injuries is not known.
Methods All serious (requiring admission to hospital and emergency surgery) abdominal firearm-related injuries presenting to a state hospital over a 6-month period were reviewed. A cost analysis using five variables was performed: operating theatre time, duration of hospital stay, pharmaceutical and blood products used, laboratory services used and diagnostic imaging studies performed.
Results Twenty-three serious abdominal gunshot injuries were admitted. Twenty one (91%) were treated at the hospital from admission until discharge. Each admission cost approximately 1467 US$. The hospital stay (47%) and operating theatre (30%) costs accounted for most of the total cost. Pharmaceuticals and blood products (20%), laboratory services (2%) and imaging studies (1%) contributed less than 25% to the total cost.
Discussion Serious abdominal gunshot injuries cost at least 13-fold more than the annual per capita SA government expenditure on health. This fiscal burden of approximately 2.9 million US$, almost 4% of the annual health budget, does not include the cost of treating other serious gunshot injuries. These findings highlight the need for successful violence prevention strategies in SA. Such programs must be informed by accurate ongoing surveillance data. The SA Violence and Injury Surveillance Consortium currently provides such information, the injury prevention potential of which still needs to be fully realized.

PENETRATING OESOPHAGEAL TRAUMA: FACTORS AFFECTING OUTCOME
H.C. Bardwell, N. Smakman, A.J. Nicol, G. Walters, A. Brooks, P.H. Navsaria and R. Zellweger
Trauma Unit, Dept of Surgery, Groote Schuur Hospital & University of Cape Town

Background Penetrating oesophageal trauma is a rare event and as a result, the risk factors affecting outcome have not been clearly identified. Delay in management has been cited as a contributing factor to the high rates of morbidity and mortality, but hard evidence is lacking thus far.
Methods A retrospective study of penetrating oesophageal trauma presenting to a level 1trauma centre over an 8-year period. Only patients who reached the operating theatre were included. Outcome was assessed in terms of mortality, morbidity (oesophageal and non-oesophageal), length of stay in hospital and the intensive care unit (ICU).
Results 52 patients with oesophageal injuries were included. Overall mortality was 5.8 %. Fifteen patients (28.8%) developed oesophageal related complications. Time from injury to management was the sole important risk factor for the development of oesophageal related complications (p=0.001), but did not have an influence on length of stay in the ICU (p= 0.560), hospital stay (p= 0.329), non-oesophageal related complications (p = 0.963) and death (p= 0.937). Gunshot injuries spent a longer time in the ICU (p = 0.007) and the duration of hospitalisation was longer for the higher grade oesophageal injuries (p = 0.025).
Conclusion The risk of oesophageal related complications is directly related to the time taken for definitive management of the oesophageal injury.

HAEMORRHOIDECTOMY WITH THE LIGASURE®.
Fetter G.K.
Department of Surgery, University of the Witwatersrand.

Aim To justify the use of the LigaSure® for a standard haemorrhoidectomy operation.
Methods A slide show presentation of the LigaSure® being used for a haemorrhoidectomy operation will be shown.
A cost and time saving analysis will be done comparing this to the standard formal haemorrhoidectomy operation.
Results The LigaSure® instrument is a fairly expensive disposable tool. Its use for haemorrhoidectomy operations can only be justified if it benefits the outcome of the patient. The instrument is easy to use and its use in haemorrhoidectomy operations requires little surgical dexterity. Damage to internal anal sphincter is almost impossible with this instrument. Nearby tissue temperatures are not very high during the use of this instrument. Bleeding is insignificant and therefore no suturing or anal plugs (Spongiostan®) are required.
Conclusions In my opinion, the use of the LigaSure® for routine haemorrhoidectomy operations is completely justified, even if cost analysis shows that the surgery is slightly more expensive. Literature supports a decrease in the severity of pain experienced by the patient after this procedure. Initial perceptions were that the

pain experienced by the patient was similar but, as more patients have undergone the procedure, it appears that the patients definitely seem to have less pain overall and for a shorter period of time.

TRAUMATIC ABDOMINAL WALL HERNIA

T C Hardcastle
University of Stellenbosch, Tygerberg Hospital

Aim Review of Blunt Traumatic Abdominal wall hernias (TAWH) in our institution
Method Retrospective review of blunt abdominal trauma cases for the past 6 months in our unit Results: Four patients were found where there was a diagnosis made of TAWH. Two were male and two female, with a mean age of 36 years. Three were involved in vehicular collisions, while one was assaulted with a large stone. All were diagnosed on presentation. Three by CT scan and one clinically. Two were repaired emergently, one repaired after 4 months, the other patient, with the assault refused surgery. Associated intraperitoneal injuries included splenic, renal and colonic injuries in one patient, while no intraabdominal injuries were found in the other three cases. Extra-abdominal injuries included humerus, femur and acetabular fractures and pelvic ring injuries. Two patients had varied degrees of lung injury. These were managed as per standard orthopaedic and ICU principles.
Conclusion This rare injury requires a high index of suspicion and a low threshhold for intervention

TRANSDIAPHRAGMATIC PLEURAL LAVAGE IN PENETRATING THORACOABDOMINAL TRAUMA

S.Ibirogba, R. Zellweger, P.H. Navsaria, F. Hess, J. Omoshoro-Jones, D. Kahn an A. Nicol
Department of General Surgery, Trauma Unit, Groote Schuur Hospital and the University of Cape Town, Cape Town, South Africa

Background The purpose of this study was to determine the incidence of thoracic sepsis following a systematic thoracic cavity washout through the injured diaphragm in patients with penetrating thoracoabdominal trauma.
Methods Prospectively collected data on all patients presenting with penetrating thoracoabdominal trauma between July 1999 and July 2002 were analysed. Patients with peritoneal biliary-gastroenteric (BGE) contamination and a diaphragmatic laceration were managed by laparotomy and transdiaphragmatic thoracic lavage.
Results A total of 217 patients had penetrating thoracoabdominal injuries, of whom 110 had BGE contamination of the peritoneal cavity with spillage into the pleural cavity. The mean Injury Severity Score was 38.1. Gunshot and stab wounds occurred in 79 (71.8 per cent) and 31 (28.2 per cent) respectively. Contamination was from the stomach (55.4 per cent), large bowel (37.3 per cent), small bowel (29.1 per cent, gallbladder and bile ducts (9.1 per cent) and pancreas (6.4 per cent). Thoracic complications occurred in six patients (5.5 per cent): empyema in two, Escberichia coli-related pneumonia in three and pleuritis in one. There were no deaths.
Conclusion A thoracic washout through the injured diaphragm in patients with penetrating thoracoabdominal trauma and BGE contamination was associated with a low rate of intrathoracic septic complications

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FACTORS WHICH INFLUENCE RESTORATION OF LIVER MASS AFTER PARTIAL HEPATECTOMY

S Ibirogba, A Mall, W Spearman, Z Lotz, M Tyler, D Kahn
Department of Surgery and MRC Liver Centre, University of Cape Town

Living donor liver transplantation (LDLT) was introduced because of the critical shortage of cadaver organs. LDLT is feasible because of the latent capacity of the remnant liver to regenerate in response to partial hepatectomy (PH). It has been shown that the remnant liver in the donor takes longer to return to its original size compared to the transplanted liver in the recipient.
Aim To investigate the factors which influence the restoration of liver mass after PH in rats. Long-Evans rats weighing 200-250g were subjected to either PH or sham operation and treated with either saline or regenerating liver cytosol and cyclosporine. The animals were sacrificed at various intervals and the remnant liver removed and used to determine the liver weight to body weight (LWBW) ratio. The LWBW ratio after sham operation was .045 on day 0 and remained unchanged over the first 4 days post-operatively (.044 on day 1 and .039 on day 4). After PH the LWBW ratio was .020 on day 1 and increased to .029 on day 4. Liver mass was not restored by one week after PH.

RAPAMYCIN IMPAIRS THE HEALING OF THE URETERIC ANASTOMOSIS

D Kahn,W Spearman,A Mall, G Engelbrecht, Z Lotz, M Tyler
Groote Schuur Hospital

Aim The immunosuppressive properties of rapamycin are well documented and it is used routinely in renal transplant recipients. Rapamycin also inhibits fibroblasts which may be important for proper healing of the ureteric anastomosis after renal transplantation. In this study we invetigated the effect of rapamycin on the healing of the ureteric anastomosis.
Methods Large White X Landrace pigs(n=12)weighing 22-30kg were subjected to laparotomy and mobilization of both urethers. Each ureter was divided, spatulated and re-anastomosed using continuous 6/0 PDS. The animals were randomly allocated to receive either rapamycin 2mg orally per day, or no treatment. On the fifth postoperative day the anastomoses were excised and examined histologically(Haematoxylin-eosin and Chromotrop Aninline Blue) and biochemically(hydroxyproline Levels). Thin Strips of ureter(+- 5mm) were used to measure the breaking strength of the anastomosis.
Results The ureteric anastomosis were all healed and patent, although the proximal ureters were markedly dilated. The serum creatinine levels were similar in the two groups(1.57+-0.06 and 1.55+-).09mg/ml). The breaking strength of the ureteric anastomosis was lower in the rapamycin treated animals compared to the control group(221+- 24g versus 261+- 16g). The hydroxyproline levels in the ureter were lower in the rapamycin treated animals(12.8+- 2.7 versus 22.4+- 5.3ug/ml). Histological examination showed no difference in the morphology or callagen staining between the two groups.
Conclusion Thus in summary, healing of the ureteric anastomosis appears to be impaired in animals treated with rapamycin

THE EFFECT OF RAPAMYCIN ON BILE DUCT HEALING

D Kahn
Department of Surgery and Medical Research Council Liver Centre,University of Cape Town

Aim Rapamycin is a potent immunosuppressive agent which inhibits cellular proliferation during mitosis. It also has a strong inhibitory effect on fibroblasts and there has been a suggestion that there may be an increased incidence of post transplant surgical wound problems.

The aim of this study was to investigate the effect of rapamycin on the healing of the bile duct.
Methods Large White X Landrace pigs (n=12) weighing 22.30kg were subjected to laparotomy and dissection of the bile duct. The bile duct was divided and re-anastomosed using a continuous 6/0 PDS suture. The animals were randomized to receive either rapamycin 2mg orally daily (Group1) Or no treatment (Group 2). After five days the animals were sacrificed. The anastomoses were examined histologically (Haematoxylin-eosin and Chromotrop Aninline Blue) and biochemically (hydroxyproline levels). The breaking strength of bile strips were also measured.
Results All the anastomoses were healed and there were no macroscopic differences between the two groups. Serum bilirubin, alkaline phosphatase and AST levels were also within normal limits in the two groups. The breaking strength was lower in the rapamycin treated animals(177=36g versus 296=72g). Hydroxyproline levels in the bile duct was also lower in the rapamycin treated animals (9.75+- 5.9versus 15.1+- 4.3ug/ml). Histologically there was no difference in morphology or collagen staining.
Conclusion These findings show that rapamycin may impair the healing of the bile duct.

THE FINAL METHOD OF AVOIDABLE DEATH ASSESSMENTS IN POLOKWANE
Machowski Z.A, Mavhungu R., Bashiya L.G.
Department of General Surgery, Polokwane, MEDUNSA

In this unit we were working for 4 years on invention and implementation of a good quality but also practical in our circumstances method of assessments of avoidable deaths. The development of this system and its final form included the following elements:
1. Availability of a reliable record system with collected data prospectively.
2. Classification of different deaths categories evaluating character of deaths.
3. Division of avoidable from non-avoidable deaths during departmental meetings by all members of surgical staff according to different deaths categories.
4. Prospective"assessment of expected deaths according to probability of deaths with a scoring system and by specially organized assessments before deaths occurred using trauma scoring system, modified scoring system and also by extraordinary meetings with 2 independent senior surgeons (conclusions have been recorded and additionally unexplored measures of treatment, if existed, were adopted).
5. Availability of post-mortem examinations, especially when circumstances of events were not clear.
6. Confidential monitoring of personal surgeons' avoidable mortality. Information was recorded privately only by the head of department and was available for personally concerned surgeons.
7. Making results comparable with results from other centres in the future. The presented scoring system (point "4") here could be adopted by others or other superior systems, if they will be introduced for the whole country. Described our system exists in its final form in Polokwane for 3 months. The most important is a careful watching of trends in avoidable deaths monitoring system and immediate setting up preventative measures.

OVERVIEW OF PAEDIATRIC RENAL TRANSPLANTS – 35 YEARS EXPERIENCE (1968 – 2002)
McCulloch MI, Sinclair P, Alt J, Wiggelinkhuizen J, Spearman CWN, Pascoe M, Halkett J, McCurdie F, Pontin A, Millar AJW, Kahn D.
School of children and Adolescent Health, Red Cross Children's Hospital and Grootte Schuur Hospital, University of Cape Town.

Introduction Paediatric Renal Tranplantation has become an established form of therapy for end stage renal failure. Although this is standard practice in adult renal medicine, there are some specific issues related to paediatrics including growth, compliance and technical difficulties. There are only a few centers in South Africa which are performing these paediatric procedures and international experience suggests that results are better if these are concentrated in units managing these cases on a day basis and performing a certain minimal number per year to maintain a skills base.
Aim Review of our paediatric renal transplant (tx) results at Groote Schuur (GSH)/ Red Cross Children's Hospitals (RXH) from 1968 – 2003 with special emphasis on the results of the last 7 years.
Methods Retrospective case review of paediatric cases < 17 years of age transplanted at GSH/RXH since 1968 with specific reference to the age at transplant, gender, race, cause of renal failure, graft and patient survival and therapeutic agents used.
Results First paediatric renal tx performed in August 1968 followed by 115 transplants in 97 paediatric patients to date. The majority, 58%(65/113)of these have been performed since 1995. 50 boys and 47 girls with 13 patients requiring 2 grafts, 2 required 3 each and 1 patient required 4 transplanted kidneys. 3 patients had combined liver/kidney transplants. Causes of renal failure predominantly dysplasia, posterior urethral valves and glomerulonephritis.

	Patient Survival		Graft Survival	
	Overall	1995 – 2002	Overall	1995 – 2002
1 Year survival	89%	97%	72%	89%
3 Year survival	86%	94%	65%	87%

Immunosuppressant therapy included calcineurin inhibitors (Cyclosporin,Tacrolimus), purine antagonists (Azathioprine & Mycophenolate Mofetil), Rapamycin and IL2 receptor blockers (Basiliximab & Daclizumab). Almost half of the patients were on Tacrolimus therapy.
IL2 receptor blockers had a significant impact on the incidence of rejection with a reduction of acute rejection from 70%(16/23) to 19%(3/16) when compared to historic controls.
The incidence of rejection was especially striking in the group receiving Daclizumab 0%(0/9 vs. Basiliximab 43%(3/7) although this is a very small group..
Infections including TB,CMV remain prevalent and one of our major problems.
Conclusion Paediatric renal transplant is a successful form of therapy provided it is performed in a unit with frequent experience in managing children with renal disease and immunosuppression. Long-term outcomes are improving all the time with newer immunosuppressant therapy and improved technical skill.

THE TEMPORARY CLOSURE OF OPEN ABDOMINAL WOUNDS: THE MODIFIED SANDWICH-VACUUM PACK TECHNIQUE
P.H. Navsaria, A.J. Nicol, D. Kahn. Trauma Unit,
Groote Schuur Hospital and University of Cape Town

Aim We present a five-year experience with the modified sandwich-vacuum pack technique of temporary abdominal wall closure.
Patients and Methods The technique, a modification of the original sandwich and vacuum pack methods, using an opened 3-litre urological irrigation bag and continuous high-pressure suction is described. The records of all patients who underwent temporary abdominal wall closure using this method from January 1996 to December 2000 were examined.
Results The modified sandwich-vacuum pack was used 139 times in 55 patients. Forty patients sustained penetrating trauma while

15 patients sustained blunt trauma. The mean Injury Severity Score was 19 (range 9-34). Intra-abdominal sepsis (50.9%) was the commonest indication, followed by visceral oedema (18.2%), abdominal compartment syndrome (16.4%), intra-abdominal packs (10.9%), and abdominal wall defects (3.6%). The overall mortality was 45.5%. Three patients (5.4%) developed enterocutaneous fistulae. Of the thirty survivors, sixteen patients underwent primary fascia closure. Of the 15 patients with ventral hernias, 14 have had their hernia repaired, and one patient has been lost to follow-up.
Conclusion The modified sandwich-vacuum pack technique of temporary abdominal wall closure is easy and rapidly applied, cost effective and provides effective means of containing abdominal wall contents.

CIVILIAN GALLBLADDER TRAUMA
Apostolou C, Zellweger R, Navsaria PH, Nicol AJ.
Dept of Surgery: Trauma Unit, Groote Schuur Hospital & University of Cape Town

Aim Trauma to the gallbladder is rare, yet may be associated with significant morbidity when missed or improperly managed. This is the experience of a single tertiary trauma centre.
Methods This is a retrospective review of consecutive gallbladder injuries treated at Groote Schuur Hospital trauma unit over a 3 year period (ending May 2003). Surgical management, associated injuries, morbidity and mortality were determined.
Results 43 patients with gallbladder injuries were identified among 1242 patients undergoing laparotomy for acute trauma (3.46%). The trauma nature was penetrating in 40(37 gunshot wounds and 3 stab wounds) and 3 patients suffered from blunt trauma. All patients underwent laparotomy due to associated abdominal trauma. 36 patients were treated with cholecystectomy, 4 patients underwent primary gallbladder repair, while 3 patients were treated conservatively. No morbidity or mortality could be attributed to the gallbladder trauma or management.
Conclusion Cholecystectomy is the treatment of choice for the majority of gallbladder injuries in the civilian trauma setting.

HUMAN ATHEROMATIC FEMORAL ARTERY PLAQUES TRANSPLANTED TO SCID MICE ATTRACT MACROPHAGES
M. Moscicka, **WL. Olszewski**, B. Interewicz, M. Sikora, D. Zolich, Z. Machowski
Dept. of Surgical Research & Transplantology, Medical Research Center, Polish Academy of Sciences, Central Clinical Hospital, Ministry of Internal Affaires, Warsaw, Poland, Dept. of Surgery, Medunsa Polokwane Campus, Polokwane

Atherosclerosis is an inflammatory process. The etiological factors are, beside of oxidized LDL, bacterial and viral antigens of Chlamydiae, Helicobacter, CMV, Herpes and others. We have shown that arterial walls including adventitia of femoral and tibial arteries contain, in contrast to carotid arteries, more bacterial DNA of other than above listed microbes. The most common turned to be Staph. epidermidis. The presence of Cocci should evoke fast macrophagal reaction. Aim. To investigate recruitment of macrophages to atheromatous plaque harvested from femoral and carotid arteries and transplanted to scid mice.
Methods Ten femoral and another ten carotid atheromatous plaques were transplanted subcutaneously onto the dorsum of scid mice. DNA was extracted from fragments of each plaque. PCR amplification was performed with primers for gene fragment coding bacterial 16s RNA, a nd for major outer membrane protein (ompA) of CP with positive and negative controls. Products were separated by PAGE electrophoresis and silver stained. Routine bacteriological cultures of specimens were also carried out. Seven days after transplantation plaques were removed with the surrounding tissue. Controls were implants of human saphenous vein. Specimens were stained for evaluation of recruited populations with mAbs against human HLA I, HLA DR and CD68, and mouse MHC I, PCNA, macrophages and neutrophils
Results Microbial DNA (16sRNA) was detected in 62% of femoral and 55% of carotid arteries and CP in 100% and 33%, respectively ($p<0.001$). Implanted fragments of femoral and tibial arteries were surrounded by dense accumulations of mouse macrophages and neutrophiles. Some of them were penetrating plaques. These cells were MHC I and PCNA+ (dividing). Very few of them were HLA DR+ (human). Infiltrates around carotid plaques were less intensive. Venous implants evoked only minor reaction. Interestingly, no bacterial DNA was found in implanted plaques after 7 days. Conclusions. Human atheromatous plaques evoke major reaction of mouse macrophages. This is followed by disappearance of plaque bacterial antigens. Bacteria may be one of attractants of macrophages to atheromatous arteries.

ACTIVATION OF HUMAN SPLENIC DENDRITIC CELLS BY BACTERIAL ANTIGENS
Stanislawska J., Interewicz B., Olszewski W. L., Machowski Z., Thomson J.R.
Dept. of Surgical Research & Transplantology, Medical Research Center, Polish Academy of Sciences, Central Clinical Hospital, Ministry of Internal Affaires, Warsaw, Poland, Dept. of Surgery, Medunsa Polokwane Campus, Polokwane

Introduction Dendritic cells (DC) play crucial role in initiation and modulation of immune reaction, especially innate immune response. Toll like receptors (TLR) on DC are receptors involved in innate response to bacterial infections. Bacterial colonisation can cause complications after surgery and overactivation of the immune system through pathogen associated molecular patterns (PAMP) like LPS or bacterial DNA leading to sepsis.
Aim To determine the ability various bacterial antigens to stimulate and activate human splenic DC.
Methods Dendritic cells. Fragments of human spleen were obtained from cadaveric organ donors. DC were isolated by digestion with collagenase D, separation on dense BSA and incubation in culture with RPMI-5. Bacterial antigens. The nonpathogenic, but immunogenic E.coli strain - E.coliDH5alphapEGFP (50 bacteria per cell), LPS of E.coli 0127:B8 (1microg/ml) and bacterial DNA from E.coliDH5alphapEGFP (5microg/ml) were incubate with DC for 24h. Immunohistochemical identification of DC was performed with HLA-DR, CD68, CD14 and CD123 mAbs. Expression of receptors and molecules by DC was determined by western-blot using anti- TLR2, TLR3, TLR4, TLR9, CD83, CD123, Hsp60 and Hsp90 mAbs.
Results After incubation with bacterial antigens the percentage of HLA-DR+ and CD123+ cells increased and the number of CD68 and CD14 positive cells decreased in every case. In untreated population of human splenic DC minimal expression of TLR2, TLR3 and CD123 was found, while other receptors were not detected. After incubation with bacteria a marked increase of CD83, TLR2, TLR3 and TLR4 was observed. Treatment with LPS increased expression of TLR2, TLR4, Hsp60 and Hsp90. Stimulation by bacterial DNA resulted mainly in Hsp60 and TLR9 expression.
Conclusions The response of human splenic DC to various bacterial antigens varies. All three types of bacterial stimulators increased expression of CD123 and TLR3. The expression of Hsp60 was characteristic for CpGDNA, Hsp90 for LPS treatment. CD83 was expressed only after contact with whole bacterial cells. These observation are useful for better understanding of the pathomechanism of sepsis and establishing of a more rational therapy.

CHRONIC INFLAMMATION STIMULATES DE NOVO FORMATION OF LYMPH NODES IN HUMAN LEGS

W. L. Olszewski, Z. Machowski
Dept. of Surgery, Medunsa Polokwane Campus, Polokwane, Dept. of Surgical Research & Transplantology, Medical Research Center, Polish Academy of Sciences, Central Clinical Hospital, Ministry of Internal Affaires, Warsaw, Poland,

Chronic inflammation of limb skin (ulcers, dermatitis) cause cellular infiltrates and destruction of lymphatics. The infiltrating lymphocytes often organize themselves in inflamed tissues as follicle-like structures similar to those of lymph nodes.
Aim To detect by means of isotopic lymphography formation of new lymphatic tissue in patients with leg chronic skin inflammation and lymph stasis. Material & Methods. 153 patients with long-lasting lymph stasis in lower limbs, caused by soft tissue infection or mechanical trauma of soft tissues and bones. The 99m Tc-labelled Nanocoll was injected intradermally into foot toe-web was used for lymphoscintigraphy. Results. In 10% of patients with postinflammatory and 25% with posttraumatic lymph stasis "newly-formed" lymph nodes were detected by means of lymphoscintigraphy. They were located along the large veins. Normally, lymph nodes are seen in popliteal area in less than 5%. In patients the total mass of visualized nodes largely exceeded seen in healthy subjects. The calculated surface area of "newly-formed" nodes reached 50-70% of area of ipsilateral inguinal nodes. Histology of specimens of biopsied nodes of 3 patients revealed in one a lymph node structure without differentiation into cortical and medullary area, in another a follicle-like structure in a dilated lymph vessel. Lymph clot from dilated vessel contained a lymphocyte/dendritic cell aggregate. Conclusions. The "newly-formed" nodes most likely originate from primordial lymphoid follicles and/or lymphoid cell aggregates formed in response to microbial products and self-antigens from damaged tissues. Detection of "newly-formed" lymph nodes in limb requires appropriate therapy.

LOCAL RESECTION OF THE PANCREATIC HEAD & LATERAL PANCREATICO-JEJUNOSTOMY FOR CHRONIC PANCREATITIS

M Balabyeki, **JAO Omoshoro-Jones,** C Jeppe, MP Pawlak, MD Smith
Surgery Dept, CHB, Wits University, JHB.

Introduction Local resection of the pancreatic head and lateral pancreatico-jejunostomy (LRLPJ) was designed to address the inadequate decompression of the pancreatic head that is often associated with the standard lateral pancreatico-jejunostomy (LPJ) resulting in 40 – 60% pain recurrence rate.
Aim Evaluation of the surgical outcome and pain relief of LRLPJ
Method Review of consecutive LRLPJ over 9.2 years. Six months or more follow-up data were analysed. Pre and post-operative clinical data, morbidity and mortality rates, pain response and perception of benefit from surgery were assessed and analysed. Functional status assessment with a quality of life questionnaire (QLQ c30) was performed.
Results Forty-eight patients had LRLPJ during the period under review. There were 41 males and 7 females with a median age of 45 years (range 24 – 68). The LRLPJ was for failed LPJs in three patients. Alcohol was the primary etiologic agent in 43 patients (90%). Forty-seven (93%) presented with pain with a mean duration of 6.5 years (range 4 – 480 months). Local complications of CP were biliary obstruction in 14 patients and post inflammatory fluid collections in 13. The mean duration of surgery and mean blood loss were 4 hrs (range 3 – 6) and 928mls (range 150 – 2650) respectively. Secondary operations in 22 patients (46%) were biliary bypass 13, cholecystectomy 2, distal pancreatectomy 4, splenectomy 1, cyst excision 1 and hemicolectomy 1. The 30-day major complication rate was 21%. Seven patients (14.5%) died (one within 30 days post-op from myocardial infarction (2%), and six late deaths (12.5%) at a mean survival of 20 months). Four late deaths were related to uncontrolled diabetes. The mean post-operative length of stay was 13 days (range 6 – 40 days). The median follow-up rate was 42 months (range 6 - 102). The mean pre-op visual analogue score was 9.7 and 1.7 postoperatively at last follow-up. Pain was absent or mild in 79%; moderate in 17% and 4% had no relief. Ninety percent perceived a real benefit from the operation, 4% were unsure and 6% experienced no benefit. Functional status assessment revealed significant new diabetic rate and exocrine insufficiency (13 and 11 patients respectively).
Conclusion: LRLPJ provided good pain relief with a good perception of benefit by the patients. Pancreatic insufficiency and high death rate from diabetic complications may suggest a review of indications for this procedure.

NO UTILITY IN THE USE OF THE NASOGASTRIC TUBE IN CHILDREN OPERATED FOR ACUTE APPENDICITIS.

Arturo L Delgado Delgado
Dept of Surgery, University of Transkei

Background; For many years has been used the nasogastric tube as a routine In patients to who have to undergo a laparatomy either elective or emergency. Recently several authors in the world literature recognized a poor utility of the nasogastric tube in these patients, moreover the capacity of it to produce complications or dilating the hospital stayed and even the possibility to produce a Nasogastric tube Syndrome.
Aim: Determine the non-utility of the nasogastric tube use in children operated due to Acute Appendicitis.
Method: a prospective study was done in 22 patients suffering and operated for Acute Appendicitis from February 2001 to march 2002. In every patients was not used the nasogastric tube, given to them Methoclopramide as a prokinetic and central ant emetic. We studied different aspects such as age, sex, state of the Acute Appendicitis (complicated or not), evolution of the patients, time to oral intake, discharge and cots.
Results: From all patients the 77.2% were males; the 72.7 % were between the ages of 6 to 12 years. Was found that in 72.7% of the patients the Acute appendicitis were not complicated. The oral intake was started in the 22 patients in the first 24 hours after operation; all of them had good evolution without any complication. The discharge was performed in the first three days in those with not complicated Appendicitis. The costs were decreased in 9262 USD.
Conclusions and recommendations: We consider that the nasogastric tube is not of utility in most of the patients who need a laparatomy for Acute appendicitis either complicated or not, moreover the nasogastric tube could produce several complications that is why we recommended its use only in very selective patients.

COLOSTOMY CLOSURE WITHOUT BOWEL PREPARATION SINGLE SURGEON AUDIT

Dr L M Ntlhe, Dr M Nchabeleng
Department of Surgery, Medical University of Southern Africa

Introduction Traditional management of the colostomy closure involves "bowel preparation" as it is perceived that this reduces the risk of anastomotic breakdown. The need for bowel preparation is being questioned. This prospective audit addresses colostomy closure without bowel preparation.
Patients and Methods Fifty-four patients, 48 males and 6 females aged between 19 – 55 years (mean 33 years) underwent colostomy closure: trauma 41, benign disease 13, Colostomy closure was performed without bowel preparation . A muco-cutaneous purse string suture closure of all stomas was carried out prior to mobilization. Continuity was restored by a two layer polygalactin suture technique. Bacteriological evaluation of the proximal and distal luminal contents was carried out as well as pus swabs of the colonic debrided ends. End points assessed were wound infection, intra-abdominal sepsis and death.
Results The follow-up ranged from 2 weeks to 8 weeks. All patients came for removal of sutures, fifty of the 54 were seen during monthly follow-up visits until discharge at 8 weeks. There was no mortality. There was no clinical evidence of anastomotic leakage or intra abdominal sepsis. One patient developed superficial wound sepsis due to *E. Coli*. One patient who had anal stenosis and prostatic urethro-rectal fistula following a gunshot developed anastomotic breakdown post closure. He required repeat proximal diversion. His colostomy was closed successfully 2 months later without bowel preparation.
Conclusion Colostomy closure without bowel preparation by the specified technique is safe with a low morbidity. Reproducibility of this single surgeon series merits further evaluation.

SAGES ABSTRACTS

Sunday 8 August, 13h45 - 15h45
Venue: Auditorium 2
Chair: C v Rensburg/J v Zyl

ORALS

A POPULATION GENETICS PEDIGREE PERSPECTIVE ON FAMILIAL TRANSMISSION OF *HELICOBACTER PYLORI*
[1]**Schalk van der Merwe**, [2]Michael Cunningham, [3]Oliver Preisig and [1]Brenda Olivier
[1]Department of Internal Medicine and Gastroenterology, University of Pretoria, Pretoria 0001 South Africa; [2]Department of Genetics, University of Pretoria, Pretoria 0001 South Africa; [3]Inqaba Biotec, PO Box 14356 Hatfield, Pretoria 0028 South Africa

Purpose Transmission pathways of *Helicobacter pylori* are poorly known although many studies have indicated some form of familial acquisition. The high rate of recombination in *H. pylori* suggests that infection with multiple genotypes may be common, and that this may confound molecular epidemiological analyses. We used a multi-gene approach to investigate transmission of *H. pylori* in densely sampled extended families.
Methods The study population comprised 75 volunteers from a rural African community. Antrum and corpus gastric biopsy samples were obtained from each individual. The population includes nine families (mean 8.3 individuals per family), with 52 parent – offspring comparisons, 31 mother – child comparisons and 53 comparisons among siblings. DNA was extracted directly from biopsy samples. We PCR amplified and sequenced fragments from three housekeeping genes (Ure1, UreC and MutY) spaced approximately 4000, 75000 and 79000bp apart in the published H. pylori strain 26695 genome. Sequences of UreC were obtained from both antrum and corpus samples to test for multiple genotypes within stomachs.
Results Over 95% of biopsy samples yielded clear single sequences. In all but one case antrum and corpus sequences were identical, indicating that a single H. pylori genotype dominates in most stomachs. Phylogenetic analysis revealed highly unresolved gene trees composed of four genotype clusters. Individuals within families were scattered across these clusters and did not form distinct groups. There was a slight but highly significant statistical association of closely related genotypes within families. Permutation contingency tests revealed that siblings and housemates were more likely to share related genotypes than any other familial group. By contrast, there was no significant tendency for parent - offspring, mother – child or spouses to share genotypes
Conclusions Our results suggest that H. pylori infection is largely acquired horizontally through association with peers rather than through vertical parent - offspring relationships. The slight but significant bias toward intra-familial transmission is likely due to cohabitation rather than pedigree relatedness. This study also highlights the dilemma of explaining both the high rate of recombination and the presence of a single persistent H. pylori genotype in most infected individuals. One possible solution may be in the timing of recombination events, particularly if these are associated with susceptibility to infection.

THE UTILITY OF HELICOBACTER PYLORI STOOL ANTIGEN TESTING IN A SECONDARY REFERRAL SETTING
F Weilert, S Islam, M Azurdia, R Babington, G Dickson, AC Smith
Gastroenterology Unit, Waikato Hospital, Hamilton, New Zealand

Conventionaltesting for Helicobacter pylori (H.pylori) with established tests includes serology, 14C urease breath test (UBT) and gastroscopy. Each test has different utility when considering sensitivity, specificity, cost and ease of access to the test. We investigated the use of H.pylori stool antigen test (HpSAg) in patients referred for gastroscopy. The diagnosis of H.pylori was established using urease test, histology and a HpSAg. If the histology and/or urease test was positive the patient received triple therapy (clarythromycin, amoxicillin and omeprazole for 7 days). Six weeks following treatment, eradication was established by UBT and a second HpSAg test. From May 2002-May 2003, 127 patient underwent gastroscopy, mean age 48 years, M:F ratio 60:67. Of these 107/127 (82.3%) were born in New Zealand with 11/127 (8.7%) Maori, 3/127 (2.4 %) Pacific Islander. Indication for gastroscopy according to symptoms were reflux 73/127 (57.5%), dyspepsia 65/127 (51.2%), abdominal pain 65/127 (51.2%), weight loss 38/127 (29.9%), iron deficiency 34/127 (26.6%) and suspected coeliac disease in 9/127 (7.1%). Risk factors for peptic ulcer disease were smoking 30/127 (23.6%), alcohol 18/127 14.2%) and current or recent NSAID use 62/127 (48.8%). Pre-treatment 27/127 (21.3%) patients were positive by histology and/or urease test. Of the available HpSAg tests17/23 were positive (sensitivity 73.9%) and 85/91 negative specificity 93.4%). The PPV was 73.9 and NPV of 93.4%, respectively. Post-treatment 3/16 (18.75%) UBT were positive and were considered treatment failures. PPV of HpSAg was (2/2) 100% and NPV (12/13) 92.3% with sensitivity 2/3 (66.7%) and specificity of 12/12 (100%). In our setting HpSAg test is useful pre-treatment with good NPV but lacks sensitivity. Post-treatment it is comparable to UBT with good NPV and PPV. It is readily available and cheaper than gastroscopy or UBT based testing. The incidence of treatment failures using clarithromycin based therapy is of concern.

SIGNIFICANCE OF COX-2, C-MYB AND C-MYC MRNA EXPRESSION IN THE BARRETT'S METAPLASIA (BM)-DYSPLASIA-CARCINOMA SEQUENCE.

C van Rensburg[1], C Daniels[1], N de Villiers[2], C Wright[1], M Kidd[1], G de Jongh[1], Lana[2] and M Kotzé[2]
GI Unit Tygerberg Hospital and the University of Stellenbosch[1], GeneCare, Cape Town[2]

Background BM is related to chronic gastro-esophageal reflux disease (GERD) and is triggered by an unknown mechanism.
Objective To ultimately incorporate a panel of well-characterised genetic markers with epidemiologic risk factors, reflux symptoms, and endoscopic and histologic findings to stratify a patient's risk, thereby facilitating patient management. Materials and methods: COX-2, c-myb and c-myc mRNA expression were measured using a quantitative reverse transcription- PCR method in specimens of BM (n=10) and matching squamous esophageal tissue, squamous esophageal tissue of patients with erosive oesophagitis (ERD, n=10), non-erosive oesophagitis (NERD, n=10) and normal controls (n=10). The Kruskal-Wallis test and 0.95 bootstrap confidence intervals were used to identify significant differences in expression amongst groups. Results: Demographic data were comparable. The COX-2 expression was increased in 4 subjects, 3 with BM in the abnormal tissue and one with ERD. The median levels of c-myb mRNA expression were significantly higher in BM epithelium than in matching control epithelium ($P < 0.05$). c-Myc Mrna levels were not significantly increased in any group.
Conclusion In the South African study cohort c-myb appears to be a good molecular marker for BM. Failure to demonstrate increased COX2 or c-myc m-RNA levels may be related to the low prevalence of BM in our predominant non-Caucasian population.
This research was funded with the AstraZeneca- SAGES2004 award.

LAPAROSCOPIC NISSEN FUNDOPLICATION - A LONG TERM PROSPECTIVE FOLLOW UP

AK Cariem, MD Callanan, PC Bornman
Gastrointestinal Clinic,Surgical Gastroenterology, Groote Schuur Hospital, University of Cape Town

Aim To assess the long term outcome of 94 patients who underwent laparoscopic Nissen fundoplication (LNF) for gastro oesophageal reflux disease (GORD), with special reference to recurrent GORD and dysphagia
Patients and Methods 94 patients who underwent LNF for GORD over a 3year period (1993-1996) were prospectively followed up to assess their long term outcome in terms of recurrent GORD and dysphagia, including a subgroup of patients who had pre-operative dysmotility. Dysmotility was defined as % peristalsis of <60% and /or mean distal oesophageal pressure during 10 wet swallows of <40mmHg. Endoscopy was performed in patients with recurrent symptoms. Severity of dysphagia was assessed according to a visual analogue score (VAS) (0-10).
Results The mean age of the 94 patients was 43years (15-71), 50 males, 44 females. Six patients were lost to follow-up immediately after surgery.
Table 1 shows the incidence of dysphagia and recurrent GORD at various stages of follow-up and **Table 2** depicts pre-operative oesophageal motility function in patients who developed dysphagia and recurrent GORD post operatively.

Table 1

Clinical outcome: 94 patients			
Follow-up	Number	Dysphagia*	Recurrent GORD
3mth	88	21(2)	6
1year	64	6(1)	4 (2 lost)
2-4year	50	3	5 (1 new)
5-10year	45	1	7 (2 lost, 4 new)
*VAS > 3 or ( ) revision surgery			

Table 2

Outcome according to pre-operative dysmotility			
	Number	Abnormal	Normal
Dysphagia	21*	6	13
Recurrent GORD	11	5	6
*no manometry on 2 patients			

The overall GORD recurrence rate with a median follow up of 5 years was 11 (12.5%) and 3 patients (3.4%) required revision surgery for severe dysphagia.
Conclusion LNF provides effective long-term control of GORD in the majority of patients. Pre-operative dysmotility does not affect outcome both in terms of recurrent GORD or dysphagia.

FATTY ACID PROFILE IN COLON ADENOCARCINOMA AND OESOPHAGEAL SQUAMOUS CELL CANCER BIOPSIES FROM HUMAN PATIENTS.

S. Abel[1], C.J. Van Rensburg[2], G. Rossouw[3], E. Wilken[2], F.C. Kruger[2], C.M. Smuts4 and W.C.A. Gelderblom[1].
[1]PROMEC Unit, [4]Nutritional Intervention Research Unit, Medical Research Council, P.O. Box 19070, Tygerberg. [2]Department of Gastroenterology, [3]Department of Thoracic Surgery, Tygerberg Hospital, Tygerberg, 7505, South Africa.

Introduction Deregulation of cell growth and survival in cancer development has been linked to an altered fatty acid (FA) metabolism, especially regarding the n-6 and n-3 FA. These alterations are linked to the modulation of membrane structure and cellular oxidative status which lead to changes in membrane function, activity of enzymes and signaling pathways.
Methods Surrounding and tumour biopsies were collected from consenting human patients with colon adenocarcinoma (CA, n=16) and oesophageal squamous cell cancer (SCC, n=26) and analysed for FA content.
Results A similar pattern of change in FA profile was observed in both cancer tissue types compared to the respective surrounding involving an increase in n-6 and n-3 FA, although the changes tended to be more subtle in CA. Comparison between the two tissue types also showed differences. In the SCC the total n-6 and n-3 FA increased in phospholipids phosphatidyl-choline (PC) and –ethanolamine (PE), whereas in CA the n-6 FA tended to increase only in PC.
Conclusion Modulation of the FA profile, especially arachidonic acid as a substrate for n-6-derived prostanoids, with dietary FA could be an important dietary tool in altering the growth characteristics of cancer cells.

TRANSPLANTATION OF HEPATOCYTES – TEMPORARY ELIMINATION OF SCAVENGER CELLS PREVENTS EARLY LOSS OF GRAFTED CELLS

Wesolowska A., Olszewski W.L., Durlik M., Z. Machowski
Dept. of Surgical Research & Transplantology, Medical Research Center, Polish Academy of Sciences, Central Clinical Hospital, Ministry of Internal Affaires, Warsaw, Poland, Dept. of Surgery, Medunsa Polokwane Campus, Polokwane

Clinical hepatocyte transplantation (HCtx) awaits solution of problems as early elimination from the site of implantation. The process of destruction of locally implanted HC resembles the scavenging phase of wound healing.
Aim We created a protective period for the tx HC to adjust to the site of implantation by elimination of scavenger and NK cells. To stimulate tx HC function partial hepatectomy and bile duct ligation were carried out.
Methods Recipient of HC was irradiated 8Gy, 3 d later received i.v. syngeneic bone marrow cells and 1 mg/kg anti-asialoGM1 inhibiting cytotoxicity of NK cells. Forty % of liver was removed and bileduct was ligated. HC in suspension 107 were injected into spleen. Splenocytes from rats after in vivo irradiation and

treatment with AAGM1 antiserum were isolated for rosette tests. Groups. 1. HC were transplanted into spleen. Histology was perfor med on days 3, 7, 14, 28 and 90. 2. In vitro splenocyte-HC rosette formation rate and HC lysis in rosettes was measured.
Results Group 1. Normal HC were observed 3 and 7 d after tx. On d 7 and 14 bile canaliculi were formed. In non-treated controls only single HC could be found. No accumulation of mononuclears including NK cells could be seen. All adjacent spleen cells were arranged in a normal pattern although their density was low. After 90 d spleen at site of HCtx was of reddish color, hard and did not resemble splenic tissue. Multiple HC forming trabeculae with glycogen granules and bile canaliculi could be seen. In some rats without ligated bile duct no bile canaliculi could be found. Group 2. Few in vitro-formed HC-splenocyte rosettes were observed after 2 h whereas in non-treated controls 60±8 % of HC were found in rosettes. The percentage of lysed HC in rosettes was 72±16%.
Conclusions Temporary elimination of scavenging and NK cells from spleen and stimulation of hepatocyte function by partial hepatectomy and bile duct ligation resulted in protection of the tx HC and their formation of trabeculae and bile ducts. Spleen mononuclear cells from recipients treated by irradiation and AAGM1antiserum formed few HC-splenocyte rosettes and were not cytotoxic. Immunoprotection of tx HC is necessary.

THE CORRELATION OF SERUM ALT LEVEL AND AST/ALT RATIO AND THE HISTOLOGICAL TYPES IN PATIENTS WITH NONALCOHOLIC FATTY LIVER DISEASE (NAFLD)

FC Kruger[1], C Daniels[1], G Swart[2], CJ Van Rensburg[1], M Kidd[3], P Hall[4]
[1]Gastroenterology and Hepatology Unit, Dept of Internal Medicine, Faculty of Health Sciences US , [2]Dept of Anatomical Pathology, Faculty of Health Sciences US, Center for Statistical Consultation US, [4] Division of Anatomical Pathology, UCT.

Introduction Raised liver enzymes are often used as an indicator to biopsy patients with suspected NAFLD. Types 3-4 of NAFLD are associated with a progressively worse prognosis. Aim: To correlate the ALT level and AST/ALT ratio of patients with NAFLD, confirmed on histology, with their different types of disease.
Methods The serum ALT level and AST/ALT ratio of 31 patients (9 male, 22 female, mean age 52 years) with NAFLD were correlated with their histological type of disease (type 1-4)
Results The mean ALT level for patients with type 1 (n=8) was 55.12 (36.6-73.6), type 2 (n=6) 79.5 (58-100.8), type 3 (n=12) 53.25 (38-68.33), type 4 (n=5) 136.6 (113.2-159.9). There was no statistical difference between the mean ALT level for types 1 to 3; however, the difference was statistically significant when the mean ALT level for type 4 was compared to the other 3 types. The AST/ALT ratio for type 1 (n=8) was 0.73 (0.59-0.87) and type 4 (n=5) 0.77 (0.58-0.96). This difference was not statistically significant.
Conclusion The AST/ALT ratio is not useful to determine the underlying NAFLD type and the mean serum ALT does not necessarily reflect the underlying type of NAFLD, though it was significantly increased in type 4.

NATURAL HISTORY OF HEPATITIS C VIRUS INFECTION: FACTORS AFFECTING FIBROSIS PROGRESSION

John Chin, **Frank Weilert**, Nadir Hasan, Anne Currie and Anthony Smith
Waikato Gastroenterology Department, Hamilton, New Zealand

A cross-sectional study was designed to describe the natural history of fibrosis progression in chronic HCV infection and to validate risk factors that have previously been shown to be associated with advanced disease. A systematic review of patients referred between Nov 2000-Nov 2002 was undertaken. A total of 69 percutaneous liver biopsy were assessed using METAVIR scoring system for HCV and steatosis was graded separately. Fibrosis progression was calculated using fibrosis stage/duration of infection (years). Time to cirrhosis (years) was calculated as 4/fibrosis progression per year. Fibrosis staging was scored as F0 in 30/69 (43.5%), F1 in 11/69 (15.9%), F2 in 16/69 (23.2%), F3 in 9/69 (13%) and F4 in 3/69 (4.3%). Mean fibrosis score was 1.19 (1.18-1.20). Steatosis was scored showing grade 2or 3 steatosis associated with genotype 1 in 2/31 (6.5%) and genotype 3a in 10/29 (34.5%), respectively. Patients with genotype 2 or 4 all had grade 0 or 1 steatosis. Age of infection or age at biopsy shows a progressive linear increase in mean fibrosis scores of 0.333 (duration 11years), 0.933 (11-20yrs), 1.381 (21-30 yrs), 1.83 (31-40yrs) with p<0.001 espectively (Wilcoxen test). Gender difference showed fibrosis progression score of 0.0855 (CI: 0.0834-0.0875) for males and 0.0448 (CI: 0.0438-0.0459) for females, p<0.001. Alcohol consumption was analysed showing when "no" alcohol history was compared to "any" alcohol history the mean fibrosis score was 0.01388 (0.0133-0.0145 compared with any alcohol at 0.0792 (CI:0.0776-0.0807), p<0.001. No correlation was found between fibrosis and genotype, mode of infection or steatosis. Histological progression is correlated with duration of infection, alcohol consumption and gender. Fibrosis progression is not associated to genotype, mode of infection or steatosis.

AN INVESTIGATION INTO THE METABOLIC ACTIVITY OF HEPATOCYTES IN THE UP-CSIR, RADIAL-FLOW BIOREACTOR, IN THE PRESENCE OF A PERFLUOROCARBON OXYGEN CARRIER

Nieuwoudt M.J., Moolman F.S., Van Wyk A.J., Kreft E., Olivier B., Stegman F., Vosloo J., van der Merwe S.W.
University of Pretoria and CSIR, Pretoria, South Africa.

Introduction The Bioartificial Liver Support System [BALSS] of the Univ. of Pretoria and CSIR includes a large volume bioreactor with a polyurethane foam [PUF] matrix. Reactor design is optimized to allow for even flow. The low O2 carrying ability of plasma and erythrocyte removal is limiting in high cell density situations, as may be when a patient in Acute Liver Failure [ALF] is connected to a plasma perfused BALSS. Thus, a blood substitute perfluorooctyl bromide [PFOB], is included in the BALSS circuit. Since data on the function of 3-D hepatocyte cultures exposed to PFOB is lacking, we present the results of eight 7day long trials investigating this.
Methods Porcine hepatocytes were seeded into a circuit including a bioreactor, oxygenator, reservoir, sample port and pump. Cells aggregated in the matrix and medium was changed every 24 hours. Culture flasks ran parallel. Daily samples were taken of gases, O2 uptake, glucose, lactate, pyruvate and liver enzymes. Clearance/production studies were conducted identically in each trial. On termination, electron microscopic or isotope imaging examined the presence or distribution of cells in the matrix
Results Lidocaine clearance was 2.8 µg/hr/106cells, while only 0.6 ug/hr/106cells in flasks. Urea production was 148.9 µg/hr/109cells, while only 20.2µg/hr/109cells in flasks. Albumin production was 21.9 ug/hr/106cells. Our values compare favorably with reactors perfused without PFOB and static cultures. Daily sampling showed that PFOB was not harmful to cell function. Our calculations predict that in hypoxic environments PFOB will strongly benefit metabolic activity. Imaging confirmed that large hepatocyte aggregates formed and were distributed according to flow through the matrix
Conclusion The PUF matrix is an effective support for hepatocyte aggregation. The reactor demonstrates metabolic activity in the presence of PFOB, which compares well with that of flask cultures. The reactor shows promise for application in a BALSS when treating ALF patients.

A PILOT STUDY TO EVALUATE THE ROLE OF SERUM LIPIDS AND LDL PARTICLE SIZE AS IN DISEASE SEVERITY IN SUBJECTS WITH NAFLD

FC Kruger[1], C Daniels[1], G Swart[2], CJ Van Rensburg[1], M Kidd[3], P

Hall[4], AD Marais[5]
[1]Gastroenterology and Hepatology unit, Dept of Internal Medicine, Faculty of Health Sciences US , [2]Dept of Anatomical Pathology, Faculty of Health Sciences US, Center for Statistical Consultation US, [4]Division of Anatomical Pathology, UCT, Internal Medicine Lipid laboratory,UCT

Introduction The more advanced types of NAFLD are associated with a higher triglyceride (TG) concentration. Insulin resistance plays a key role in the proposed pathogenesis of the disease and is associated with a higher concentration of TG and small density LDL (LDLβ). LDLβ may be implicated in oxidative stress in the liver, thus leading to more severe damage.
Aim This is a pilot study to evaluate the association of LDL, TG and LDLβ with the different histological types of NAFLD.
Methods Fasting lipograms were performed on 31 patients (9 male, 22 female, mean age 52 years) with confirmed NAFLD on liver biopsies. LDL size was determined by non-denaturing gradient gel electrophoresis. The results were grouped according to NAFLD type.
Results The mean TG (2.13 ± 1.06) and LDL (3.39 ± 0.85) level was raised for all 4 types. Only types 1 (n=) and 3 (n=) were compared for LDLβ due to small numbers in the other groups (type 2 n =4, type 4 n =3). There was a tendency towards a higher TG level in types 3 and 4 compared to the others, but this was not statistically significant. The distribution of LDLβ was not significantly different and compares with about 15% for normal adults.
Conclusion: This small study did not reveal significant differences in TG and LDLβ levels in NAFLD, but further studies need to be done to establish the role of triglyceride and LDLβ in the pathogenesis of NAFLD.

SCHISTOSOMIASES: THE COMMONEST CAUSE OF VARICEAL BLEEDING IN DURBAN

NM Naidoo, B Singh, AE Simjee
Gastrointestinal Unit, King Edward Hospital and University of Natal

Regardless of underlying pathology variceal bleeds accounts for the significant mortality in portal hypertension. This audit was undertaken to evaluate the pathology of variceal bleeding in a GI service in Durban.
Materials and methods Between Jan 2000 and Dec 2003 patients with upper gastrointestinal bleeding endoscopically confirmed to be variceal in origin were included in the study undertaken at the GI Unit at King Edward VIII Hospital, Durban. The management protocol was based on guidelines from Baveno Consensus. Following initial endoscopic control patients were placed on a long-term sclerotherapy programme of weekly injection until varices were eradicated. If acute control failed balloon tamponade was used and endoscopic control reattempted. Emergency stapled transaction was undertaken if endoscopic control was unsuccessful. A splenectomy was added in selected patients. Liver biopsy was done during the course of admission for the index bleed or intra operatively in patients that require emergency stapled transection.
Results During this period 28 patients presented with symptomatic oesophageal varices.16 were female. The mean age was 28 (14-65).

Aetiology	Schistoso-miases	Portal Vein Thrombosis	Alcoholic Cirrhoses	Non Alcoholic Cirrhoses
N = 28	12	5	6	5
Acute Sclero Failure	2	1	1	1 (died)
Esoph. Transect.	2	1	1	
Splenectomy	2			
Mortality		1	1	1
Successful sclero: Programme	10	4	1	1
Lost to Sclero Programme			5	2

There were no procedure related complications. Portal Hypertensive Gastropathy developed in 4 patients 1 of which bled significantly but was medically controlled.
Conclusion The predominant aetiology of symptomatic varices at KEVIII Hospital is Schistosomiases. There was successful eradication of varices in all 16 patients that completed a sclerotherapy programme.

DO MUTATIONS IN THE PRSS1 AND SPHINK1 GENES PLAY A ROLE IN THE DEVELOPMENT OF PANCREATITIS IN SOUTH AFRICA?

E Fredericks*, D Levin+. J Krige+, JNP De Villiers‡ , MJ Kotze‡,
*Greenacres Hospital Port Elizabeth, † GSH/UCT Cape Town, ‡Genecare, Christiaan Barnard Memorial Hospital, Cape Town.

Introduction Pancreatitis, both acute and chronic, is common. The causes of pancreatitis are well documented, but the underlying mechanism(s) responsible for disease initiation and progression remain obscure. Recently, hereditary pancreatitis, associated with certain genetic mutations has been described.
Aim To assess the role of mutations in the PRSS1 and SPINK1 genes in the development of pancreatitis in a South African patient cohort.
Method Consecutive patients admitted with acute pancreatitis (clinical presentation + serum amylase twice normal) were asked to participate. Patients with alcohol induced chronic, calcific pancreatitis were recruited from GIT clinics of Groote Schuur Hospital (GSH) and Port Elizabeth.
Results
Acute: 15 pts were enrolled. 2/15 (13.3%) had a genetic abnormality.

AGE (mean)	SEX (m:f)	Family Hx	Prev attack
41.1	9 : 6	1 (6.7%)	7 (47.1%)

PRSS1 mutation, R122H, was not detected in this study population. SPINK1 mutation, N345, was detected in a homozygous state in 1 individual, and P55S in a heterozygous state in 1 individual.
Chronic: 11 pts in total. No genetic abnormality detected.

AGE AT DIAGNOSIS	AGE NOW	SEX (m:f)	BMI	EtOH	SMOKE	Family Hx
42.9	57.81	10:1	21.69	2 (18.2%)	8 (72.3%)	1 (9.1%)

Mutations R122H and N345 were not detected in this study population. The C58C polymorphism was detected in 1 patient in a heterozygous state.
Conclusion The R122H mutation appears to be uncommon in South African patients with pancreatitis. SPINK1 mutations N345 and P55S may underlie the disease in a minority of patients with acute pancreatitis, in whom genetic testing could facilitate clinical management.
Genetic mutations appear not to contribute to the development of chronic pancreatitis.
Research supported by a Solvay/SAGES award

Monday 9 August, 09h00 - 10h00
Venue: Roof Terrace
Chair: J Garisch/T Madiba

ORALS

GENOMICS AND THE GASTROENTEROLOGIST/SURGEON: FAMILIAL COLORECTAL CANCERS

Raj Ramesar, Ursula Algar, Rebecca Felix, Paul Goldberg
MRC Human Genetics Research Unit, Division of Human Genetics and Surgical Gastroenterology Unit, Groote Schuur Hospital and University of Cape Town

The recognition of genetic predisposition to colorectal cancers (or indeed any other disease) is an important potential aide to the clinician in the management of disease for two reasons: (1) there may be a clearer idea of the disorder remerging as metachronous disease, as well as indicating other tissue that may be at risk, and (2) the potential for presymptomatic testing and clinical screening as part of a more effective management of disease in those at high risk. To date, our research has focussed on: • Assessment of the genetic basis of colorectal cancers in the Western Cape and Northern Cape Provinces of South Africa • Investigation of the sequence of molecular genetic changes that lead from neoplasm to malignancy in colorectal cancers • Implementation of a clinical management protocol (which has been approved by the institutional ethics committee) based on presymptomatic identification of those in families/communities at high risk A total of almost 1200 individuals from 320 families have been recruited onto the project. Using extant genetic technology, a wide range of germline genetic defects in the genes hMLH1, hMSH2 and hMSH6 have been identified in about 10% of families, where the proband was affected with nonpolypotic colorectal cancer, before 50 years of age. Genealogical tracings showed an average of 55 individuals deemed to be at risk per family (with a range of 3-289). The majority of mutation-positive individuals are enrolled in a clinical screening programme involving the Surgical Gastroenterology Unit at Groote Schuur Hospital and Tygerberg Hospitals, and their outreach programme into the Northern Cape Province. There is little doubt that the current screening programme will reduce morbidity and mortality. Using data from our investigations, this presentation will highlight the value of recognising the heterogeneity inherent in cancers, and emphasise the growing role of genetics in any cancer management programme aimed at improving outcome.

SENSITIVITY AND SPECIFICITY OF SURVEILLANCE PROGRAM IN HNPCC FAMILIES

Dr D.W.Anderson, Prof P.Goldberg, Sr U.Algar, Dr R.Ramasar
Department Colorectal Surgery, Groote Schuur Hospital

Colonoscopy is the gold standard in surveillance for colorectal carcinoma. This service is provided together with pedigree analysis, predictive gene testing and histopathological analysis by the Departments of Colorectal Surgery and Human Genetics.
Aim To determine the sensitivity and specificity of surveillance colonoscopy in Hereditary Non-polyposis Colonic Carcinoma (HNPCC).
Method Definitions: Surveillance colonoscopy is any colonoscopy following a negative screening colonoscopy in a patient not known to have colorectal carcinoma. Positive colonoscopy has biopsy proven colorectal dysplasia or adenocarcinoma. A search was conducted of the prospectively collected data-base of the Departments of Colorectal Surgery and Human Genetics for patients with mutations predisposing to HNPCC, who had entered the surveillance program following a negative screening colonoscopy. The detection rates were ascertained regarding significant colonoscopic findings, patient compliance, surgical results and recurrance. RESULTS Sixty-three patients with positive predictive testing had a negative screening colonoscopy and entered the surveillance program. This group comprised twenty-four males, thirty-nine females and the average age was thirty-seven years. A total of 172 surveillance colonoscopies were performed between 1988 and 2004. 168 of the colonoscopies were reported as complete (97.67%). These were followed by either a barium enema or repeat colonoscopy within one month. The median interval between surveillance colonoscopies was twelve months. Fourteen patients had a positive surveillance colonoscopy, on average being the third surveillance colonoscopy. The lesion was confirmed following histopathological analysis of the resected specimen in eleven of the patients. The compliance rate was 98.41% with only one patient absconding. This patient presented seventy-one months later with obstructive colon cancer. No patients were lost to follow-up and only one patient of the whole group died from metastatic disease two years following surgery. The sensitivity and specificity of this surveillance colonoscopy program for HNPCC was 100% and 96.08% respectively.

EFFECTS OF TEGASEROD IN TREATMENT OF FEMALE PATIENTS WITH CONSTIPATION-PREDOMINANT IRRITABLE BOWEL SYNDROME. (IBS-C)

Dr H.R.Schneider
Milpark Hospital, Johannesburg.

Aims The primary objective was to determine the effect of tegaserod 12mg/day on the Quality of Life in female patients with IBS-C
The secondary objective was to determine the efficacy of tegaserod 12mg/day in female patients with IBS-C
Methods The study was performed as a prospective open-label, multi-centre study by gastroenterologists, surgeons and gynaecologists, throughout South Africa.
The diagnosis of IBS-C was based on the Rome II criteria.
The study consisted of a 2 week baseline period (treatment free period - rescue medication was allowed) and then a 4 week treatment period with tegeserod 12mg/day. The IBS-Quality of Life questionnaire (a validated instrument specific to IBS to assess the impact of IBS and its treatment on the patient) was completed at entry, after the 2 week baseline period and at the end of the study. Patients were asked to keep a diary card and record daily IBS symptoms, and weekly overall assessment relief.
Results 242 patients, from 36 centres were recruited for the study, with 210 completing and thus evaluated in the QoL and efficacy analyses.
Most patients were Caucasian (78.1%), with mean age 38.01y (± 10.91).
1. Quality of Life analysis: Overall QoL improved significantly ($p<0.001$)after 4 weeks of tegaserod treatment. Subscale analysis on the IBS QoL showed significant improvement in all categories.
2. Efficacy analysis: Overall symptom relief reported in 68.7% at the end of 4 weeks treatment (95% CI 62.0-75.4). Significant improvement was reported in the number of bowel movements, stool form, straining at stool, sense of incomplete evacuation, abdominal pain and bloating. Significant improvements were seen in all symptoms as early as the first week of treatment with tegaserod, and sustained throughout the 4 weeks.
Adverse events. The most common adverse events suspected to be related to tegaserod were diarrhoea in 6 subjects, nausea in 8, abdominal pain in 4 and headache in 23. 4 SAE's were reported, none suspected to be related to the use of tegaserod.
Conclusions egaserod 12mg/day in females with IBS-C resulted in a significant improvement of IBS quality of life scores.
1. Overall symptom improvement was seen in 68.7% of subjects
2. The side effect profile was similar to that seen in previous studies, and no drug-related SAE's were reported.

This study was supported by Novartis South Africa

CAN 18F-FLUORO-DEOXY-GLUCOSE POSITRON EMISSION TOMOGRAPHY BE USEFUL IN DETECTING ENTEROPATHY-ASSOCIATED T-CELL LYMPHOMA IN REFRACTORY COELIAC DISEASE?

Muhammed Hadithi, Emile Comans, Roel Heijmans, Marie von Blomberg, Joost Oudejans, Otto Hoekstra, and Chris Mulder.
Vrije Universiteit Medical Centre. Amsterdam, the Netherlands.

Background and aims A minority of unresponsive coeliac patients (refractory, RCD) to gluten free dieet can evolve further into into enteropathy associated T-cell lymphoma (EATL) of the intestine. A recent report suggested a promising role for 18F-fluoro-deoxy-

glucose positron emission tomography (18F-FDG-PET) in diagnosing and imaging EATL. In a pilot study, we enrolled patients with RCD and EATL to assess the value of this technique in this clinical setting.
Patients and methods Non-responsive coeliacs referred to our tertiary referral hospital for further evaluation underwent 18F-FDG-imaging. During one year, 12 patients (mean age 58; F/M 5/7) were included. All had Marsh III villous atrophy (one submucosal collagenous band); serology was positive in 5; 8 were DQ2 heterozygous, 3 DQ2 homozygous, and one patient carried both DQ2 and DQ8 alleles; average percentage (±SD) of monoclonal T-cells in RCD & EATL was 40% (± 30) & 58% (± 31) respectively.
Results In RCD patients (n=6), although abdominal CT-scan showed lymphadenopathy in two patients, the 18F-FDG-PET was normal in 5 and showed diffuse moderate uptake in the small intestine in one. On the other hand, in EATL patients (n=6), CT-scan showed abnormalities in 5 patients (like lymphadenopathy, thickened intestinal wall or a tumor) and 18F-FDG-PET was abnormal in all patients (showing focally intense uptake in small intestine in 5 and diffuse moderate uptake in one). Histological analysis of the resected samples confirmed the diagnosis of EATL in all 6 patients.
Conclusion These preliminary results, despite the small number of subjects studied, indicate that 18F-FDG-PET is at least as sensitive for diagnosing and imaging EATL as conventional CT-scan analysis. Additional studies are needed to determine whether 18F-FDG-PET is more sensitive than CT-scan analysis for early detection of EATL in RCD.

RETAINED COLORECTAL FOREIGN BODIES: A MANAGEMENT ALGORITHM
DL Clarke, I Buccimazza, F Anderson, SR Thomson.
Department of Surgery Addington Hospital and the Nelson R Mandela School of Medicine.

Introduction Retained colorectal foreign bodies are not uncommon especially in busy urban centres. We have prospectively documented our experience with this problem and have attempted to devise a management algorithm for this problem.
Methods A prospective data-base and photographic record of patients who presented with retained colo-rectal foreign bodies at our institution has been maintained since 1995. Information regarding the foreign body, clinical presentation and extraction technique were documented.
Results: All 13 patients were male: age range 2-66 years. Seven were Caucasian 4 African and 1 Asian. The foreign bodies included a penknife, an aerosol deodorant spray can, a blue plastic tumbler, a plastic bag containing two bank-notes and some marijuana, a plastic packet containing fish hooks, a penlight torch, a broomstick, a battery powered vibrator, a primus stove, a cap of an aerosol can, a piece of wire, a piece of hosepipe wrapped with wire and an iron bar. They entered the alimentary tract for a variety of reasons. Anal autoeroticism (3) concealment (2) attention seeking behaviour (3) accidental(1), assault (2) alleviate constipation (2). Plain radiographs accurately demonstrated the site of the foreign body in 8 patients. Extraction was at laparotomy in the (2) patients with peritonitis and in (3) who required extraction by colotomy. In (7) patients who had trans-anal extraction, removal was only possible under general anaesthesia. In only one instant was retrieval possible in the emergency room.
Conclusion The emergency room physician must confirm the presence of a rectal foreign body. Extraction in the emergency room is usually not possible and patient's with retained rectal foreign bodies should be referred to a or extraction under anaesthesia.

CAN NEW MODALITIES IN SMALL INTESTINAL ENDOSCOPY (WIRELESS VIDEO CAPSULE and DOUBLE-BALLOON ENTEROSCOPY) FILL THE GAP IN EXPLORING THE GUT?
M. Hadithi, A. Al. Toma, D. Heine, M. Jacobs, C. J. Mulder
Department of Gastroenterology, Vrije Universiteti Medisch Centrum, Amsterdam, The Netherlands

Introduction: This study was undertaken to prospectively compare the clinical outcomes of small bowel radiographs, the wireless capsule endoscopy with the double-ballon enteroscopy. An interim analysis from an ongoing study is presented.
Aims and Methods: Patients with suspected or documented small bowel disease were enrolled. The results of barium follow-through, the Given M2A wireless video capsule (Given Imaging Ltd., Yoqneam, Israel) endoscopy and the new double-balloon enteroscopy (Fuji Photo Optical Incorporated Company) were compared in 17 patients thus far included (13 men; mean age, 55.1 yr; range, 30-70 yr).
Results: Barium follow-through was normal in 13 patients and showed small intestinal polyps in 3 patients and jejunal diverticula's in one patient. Capsule endoscopy was normal in 2 patients and showed positive findings in the remaining 15 patients. Average time to evaluate each video was 82 ± 12 minutes. Enteroscopy, performed in an average of 103 ± 30 minutes, was normal 4 and revealed abnormalities in 13. Biopsies, argon coagulation, tattooing and polypectomy was feasible when indicated. One patient reported post interventional abdominal pain that resolved spontaneously. The examination was considered diagnostic in 2 (12%), 15 (88%) and 13 (67%) for the barium study, capsule endoscopy and enteroscopy respectively. Both capsule endoscopy and double-balloon enteroscopy were well tolerated.
Conclusion: Although both the video capsule endoscopy and double-balloon enteroscopy were found to be superior to small bowel radiograph for evaluation of small bowel diseases, these preliminary results show that video capsule endoscopy and double-balloon enteroscopy seem to be complementary to each other. An initial imaging study employing video capsule endoscopy can be followed by interventional enteroscopy when indicated might represent a practical approach. Such assumptions need to be further verified.

Monday 9 August, 10h30 - 11h30
Venue: Roof Terrace
Chair: A Simjee/J F Botha

ORAL POSTERS

H. PYLORI AT JOHANNESBURG HOSPITAL: TRIPLE THERAPY VERSUS QUADRUPLE THERAPY
A Mahomed, P Barrow, K Karlsson
Dept of Gastroenterology, Johannesburg Hospital and University of Witwatersrand

Introduction Eradication regimes used should be locally effective with eradication rates of at least 80% on an intention to treat basis. Clarithromycin based regimes give good eradication rates but the cost of the drug in our setting is high with quadruple therapy being significantly cheaper. Aim: Compare H. pylori eradication rates of clarithromycin based triple therapy vs quadruple therapy with two different dosing regimens in pts with DU, GU, gastritis and duodenitis.
Methods Patients were randomly allocated to one of 3 treatment arms all 7 days duration. A Losec 20mg bd, claritromycin 500mg bd and amoxil 1gm bd. B Losec 20mg bd, bismuth 240mg bd, tetracycline 500mg bd and metronidizole 400mg tds. C Losec 20mg

bd, bismuth 240mg bd, metronidizole 400mg tds and tetracycline 500mg qid. H pylori status reassessed at 8 weeks.
Results 57 pts recruited,19 in each arm. A -10 DU, 5 GU, 2 gastritis and 2 duodenitis. 2 pts lost to follow up, 1 excluded. B-12 DU, 3 GU, 1 duodenitis and 3 with both DU and GU. 3 pts lost to follow up. C-all pts had DU, 5 lost to follow up. Eradication rates of 100%, 50% and 86% were achieved respectively. Rates did not differ for pts with DU alone. Conclusion: Poor eradication rates were achieved when tetracycline is used bd and should not be used bd. Quadruple therapy with QID tetracycline and triple therapy both achieve acceptable eradication rates. In view of the need to re-eradicate 14% in arm C we need to evaluate if this remains the most cost effective regime.

DIFFERENCES IN H.PYLORI ERADICATION IN DU AND NUD PATIENTS

Dr R Ahmed, Dr HR Bhaga, Dr J Omoshoro-Jones, Dr T Nunkoo, Prof R Ally
GIT Unit, Chris Hani Baragwanath Hospital, PO Bertsham, 2013, South Africa

HP eradication may be more successful in DU than NUD patients.
Aim To determine any differences in HP eradication in DU and NUD patients.
Methods Patients found to have either DU/NUD and who were willing to come back for a follow up gastroscopy and biopsy. A total of 20 DU and 9 NUD patients were studied. HP status was assessed using a CLO test on antrum and corpus biopsies at baseline and 8 weeks post eradication. All patients were positive at baseline. Cultures and sensitivities not tested.
Results Of the 20 DU patients, all except one patient was still positive at 8 weeks (19/20 eradicated). Of the 9 NUD patients, 7 were still positive at 8 weeks (2/9 eradicated). The persistent positive DU patient still had a DU. Of the 19 eradicated DU patients, 6 still had a DU at 8 weeks.
Conclusions HP may be more easily eradicated in DU patients compared to NUD patients. The HP in DU patients may be a more virulent strain and therefore more susceptible to eradication. DU patients who were HP negative but still had DU may be using NSAIDs to account for their ongoing DU.

BURDEN OF ILLNESS IN PATIENTS WITH REFLUX DISEASE - EVIDENCE FROM A RECENT COMPARATIVE METHODOLOGICAL STUDY in South Africa.

C. J. Van Rensburg [1], Károly R. Kulich[2], Jonas Carlsson[2], Ingela K. iklund[2]
Gastroenterology Unit, Tygerberg Hospital, South Africa[1]
AstraZeneca R&D Mölndal, Sweden[2]

Objectives To describe the impact of heartburn on patients' Health-Related Quality of Life (HRQL) in South Africa. Design: Survey of patient-reported outcomes and physician-assessed symptoms in consecutive patients with predominant heartburn attending a Gastroenterology Clinic in South Africa.
Outcome measures Patients completed the Afrikaans versions of the Gastrointestinal Symptom Rating Scale (GSRS), the Quality of Life in Reflux and Dyspepsia questionnaire (QOLRAD) and the Short Form Health-36 (SF-36). Physician-assessed frequency and severity of heartburn during the previous 7 days were also recorded.
Results 125 patients with symptoms of heartburn (age: M=46.0 [±12 years]; females= 74%) completed the Afrikaans translation of GSRS, the QOLRAD and the Short-Form-36 (SF-36). Patients were bothered most by symptoms of reflux (mean GSRS score of 4.9, on a scale of 1 [not bothered] to 7 [very bothered]), indigestion (4.0) and abdominal pain (4.0). As a result of their symptoms, patients experienced problems with food and drink (mean QOLRAD score of 3.5, on a scale of 1 to 7, where 1 represents the most severe impact on daily functioning), emotional distress (3.6), impaired vitality (3.7), sleep disturbance (3.8) and impaired physical/social functioning (4.3). This led to impaired overall HRQL across all domains compared to the UK general population. Conclusions: There is consistent evidence that GERD substantially impairs all aspects of HRQL. The study was supported by a grant from AstraZeneca.

DEVELOPMENT OF A MULTI-GENE REAL-TIME (RT-) PCR ASSAY TO STUDY AND MONITOR DISEASE PROGRESSION IN THE BARRETT'S METAPLASIA (BM)-DYSPLASIA CARCINOMA SEQUENCE

CJ van Rensburg[1], **JNP de Villiers**[2] and MJ Kotze[2]
GI Unit, Tygerberg Hospital[1] and Genecare, Christiaan Barnard Memorial Hospital, Cape Town[2].

Background Previous studies have demonstrated that over expression of COX-2, c-myb or c-myc m-RNA levels may predict cancer development in patients with gastro-oesophageal reflux disease (GORD). Identification of molecular alterations critical to the initiation and progression of BM to adenocarcinoma could lead to more effective surveillance and treatment of affected patients. Objective:To develop a multi-gene RT-PCR method for risk stratification within the spectrum of GORD. Evaluation of genetic findings within the context of all other relevant risk factors will facilitate patient management and individualised therapy.
Materials and methods 3 primer sets were designed to measure m-RNA expression of COX-2, c-myb and c-myc genes. c-DNA synthesised from RNA extracted from normal and abnormal tissue of patients with BM were used to validate the novel assay.
Results The real-time PCR test has been optimised for routine screening of COX-2, c-myb and c-myc m-RNA expression levels. Collection of the samples for RNA extraction has been standardised to ensure reliable expression data.
Conclusion A rapid cost-effective assay has been developed that can now be used to determine m-RNA expression levels in patients along the continuum of GORD. Though similar expression patterns were not observed across ethnic groups, our data are in keeping with previous findings which indicate that determination of COX-2, c-myb and c-myc m-RNA expression levels may be clinically useful markers for risk stratification in the Caucasian population.

HIV AND THE UPPER GASTROINTESTINAL SYSTEM

Barrow P H, Mahomed A, Karlsson K
Medical Gastroenterology, Johannesburg Hospital, WITS University

Aim With the role out of ART we expect a change in the gastrointestinal manifestations in HIV. We wish to document the gastroscopy and biopsy findings in HIV +ve patients pre ART in order to compare present findings with those of patients in the future with access to ART.
Methods A retrospective record review of all HIV ELISA +ve patients who underwent gastroscopy and biopsy referred to our clinic over a four month period from Dec 2003 to April 2004. Results: 25 patients were included: 16 male, 9 female, 19 black, 4 white, 1 indian. Average age 39 (22 – 73). CD4 count recorded in 14/25, mean 201(range: 2- 700, median: 141). All 11 patients with no CD4 count recorded had an AIDS defining illness. 8 patients had oesophageal candidiasis, 4 patients had oesophageal ulceration (3 idiopathic, 1 Mycobacterium Tuberculosis) and 3 with nonspecific oesophagitis. 11 patients had gastritis (3 with H. pylori associated gastritis, 8 non H. pylori associated gastritis and 1 CMV gastritis). 4 patients had Kaposi's sarcoma (KS), 2 with Mycobacterium Avium Complex (on duodenal biopsy) and 1 mucormycosis.
8 patients had more than one diagnosis

Conclusion Most HIV +ve pts are treated symptomatically and only those with severe or non resolving symptoms are investigated hence the small number. In these patients who do not have ready access to effective ART we see a broad spectrum of opportunistic diseases. Most of the diagnoses are made histologically, making biopsy mandatory in these patients.

PSYCHOMETRIC VALIDATION OF THE AFRIKAANS TRANSLATION OF THE GASTROINTESTINAL SYMPTOM RATING SCALE (GSRS) AND QUALITY OF LIFE IN REFLUX AND DYSPEPSIA (QOLRAD) QUESTIONNAIRE IN PATIENTS WITH REFLUX DISEASE

Károly R. Kulich[1], **C. J. Van Rensburg**[2], Jonas Carlsson[2], Ingela Wiklund[2] Károly R. Kulich[1], C. J. Van Rensburg[2], Jonas Carlsson[2], Ingela Wiklund[2]
[1]AstraZeneca R&D Mölndal, Sweden[2] Gastroenterology Unit, Tygerberg Academic Hospital, South Africa.

Background Symptoms of heartburn have an impact on health-related quality of life (HRQL). When a questionnaire is translated into a new language, a linguistic validation is necessary but not sufficient unless the psychometric characteristics have been verified.
Aims The aim is to document the psychometric characteristics of the Afrikaans translation of the Gastrointestinal Symptom Rating Scale (GSRS) and Quality of Life in Reflux and Dyspepsia (QOLRAD) questionnaire.
Methods 125 patients with symptoms of heartburn (age: M=46.0, ±12.3; females= 74.4%) completed the Afrikaans translation of GSRS, the QOLRAD and the Short-Form-36 (SF-36).
Results The internal consistency reliability of GSRS ranged from 0.65-0.86 and of QOLRAD from 0.82-0.94. The test-retest reliability of GSRS ranged from 0.62-0.75 and of QOLRAD from 0.71-0.82. The relevant domains of the GSRS and QOLRAD domain scores significantly correlated.GSRS domains of Abdominal Pain and Indigestion correlated (negatively) with most of the domains of the SF-36. The relevant QOLRAD domains correlated significantly with most of the SF-36 domains.
Conclusion The psychometric characteristics of the Afrikaans translation of GSRS and QOLRAD were found to be good, with satisfactory reliability and validity.

E-CADHERIN GENE MUTATIONS IN BENIGN AND MALIGNANT GASTRIC ULCERS

C.A. Steyn, M.J. Kotze, C.J. Van Rensburg
Gastroenterology Unit, Tygerberg Hospital, South Africa1, Genecare (Pty) Ltd.[2]

Background Although it is generally accepted that the incidence of gastric carcinoma is declining, it is still a major health problem. A considerable body of data firmly supports that germline and somatic mutations strongly predispose affected individuals to diffuse-type gastric cancer. E-Cadherin (CDH1), the calcium-dependent cell-cell adhesion molecule plays an essential role in the formation and maintenance of normal function and architecture of epithelial tissues.
Objectives To determine if (CDH1) mutations occur in primary gastric carcinoma in our local population, to determine if (CDH1) mutations occur in benign gastric ulcers, and if detected, the frequency thereof.
Methods This is a pilot study. Twenty-nine subjects referred to the Gastroenterology Unit for upper gastrointestinal endoscopy who had gastric ulcers were biopsied. The Department of Anatomical Pathology made a histological diagnosis on these tissue samples, and tissue was also analyzed for mutations in the (CDH1) gene.
Results Histology revealed that 11 of the 29 patients in this sample had primary gastric adenocarcinomas, 1 had non-Hodgkins lymphoma, and 17 were diagnosed with benign gastric ulcers. In the genetic analyses of these tissue samples, no gene defects were observed. In the entire patient sample, 14 sequence variants were found of which 11 have been described previously. The three novel sequence variants identified were IVS3+5G→A (intron 3), 2082C→A (exon 13), 1239C→T (exon 9).
Conclusion Except for the IVS3+5G→A mutation, which could possibly affect gene splicing, no other potential disease-causing mutations were identified. The data presented in this study represents the initial steps towards identifying (CDH1) gene mutations in the local population. In patients with proven cancer related (CDH1) gene mutations genetic counseling should be offered.

INITIAL EXPERIENCE WITH THE ESTABLISHMENT OF AN OESOPHAGEAL VARICEAL BANDING SERVICE

A Mansoor, DL Clarke, SR Thomson, AE Simjee
Gastrointestinal Unit: Inkosi Albert Luthuli Central Hospital and the Nelson R Mandela School of Medicine

Introduction Endoscopic rubber band ligation has replaced injection sclerotherapy as the procedure of choice in the management of oesophageal varices. Until recently the bander available in the state sector in Durban was a single shot bander. The newly opened Albert Luthuli hospital has allowed us access to a reloadable multi-bander. (Mediglobe Universal Euro-Ligator Set) We established a banding service in July 2003 and we present our initial one-year experience with the procedure and the multi-shot banding device.
Methods We prospectively collected data on all patients referred for banding of oesophageal varices at Albert Luthuli Central Hospital between the period July 2003 to June 2004. All patients had their index bleed controlled at the referral hospital and were subsequently referred to IALCH for elective banding. Ongoing management of their liver disease remained the responsibility of the referring hospital.
Results A total of 16 patients were enrolled in the programme. (11 males 5 females age range 30 to 74 years). Aetiology of the portal hypertension included alcoholic cirrhosis (11), idiopathic cirrhosis (2) PBC (1) portal vein thrombosis (1) and schistosomiasis (1). The physiological profile of the patients was Childs A (11), Childs B (2) and Childs C (3). On average each patient underwent 3 banding sessions. (Range 1-7 sessions) One patient required admission for an episode of bleeding following his initial banding session. He required a blood transfusion but has not bled since. Four patients were lost to follow up. Two patients (both Childs C cirrhotics) died. Three patients have residual small varices and have undergo adjunctive sclero-therapy. In two patients the varices have been completely eradicated and continue on a surveillance programme. Four patients are still on the active banding programme. We experienced technical problems relating to scope diameter setting up the release mechanism and suction.
Conclusion We have overcome the teething problems and are confident that we will be able to extend the banding programme over the next twelve months. We need to integrate the banding service into a holistic multi-disciplinary liver clinic to provide a complete hepatology service to Kwa-Zulu Natal.

MANAGEMENT OF NON-VARICEAL UPPER GI HEMORRHAGE: INTERIM REPORT OF A PROSPECTIVE AUDIT

JAO Omoshoro-Jones, M Fodjo, T Nunkoo, R Ahmed, HR Bhaga, R Ally and MD Smith.
Dept Surgery & GIT, Chris Hani-Bara Hospital, Wits University, Jhb, SA

Introduction Non-variceal UGIH remains a public health problem with a mortality rate of approximately 10%. Age, co-morbid disease and haemodynamic instability remain independent

predictors of outcome. Optimal timing and interventions at endoscopy remain unclear.
Objectives An audit to evaluate current management of UGIH at CH Bara with a view to: i) Formulate optimal management algorithm and ii) create more efficient resource utilization.
Method Over 11-month period (Feb 2003 - Dec 2003), patients with documented non-variceal UGIH were studied. GI fellows (JAO and MFD) and senior Gastroenterologists (3) performed all endoscopies. Current published endoscopic therapy protocols were followed. Data collected included clinical and baseline characteristics, co-morbid disease (ICED System), endoscopic details and interaction. Various outcome measures were recorded.
Results 186 patients (83 males, 86 females) were studied; mean age 53 (13 – 91). Majority 108 (58%) were stable while 61 (33%) were shocked. Possible etiologic/predisposing factors were NSAIDs (85), alcohol (38), previous PUD's (21), Mallory Wise Tears (5), esophagitis (3), coagulopathy (11) and indeterminable in 5 patients. Eight (8) patients were excluded from analysis. Endoscopy performed in 148 (80%) patients, with average time to first endoscopy at 56 hours (range _hr – 10days!). Most endoscopies 79 (53%) were performed delayed (>24hrs). Early endoscopy i.e. within less than 24hrs were 61 (47%). Endoscopy was normal in 75 (51%) while abnormal in the rest. Forty-five (61%) of patients had PUD (27 DU; 18 GU) whilst the other 28 (39%) had gastritis (12); erosions (7); cancer (4) and MWT (5). Of those with PUD, 60% (27) had a second-look scope, with about 52% of these (14) receiving re-treatment. 24 patients underwent surgery either ab-initio (20) or due to failed endoscopy (4). Procedures performed were under-running of bleeders (11, 46%), omental patch (7, 29%), distal gastrectomy (4, 17%) and nothing (3, 13%). Overall morbidity was 6% (11/178) and mortality, 12% (21/178). Mortality was related to shock on admission, re-bleeding, failure of endoscopic therapy and presence of co-morbid diseases.
Conclusion Within the local context, these results compare reasonably with others. However, early endoscopy may enable a more efficient utilization of available resources by ensuring earlier discharge of low risk patients.

PERCUTANEOUS ENDOSCOPIC GASTROSTOMY - THE GROOTE SCHUUR EXPERIENCE (1999-2004)

G Watermeyer*, D Epstein*, S Hlatshwayo*, D Levin*, T Winter**
*Department of Medicine, University of Cape Town, South Africa.
** Division of Digestive Diseases and Nutrition, University of Kentucky, USA

Percutaneous Endoscopic Gastrostomy (PEG) is a simple, efficient means of providing nutrition in patients unable to ingest orally. In spite of documented safety and tolerability, the procedure has met with controversy related to the ethics of feeding terminally ill or demented patients. Several case series have shown 30-day post-PEG mortalities of 10- 20%. This alarming statistic reflects the underlying indication rather than the procedure and emphasizes the importance of identifying patients who will truly benefit.
Aim: To describe and evaluate the Groote Schuur Hospital experience of PEG insertion over the past 5 years and identify the indications, complications and long term outcomes.
Method: A retrospective review of the clinical case notes and endoscopy records of all patients undergoing PEG placement (January 1999 - February 2004)
Results: A total of 36 PEGs were placed. The commonest indications were cerebrovascular accidents (44%), neurodegenerative disorders (17%) and head/neck malignancies (19%). Minor complications were reported in 36%, the commonest of which was peristomal sepsis. Only one death was directly attributable to PEG placement. At study analysis 56% of patients were still alive. The mean survival post PEG was 562 ± 546 days.
Discussion: In this series of 36 PEG placements we have documented favorable morbidity, mortality and long-term outcomes. The number performed is disappointingly small when compared with similar published series and is thought to reflect strict selection criteria, as well as deficiencies in our referral base.

Monday 9 August, 11h30 - 12h30
Venue: Roof Terrace
Chair: C Ziady/O Mwantembe

ORAL POSTERS

VALIDATION AND APPLICATION OF A COMPREHENSIVE MULTI-GENE ASSAY FOR HEREDITARY HAEMOCHROMATOSIS AND AFRICAN IRON OVERLOAD IN THE SOUTH AFRICAN POPULATION

MJ Kotze[1], JNP de Villiers[1], R Thiart[1] and **S van der Merwe**[2]
[1]Genecare Molecular Genetics (Pty) Ltd., Christiaan Barnard Memorial Hospital, Cape Town and Department of Internal Medicine, University of Pretoria, Pretoria.

Background Genetic testing can provide a definitive diagnosis of the hereditary haemochromatosis (HH) and African iron overload (AIO), without the necessity of an invasive liver biopsy. However, gene regions of relevance to DNA-based tests for haemochromatosis frequently contain sequence changes that may interfere with the test procedure and data interpretation.
Objectives The aim of the study was to validate a new strip-assay including 18 mutations in three genes underlying HH or AIO for routine use in the South African population.
Results Positive results for mutations C282Yand H63D in 233 patients previously screened by restriction enzyme analysis, confirmed the accuracy of the strip-assay. Mutations S65C and E168Q were additionally detected in approximately 2% of Caucasians without or with one copy of a common mutation. The haemochromatosis gene mutation V53M and recently identified ferroportin gene mutations were detected in the Black population.
Conclusions The haemochromatosis strip-assay is a valuable tool for accurate diagnosis or exclusion of multiple mutations in a single cost-effective test procedure. Detection of a genetic predisposition for iron overload at an early age could prevent irreversible damage to cardiac, hepatic and endocrine tissue resulting in a wide range of clinical conditions.

CORRELATION OF BODY MASS INDEX (BMI) WITH THE DIFFERENT TYPES OF NON-ALCOHOLIC FATTY LIVER DISEASE (NAFLD)

FC Kruger[1], C Daniels[1], G Swart[2], CJ Van Rensburg[1] ,M Kidd[3], P Hall[4]
[1]Gastroenterology and Hepatology unit, Dept of Internal Medicine, Faculty of Health Sciences US , [2]Dept of Anatomical Pathology, Faculty of Health Sciences US,
Center for Statistical Consultation US,[4] Division of Anatomical Pathology, UCT

Introduction Obesity is associated with NAFLD and is an independent risk factor for liver cirrhosis and hepatocellular carcinoma.
Aim To correlate BMI with the different histological types of NAFLD in order to determine the association with obesity.
Methods Thirty-one patients (9 male, 22 female, mean age 52 years) with biopsy proven NAFLD had their BMI performed at the time of biopsy. BMI is calculated as weight in Kg/ height m2. A BMI > 30 is indicative of obesity and when > 35 indicative of morbid obesity. The mean BMI of the patients in the different types of NAFLD were compared.
Results BMI was increased in 22/31 patients (type 1 n=8, type3

n=4, type 3 n=7, type 4 n=3) with NAFLD. The mean BMI for all the patients was 34.2, whilst for patients with type 1 disease (n=8) it was 40, type 2 (n=6) 31, type 3 (n=12) 33.5 and type 4 (n=5) 30.4. Seventy-five percent (6/8) patients with type 1 NAFLD was morbidly obese compared to none with type 4 disease.
Conclusion Obesity is highly prevalent in South African patients with NAFLD. However, there is no progressive increase in BMI as the histological type worsens.

THE MANAGEMENT OF PANCREATIC PSEUDOCYSTS AT GROOTE SCHUUR HOSPITAL
Apostolou C, Kahn D, Krige JEJ, Bornman PC.
Department of Surgery, Groote Schuur Hospital and University Of Cape Town, Observatory, 7925, CT, S Africa

Aim Multiple treatment modalities are available for the therapeutic drainage of pancreatic pseudocysts with variable results. The aim of this study is to review the treatment options and outcomes in a local tertiary center (Groote Schuur Hospital).
Methods All patients with symptomatic pancreatic pseudocysts admitted to the Liver/Pancreatic unit between January 1997 to May 2004, were included in the study. Multiple variables were analysed including clinical and imaging data (CT and ERCP).
Results Fifty patients were reviewed: 40 men and 10 women. The mean age was 42 years (range: 13-78). Aetiology was ethanol (36), traumatic (5), biliary (4) other (5). Features of chronic pancreatitis were evident in 23 patients. Pseudocyst anatomical distribution and morphology were variable. Persistent pathology after initial conservative management directed further therapy.
Treatment analysis:

Drainage Modality	Attempted	Successful	Percentage	Stay
Percutaneous	11	7	64%	15.7
Endoscopic	28	18	64%	11.1
Open(Surgical)	22	22	100%	19.5

(3 patients treated conservatively)
Average stay was 16.1 days. There were no deaths.
Conclusion: The need for different treatment options stems from the diversity of pseudocysts. Percutaneous drainage has a role in managing infected post-necrotic cysts. Endoscopic drainage appears to be associated with a shorter hospital stay. Open drainage is useful both primarily and following failure of less invasive therapy.

ATYPICAL CYSTIC LESIONS OF THE PANCREAS
De Kock S, Anderson F, Thomson SR, Madiba TE.
Department of Surgery, Nelson R Mandela Medical School, University of KwaZulu-Natal

Introduction Non inflammatory cystic lesions of the pancreas are rare. In the absence of evidence inflammation these lesions pose a diagnostic and management problems. We present our experience with 8 such patients.
Method Seven were female and 1 was a male, age ranged from 27– 59 years. Six presented with upper abdominal pain and two incidentally on imaging. Three had a palpable abdominal mass. Ca19,9 was done on only 1 patient and was normal. One patient had a prior isolated episode of hyperamylasaemia. The remainder had no features to suggest alcohol or gall stone pancreatitis. Four patients showed cystic pancreatic lesions on U/S. All 8 had CT evaluation. In seven the lesion was in the body and tail in the other it was in the head of the gland. The size varied from 2x2cm to 10x12cm. All were deemed potentially resectable.
At exploration six patients underwent left sided pancreatic resection. The spleen was conserved in one and one had a near total pancreatectomy. One patient had a pancreaticoduodenectomy and in the remaining patient , the lesion was only biopsied. Two patients developed postoperative collections one was drained percutaneously and one managed conservatively. Histology revealed : 4 Solid, cystic papillary neoplasms, a Serous microcystic adenoma, a post inflammatory cyst, active TB and a plasmacytoma. At follow up three patients were well at 3 months and 2 were well after 2 years. Follow up on the others are unknown.
Conclusion Atypical cystic lesions of the pancreas are rare and usually occur in females. Though current algorithms favour tissue and fluid sampling of these lesions, resection remains the final arbiter.

VIDEO CAPSULE ENDOSCOPY: INITIAL EXPERIENCE WITH 10 PATIENTS
Dr H.R.Schneider
Milpark Hospital, Johannesburg

Introduction Video capsule endoscopy (VCE) is now the investigation of choice in patients with obscure gastrointestinal bleeding (OGIB), and in patients with suspected Crohn's disease when conventional investigations have been unsuccessful in confirming the diagnosis.
This abstract will consider the demographics, indications, findings and outcome of patients undergoing VCE.
Seven patients underwent VCE for anaemia. M: F ratio 1:1, mean age 59 years (40-84y). Mean haemoglobin 6.2g/dl (5-8.8). The duration of anaemia was 4.4 years (2m-9y). Patients underwent an average of 8.1 upper and lower gi endoscopies prior to VCE. Numerous other investigations had been performed including small bowel follow through, radioisotope bleeding studies and surgery for Meckels diverticulum.
A total of 333 units of blood were transfused, at an average of 47 u/patient. Intravenous iron infusion was administered at an average of 7.7 infusions per patient
Findings 3 patients had gastric lesions with bleeding. Findings included stomal ulceration, watermelon stomach and a polypoid gastric lesion. Crohn's disease in the small bowel was present in 1 patient. Angiodysplasias were found in two patients. In two patients the capsule did not reach the caecum, due to prolonged gastric retention.
Three patients underwent VCE for suspected Crohn's disease. Crohn's was confirmed in 2 patients, and excluded in 1 patient (normal study).
Conclusions.
1. VCE should be considered as the third investigation after negative upper and lower gi endoscopy in patients with OGIB.
2. Previous studies have shown that patients with active gi bleeding or those with anaemia and positive faecal occult (FOB) blood have a higher yield with VCE as compared to those with chronic iron deficiency and negative FOB.
3. Patients having had previous gastric surgery may have gastric retention of the capsule, and may require the capsule to be released in the duodenum.
4. Earlier use of VCE may provide an accurate diagnosis, and can result in significant cost savings.

INFLIXIMAB FOR FISTULIZING AND RESISTANT CROHNS DISEASE
Graeme N Dickson, **Frank Weilert**, Marie-Louise van den Heuvel, Anthony C Smith.
Gastroenterology Unit, Waikato Hospital, New Zealand

Patients with fistulizing and resistant Crohns disease on maximal medical therapy have been treated with infliximab (monoclonal TNF-antibody). We reviewed our experience with this group of complicated patients. A retrospective chart review of 21 patients treated with infliximab between June 2001- December 2002 was performed. Demographic data, medical therapy, pre-treatment screening and investigations, clinical and colonoscopic response rates and treatment related side effects were assessed. Of

the 21 patients, 9 patients had fistulizing and 8 had resistant Crohns disease, with 4 patients treated for rheumatological/other conditions. The male: female ratio was 11:10, with an average age of 34 years. Average number of doses received was 5.9, 4.6 and 4.8 respectively. Of the Crohns disease patients 14/17(82%) were on aminosalicylates, 17/17(100%) on corticosteroids and 17/17(100%) on immunomodulatory drugs prior to initiating infliximab. Pre-treatment screening included CXR in 17/17(100%), autoantibodies in 12/17(71%) and dsDNA in 5/17(24%). Further assessment included colonoscopies in all patients, enterocolysis or Barium follow-through in 4/16(25%). MRI or CT scan was done in 8/9 (89%) of fistulizing Crohns disease. Two patients had adverse events during treatment. One patient experienced wheeze during the infusion and one was diagnosed with advanced HCC during treatment and subsequently died. Clinical response was seen in 12/14(85.7%) while endoscopic response was seen in 6/9(66.7%) patients. Patients with complicated Crohns disease on maximal medical therapy had significant clinical and endoscopic response with infliximab. Surgery was avoided in all patients during the observation period. Pre-treatment screening should include CXR, autoantibodies and dsDNA in all patients. A suggested algorithm for these patients will be developed following this review.

SCREENING PATIENTS WITH HASHIMOTO'S THYROIDITIS FOR CELIAC DISEASE AND VICE VERSA.

M Hadithi, H de Boer, L Verschoor, JBA Crusius, AS Peña, J Kerckhaert, P Wahab, and CJ Mulder.
Rijnstate Hospital, Arnhem and VU University Medical Center, Amsterdam, the Netherlands

Background and Aims The association between coeliac disease (CD) and autoimmune thyroid disease (ATD) has been suggested 30 years ago. Although variable, evidence of higher prevalence rates of ATD in patients with CD and of CD in ATD have been reported ranging from 12% to 29.7% for the former, and 3.2% to 7.8% for the latter. We attempted to investigate this association in a prospective manner in a group of patients with Hashimoto's thyroiditis and in another group of patients with CD. An interim analysis from an ongoing study is presented.
Patients and Methods 61 adult HT outpatients (mean age 45; M:F=8:53), were enrolled in the study from 01-01-2001. Coeliac serology (EMA, tTG, and AGA-IgA) as well as HLA-DQ2/DQ8 was determined. Villous architecture was evaluated according to Marsh classification. Since 01-05-1998, thyroid function test (TSH, free T4) and serology (anti-TPO & -TG) were determined in 160 adult CD patients (mean age 53.7; M: F=28:124).
Results Three patients with HT (4.9%) had positive CD serology; 2 patients were DQ2 heterozygous and one patient was DQ2 homozygote; and all had villous atrophy (Marsh IIIa in 2 & IIIc in 1). All three were overt hypothyroid requiring hormonal replacement. 68% from 47 HT patients carried one of the CD susceptibility haplotypes. Anti-TPO and/or anti-TG was present in 37 CD patients (23%). 14 (38%) were hypothyroid, 15 (40%) subclinical hypothyroid and 8 (22%) were euthyroid. Three had Grave's disease. Twenty-seven were DQ2 heterozygous, 5 DQ2 homozygous, and 5 were heterozygous for both DQ2 and DQ8.
Conclusion Both the prevalence of CD in HT as well as HT in CD establishes the concurrence of these autoimmune disorders. Reciprocal screening for these autoimmune diseases is warranted. A pronounced rate of carrying the characteristic HLA-DQ haplotypes strengthens their close immunogenetic relations.

ABDOMINAL TUBERCULOSIS: A DIAGNOSTIC DILEMMA

WF Rahaman, TV Bisetty, TE Madiba.
Department of Surgery, University of KwaZulu-Natal and King Edward VIII Hospital, Durban

Introduction In the current era of retroviral disease, a clinician is faced with the dilemma of optimal management of patients suspected of abdominal tuberculosis (TB)
Aim To assess the outcome of patients suspected of abdominal TB based on diagnostic criteria.
Patients and Methods A retrospective analysis of 384 in-patient records of suspected abdominal TB cases were reviewed, from 2000-2004 at King Edward VIII Hospital. Age ranged from 1-82 yrs, with an equal sex incidence.
Results Presenting features included abdominal pain (182), weight loss (143), abdominal distension with or without ascites (98), change in bowel habit (95) and anorexia (83).
One hundred and thirteen patients were HIV positive, 21 were HIV negative and the HIV status was not known in the rest. The diagnosis of abdominal TB was made at laparotomy and biopsy (142), by ascitic tap (19), abdominal ultrasound (25), stool AFB (5), CT scan (4), liver biopsy (4), extra-abdominal lymph node biopsy (3), gastric washings (1), rectal biopsy (1), endometrial biopsy (1), peritoneoscopy (1), autopsy (1). Out of the 142 patients who underwent laparotomy there was involvement of mesenteric lymph nodes (100), peritoneum (100), small intestine (50), large intestine (21), liver (21), omentum (15), appendix (11), spleen (7), kidney (5), and uterus (8). Seven patients had atypical presentation requiring laparotomy.
Therapeutic trial of anti-TB treatment was offered to 130 patients and a diagnosis of TB was made retrospectively. There was associated proven pulmonary tuberculosis in 59 patients. Thirty seven patients died during the index admission giving an in-hospital mortality rate of 10%. Complications following surgery were enterocutaneous fistula (3), wound sepsis (2) and MODS (2), intestinal obstruction (2) and septic shock (1). Of the 142 patients who underwent surgery 16 died in hospital (11%). An additional 4 died 3-12 months post-operative during a subsequent admission. The mortality for the patients who were managed without surgery was 9%.
Conclusion Abdominal TB has a varied clinical presentation and in the presence of HIV, these presentations maybe non-specific. Radiological investigations, although not diagnostic, may increase the level of suspicion and, hence earlier institution of therapy. Cytological and histological investigations, while helpful, are invasive. Surgical intervention should be reserved for patients with complications of abdominal TB, those with failed medical treatment and those with non-specific symptoms and signs, in whom the laparotomy is diagnostic. In a subset of patients there may be a role for therapeutic trial of anti-TB treatment, the optimal duration of which has yet to be determined.

THE INFLUENCE OF GENETIC MODIFIERS ON THE AGE OF ONSET IN FAMILIES WITH HEREDITARY NONPOLYPOTIC COLORECTAL CANCER (HNPCC).

R.Felix[1,2], W.Bodmer[2], N. Fearnhead[2], P. Goldberg[3], S. Bartlett[2] and, R.Ramesar[1]
1.Division of Human Genetics, University of Cape Town, South Africa
2.Weatherall Institute of Molecular Medicine, Oxford University, United Kingdom.
3. Surgical Gastroenterology Unit, Groote Schuur Hospital, Cape Town, South Africa

It is becoming increasingly apparent, in the field of human genetics that few human diseases are caused exclusively by a mutation in a single gene. Cancer development and progression is a multiplex process involving numerous primary and "modifier" genes. A "modifier" is an inherited variation that leads to a qualitative or quantitative difference in the disease phenotype. As the knowledge of the influence and involvement of these primary and

secondary cancer genes increases, it should be possible to accurately predict an individual's risk of developing the disorder as a function of both severity of the disorder and the age of onset. Individuals from HNPCC families with identical mutations in the mismatch repair genes *hMLH1* and *hMSH2* do not all exhibit the disease phenotype in the same manner.

In the research programme at UCT/GSH on individuals with colorectal cancer (CRC) under the age of 50 years, a wide range of mutations in the mismatch repair genes (*hMLH1, hMSH2, hMSH6*) have been identified. In the current study, a homogeneous set of individuals (n=96) was investigated, who harbour a nonsense mutation (C1528T) in exon 13 of the *hMLH1* gene. These individuals belong to 13 different families, all from Mixed Ancestry origin. Forty-three percent of these individuals had cancer of the proximal colon and eighty-six percent were diagnosed with CRC under 50 years of age. These subjects were screened for modifying DNA alterations in the *ATM, CCND1, MTHFR, GSTT1, GSTM1,* and *Nat 2* genes. Statistical analyses were performed to identify any significant associations between these polymorphisms and the various phenotypes described. Significant correlations were observed between the null genotype of *GSTM1*, the D1853N polymorphism in *ATM*, the C677T alteration in *MTHFR* and the site of disease in these individuals.

SELF-EXPANDING METAL STENTS IN THE TREATMENT OF COLONIC OBSTRUCTION: THE GROOTE SCHUUR HOSPITAL EXPERIENCE

SJ Hlatshwayo, P Goldberg, G Watermeyer, D Epstein, D Levin.
GIT Clinic, Groote Schuur Hospital & University of Cape Town

Background and aim Self-expanding metal stents are increasingly being used as a "bridge to surgery" when used for emergency relief of colonic obstruction and subsequent elective surgery. In those who are not suitable for surgical resection, either because of advanced malignancy or due to high operative risk, colonic stents are the preferred method of definitive palliation. The aim of the study is to review our own experience of the use of this intervention.
Method Retrospective review of 13 consecutive patients who had colonic stents for emergency colonic obstruction between September 2001 and April 2004. Three patients were not included because their records were missing. A team consisting of an endoscopist, specialized nurses, a radiographer and a radiologist performed the procedures. All procedures were performed using a combined endoscopic and fluoroscopic technique under opiate analgesia plus dormicum sedation.
Results Thirteen patients were reviewed, 7 women and 8 men with a mean age of 64.9 years. Technical and clinical success was achieved in 12 of the thirteen patients (92%). Only one patient had benign disease (diverticular stricture). Colonic obstruction was due to extrinsic malignant compression from breast and cervical cancers in two patients and primary colorectal carcinoma in 10 patients. Eight of the ten patients who had colorectal cancer had advanced disease at the time of colonic stent placement. Four patients had already demised of metastatic disease by the time of reporting (median survival after stenting of 2 months).
Conclusions In our small series the procedure was safe and effective. Colonic stent placement prevented several unnecessary operations and a number of colostomies at a lower complication rate. The cost savings (theatre time and shorter hospital stay) associated with this intervention are more than welcomed in a resource poor centre like ours.

Monday 9 August, 13h00 - 14h00
Venue: Roof Terrace

POSTER ROUND

PRELIMINARY REPORT: SYMPTOMATIC IMPROVEMENT IN HP ERADICATED NUD PATIENTS

Dr R Ahmed; Dr HR Bhaga, Dr J Omoshoro-Jones, Dr T Nunkoo, Prof R Ally.
Git Unit, Chris Hani Baragwanath Hospital, PO Bertsham, 2013,South Africa

Studies have shown variable responses to H.Pylori eradication in NUD patients.
Aim Compare symptoms in HP positive NUD patients who had eradication therapy versus non-eradication patients.
Method Patients who consented: Patients with dyspepsia and found to have NUD at endoscopy. They had to be willing to have a 2nd endoscopy at 8 weeks. - Total of 30 patients were studied, but only 17 returned from the follow up endoscopy. - 9/17 NUD's had Eradication therapy (Losec 20mg bd; Amoxycillin 1m bd; Clarithromycin 500mg bd for 7 days). - 8/17 NUD's had Losec 20mg daily only. - A questionnaire assessing epigastric pain severity and frequency, heartburn severity and frequency (if any) and impact on work/daily routine was assessed at baseline, 8 weeks and 6 months.
Results Only 2/9 patients in the 'eradicated' group successfully eradicated and none in the non-eradicated patients. The groups were too small to evaluate statistically.
Conclusion HP eradication doesn't improve symptoms in HP positive NUD patients with exception of the odd patient.

ASSOCIATIONS BETWEEN OCCUPATIONAL AND ENVIRONMENTAL EXPOSURES TO XENOBIOTICS AND CHRONIC PANCREATITIS

Jeppe CY, **Balabyeki MA**, Mathebula JJ, Smith MD
Helen Joseph and Chris Hani Baragwanath Hospitals

Objectives To identify occupational and environmental risk factors associated with chronic pancreatitis and document exposures in patients who underwent surgery for chronic pancreatitis.
Design Retrospective and prospective observational study. Setting and subjects: 64 patients with chronic pancreatitis presenting at the Helen Joseph and Chris Hani Baragwanath hospitals between 1991 and 2002 for pancreatic surgery.
Outcome measures Interviews were conducted relating to lifecourse occupational histories and exposures to environmental risk factors associated with chronic pancreatitis, by a single interviewer not involved in treatment decisions.
Results 42(65.5%) patients had been employed in high risk industries; 24(57.1%) of these were in the automobile, engine and parts manufacture, maintenamce, servicing and transport industries; 20(47.6%) in the printing and painting industries, 9(21.4%) in agriculture and horticulture; 6(14.3%) in wood furniture manufacturing and 6(14.3%) in catering. Apart from the high proportion of alcohol consumers and smokers, there were between 6.2% and 70.3% of the patients were exposed to glue, wood preservatives, pesticides, insectcides, benzene, diesel, petrol, paraffin, paint and lacquer, solvents and burning firewood.
Conclusion These findings suggest that volatile hydrocarbons are associated with chronic pancreatitis and there is need for stringent risk-control measures.

DOUBLE-BALLOON ENTEROSCOPY: PRACTICAL EXPERIENCE IN 30 PATIENTS

M Hadithi(1), **F Botha**(1), D Heine(1) C. Mulder(1), M Jacobs(1), Dept. of Gastroenterology, Vrije Universiteit Medisch Centrum, Amsterdam, The Netherlands

Introduction The small intestine, known as the black box, where obscure bleeding as well as lesions of various pathology occurs, is difficult to evaluate due to the length and the inaccessibility. To date various means (including push enteroscopy and capsule endoscopy) have been employed to detect and manage small intestinal lesions. The diagnostic and yield however is variable depending on the clinical indication and pathology. These techniques are characterised by their diagnostic limitations and lack of invasive and therapeutic possibilities. A new insertion method of enteroscopy, the double-balloon enteroscope (Fuji Photo Optical Incorporated Company) has been developed and enables endoscopic investigation of the entire small bowel with interventional and therapeutic capabilities. Preliminary results with this new and exciting technique are presented.
Aims and Methods Between January and June 2004, 30 patients (F:M = 10:20; mean age 56.3; range 29-80) with occult gastrointestinal bleeding (n=13), refractory coeliac's disease (n=7), Peutz-Jegher syndrome (n=6), Crohn's disease (n=1), radiation enteritis (n=1), protein losing enteropaty (n=1), suspected intestinal melanoma (n=1) underwent the double-balloon enteroscopy.
Results Oral introduction of the scope was performed in 21 patients and anal approach in three patients who had previous upper gastrointestinal surgery. Although a large extent of the small intestine could be inspected in the majority of patients, the caecum was only reached in 2 patients (10%) when the oral approach was performed. Mean duration of examination was 85±35 minutes. Conscious sedation composed of fentanyl (mean 75±25 mcg) and midazolam (mean 12±2 mg). Butylscopolamine or glucagon was administered if required, especially when interventions were performed. Lesions detected with this technique included polyps, arterio-venous malformations (angiodysplasia) and mucosal changes seen in coeliac disease. Biopsy, argon plasma coagulation (20 watt; 0.2L/min), snare polypectomy and tattooing of small intestine could be performed without adverse effects. Thus far no major complications have occurred, two patients described the examination as uncomfortable and one patient had post-procedural abdominal pain that resolved spontaneously within 24 hours of observation.
Conclusion Double-balloon enteroscopy is a new, elegant endoscopic technique that seems promising. The endoscopist can reach undiscovered small bowel segments for diagnostic purposes and to perform interventional and therapeutic procedures. Complications and invasiveness are minimal in this well-tolerated procedure.

P53 MUTATIONS AND OTHER RISK INDICATORS FOR OESOPHAGEAL CANCER AMONG TWO DISTINCT ETHNIC GROUPS.

H. Burger[1], D Barnard[2], P.D. van Helden[2], T.C. Victor[2], S. Abel[1], W.C.A. Gelderblom[1], G. Rossouw[3], E. Wilken[4], W.F.O Marasas[1].
[1]PROMEC Unit, Medical Research Council, P O Box 19070, Tygerberg; [2]Medical Biochemistry, University of Stellenbosch; [3]Department of Thoracic Surgery & [4]Department of Gastroenetrology, Tygerberg Academical Hospital, Tygerberg, 7505 South Africa

Introduction Southern Africa has one of the highest incidence rates of oesophageal cancer (OC) in the world. Suspected risk factors include tobacco and alcohol use; cultural practices; socio-economic status; food-borne mycotoxins; occupational exposures and viral infections. p53 plays a central role as a tumour-suppressor protein in cancer progression and is known to be mutated in more than 50% of all cancers. It has been suggested that the presence of specific mutations in the p53 gene could supply information as to type of carcinogens present in the environment.
Methods 166 Coloured and 76 Black OC patients presenting at Tygerberg Hospital and Umtata General Hospital, respectively, were recruited during 1997-2003. Blood and tumour biopsies were taken and OC risk factor behaviour was assessed.
Results p53 mutational patterns were distinct for each ethnic group. Risk behaviour differed according to the dietary habits, cultural practices and the use of alternative medicines.
Conclusion Data confirm the multi-factorial and complex nature of OC development.

"WRESTLING WITH WHIPPLE'S": A CASE OF ANTIBIOTIC RESISTANT WHIPPLE'S DISEASE.

David P. Epstein[1], Thomas Marth[2], Sabelo Hlatshwayo[1], Dion Levin[1], Trevor Winter[3]
GIT Clinic, Groote Schuur Hospital & University of Cape Town[1], Siftung Deutsche Klinik für Diagnostik, Germany[2], Division of Digestive Diseases and Nutrition,University of Kentucky[3]

Whipple's Disease is rare, chronic, multisystem disease caused by the bacterium *Tropheryma whipplei*. The case presented is that of a 45 year-old white male with Whipple's disease diagnosed in 1986 and subsequently confirmed on electron microscopy. His condition had been well controlled clinically and histologically for three years on oral cotrimoxazole therapy. He presented with a relapse as evidenced by clinical, endoscopic and histological features of active Whipple's disease. Endoscopy revealed yellow-white plaques in the post bulbar region extending beyond the second part of the duodenum. Biopsy of the duodenum and abdominal lymph nodes showed marked PAS-positive foamy macrophages and lymphangiectasia. A scleritis of the right eye was present and a hyperpigmented rash on the anterior chest was noted. Further special investigations did not reveal any other manifestations of Whipple's disease. PCR performed on duodenal biopsy samples and CSF, targeting internal transcribed spacer sequence repeats specific to *T whippelei*, were both negative. We discuss the approach to antibiotic therapy in resistant cases and the role of PCR.

THE AETIOLOGY OF OESOPHAGEAL ULCERATION IN HIV INFECTED PATIENTS IN CAPE TOWN, SOUTH AFRICA

D.P. Epstein[1], M. Locketz[2], G.A. Watermeyer[1], P. Hall[2].
GIT Clinic[1], Division of Anatomical Pathology[2], Groote Schuur Hospital & University of Cape Town

Oesophageal ulceration is a well-recognised manifestation of HIV infection and occurs most often with advanced immunosuppression. In most series cytomegalovirus (CMV) and idiopathic oesophageal ulceration are the most common causes however a broad differential of infectious, neoplastic and other diagnoses must be considered in each patient. No data exists on the aetiology of oesophageal ulceration in South African HIV infected patients.
We conducted a retrospective review from January 2001 to June 2004 of all patients with confirmed HIV infection and oesophageal ulceration seen in our clinic. In our series of 27 patients the median CD4 count was 15 cells/mm3 (0 – 446 cells/mm3), 33% of patients had active pulmonary tuberculosis and the mean time to endoscopy after the development of symptoms was 76.8 ± 85 days. Idiopathic oesophageal ulcer was diagnosed in 16 (59%) patients, CMV ulceration in 7 (26%), Candida in 3 (11%) and tuberculosis oesophageal ulcer in 1 patient (4%).
Following an endoscopic and histological diagnosis only 8 patients (27%) received therapy aimed at treating the oesophageal ulcer. We discuss the issues relating to the biopsy of oesophageal ulcers in HIV infected patients, histological analysis of specimens and specific treatment considerations.

THE ROLE OF ERCP IN ACUTE BILIARY COLIC WITH ABNORMAL LFT AND NORMAL ABDOMINAL ULTRASOUND SCAN:

E Fredericks.
Gastroenterology unit Greenacres Hospital. Port Elizabeth

Introduction In patients with acute biliary colic, it is easy to justify therapeutic ERCP, especially if, gallbladder stones are present, liver biochemistry is abnormal and the biliary system dilated. The role of ERCP is less clear if gallbladder stones are absent or the CBD not dilated.
Aim To assess the usefulness of ERCP in patients with acute biliary colic with abnormal liver biochemistry and non-dilated CBD with or without gallbladder stones.
Method Retrospective analysis of consecutive patients referred for possible ERCP over 18 months. Demographic details were obtained. The following investigations were recorded systematically: abdominal ultrasound(USS), LFT and the presence of absence of acute pancreatitis. ERCP and intra-operative findings were recorded for all patients.
Results 22 patients were enrolled in total. On USS: all had non-dilated CBD and 5 patients had no gallstones.

	GALLSTONES	NO GALLSTONES
n	17	5
AGE	37.1	45.4
SEX (m:f)	(1:16)	(2:3)
ALP	170	105
GGT	336.4	189.4
ALT	308.3	226.8
AST	240.9	84
ACUTE PANCREAT.	5 (29.4%)	3(66.7%)

ERCP: choledocholethiasis in all 22 patients. Intra-operative finding: Cholelithiasis and features of cholecystitis in all.
Conclusion In the correct clinical setting of acute biliary colic and abdominal LFT, ERCP is warranted even in the absence of expected ultrasound findings. This is particularly true in the presence of acute pancreatitis.

HISTOLOGICAL FINDINGS ON LIVER BIOPSY IN SOUTH AFRICAN PATIENTS WITH NON-ALCOHOLIC FATTY LIVER DISEASE (NAFLD)

FC Kruger[1], C Daniels[1], G Swart[2], CJ Van Rensburg[1] ,M Kidd[3], P Hall[4]
[1]Gastroenterology and Hepatology unit, Dept of Internal Medicine, Faculty of Health Sciences US, [2]Dept of Anatomical Pathology, Faculty of Health Sciences US, Center for Statistical Consultation US, [4]Division of Anatomical Pathology, UCT

Introduction The prevalence of NAFLD in US ranges between 17-33% and 13-21% in the UK and Japan. No data is available for South African patients.
Aim To describe the presence and type of disease in South African patients suspected of having underlying NAFLD.
Methods Thirty-four patients (10 males, 24 females, mean age 52 years) recruited for the study. Other chronic liver diseases were excluded. Patients were selected for liver biopsies on basis of the following: abnormal liver functions, hepatomegaly, fatty infiltration of the liver on ultrasound, and in addition one of the following risk factors for advanced disease, viz. age > 45, AST/ALT ratio > 1, Type II DM, obesity and signs of chronic liver disease.
Results Of the 31/34 (9 male, 22 female) patients with NAFLD on histology, 8 had type 1, 6 type 2, 12 type 3, 5 type 4 disease. Two of the other patients had cirrhosis and one had bridging fibrosis with no histological proof of steatosis. 12 patients were Caucasian, 14 mixed race, 1 Asian and 4 African. No patient suffered any complication from the liver biopsy. In addition bridging fibrosis was documented in 3 patients (60%) with type 4, 3 (25%) with type3, 1 (18%) with type 2. Cirrhosis was present another patient with type 4 disease.
Conclusion NAFLD of any frequency occurred with a high frequency (>90%) in South African patients selected on known criteria for liver biopsy.

ESTABLISHING ERCP SERVICE IN GREY'S HOSPITAL, PIETERMARITZBURG

AO Laosebikan, Sr Thomson, F Ghimenton, V Govindasamy
Department Of Surgery, Greys Hospital, Pietermaritzburg

The process of establishing ERCP service and an audit of the first 2 years, in the above institution are reviewed. Two hundred cases were performed. The male to female ratio was 1:2. The age ranged between 7 – 85 years. Indications include suspected bile duct stones (50%), biliary tract tumors (38,5%) and others (11,5%). The procedure was repeated in 8,5% of cases. Inability to cannulate the biliary system was 3,1%. Complications such as cholangitis (3,5%), pancreatitis (1,5%) and duodenal perforation (1,5%) all occurred in patients with malignancies. The mortality rate of 4,5% occurred in those with locally advanced or disseminated malignancies.

CASE REPORT: COMMON VARIABLE IMMUNE DEFICIENCY AND THE GASTROINTESTINAL MANIFESTATIONS

Levin DA, Watermeyer G, Epstein D, Hlatshwayo SJ
Gastrointestinal Unit Department of Medicine, Groote Schuur Hospital, Cape Town

Common variable immune deficiency (CVID) is an immunodeficiency syndrome characterised by hypogammaglobulinaemia and protean clinical manifestations. The condition usually presents in the second or third decade of life. There is often a delay in the diagnosis.
We present a typical case of CVID in a 23-year-old female presenting with severe malnutrition, bronchiectasis, gastrointestinal infections and a pre-malignant gastric polyp.
The patient was initially diagnosed with Cohn's Disease at the age of sixteen on a background of chronic diarrhoea, failure to thrive and primary amenorrhoea. She underwent ileo-caecal resection at the time of diagnosis but was lost to follow-up thereafter. She experienced chronic ill health characterised by frequent chest infections, intermittent diarrhoea and poor weight gain.
She was admitted following a prolonged exacerbation of diarrhoea, productive cough and severe weight loss.
We discuss the clinical manifestations and the diagnostic and therapeutic strategy employed in elucidating the diagnosis of CVID. In addition, the response to intravenous immunoglobulin therapy is discussed.

MOTILITY AND INTRALUMINAL PRESSURE AFTER SIGMOID VOLVULUS RESECTION AND PRIMARY ANASTOMOSIS

Machowski Z.A., Mosane T
Department of General Surgery, Polokwane, MEDUNSA

In recent dispute how safe is primary anastomosis after resection of sigmoid volvulus the information about the large bowel motility and intraluminal pressures in areas of the line of anastomosis may be interesting.
Aim of study to investigate motility and intraluminal pressures in the large bowel in the segments above and below the anastomosis.
Method patients with primary anastomosis after sigmoid volvulus resection were investigated and their motility with intraluminal pressure in the segments above and below anastomosis were estimated using previously described technique.
Results and conclusions peripheral segments of the large bowel after resections of sigmoid volvulus and primary anastomosis below the line of anastomosis had diminished motility.

A COMPARISON OF ESOMEPRAZOLE 40 MG ONCE-DAILY AND PANTOPRAZOLE 40 MG ONCE-DAILY FOR THE HEALING OF EROSIVE ESOPHAGITIS

S. Schmidt[1], N. Keeling[2], S. Eklund[2], E. Nauclér[2], and J. Labenz on behalf of the EXPO study group[3]
[1]City Medical Chambers, Cape Town, South Africa, [2] R&D, AstraZeneca, Mölndal, Sweden, [3] Medical Department, Jung-Stilling-Krankenhaus, Siegen, Germany

Introduction: Previous studies in patients with symptoms of gastroesophageal reflux disease (GERD) have shown that esomeprazole 40 mg has a more profound and longer lasting inhibition of gastric acid secretion during a 24-hour period than pantoprazole 40 mg. This study, which is the first phase of an ongoing management study, will assess whether this more effective acid control is reflected in greater efficacy in the healing of erosive esophagitis (EE).
Methods: 3161 patients with endoscopically confirmed EE (LA grades A–D) were enrolled into this multicenter, randomized, double-blind study. Patients received either esomeprazole 40 mg once-daily (qd) or pantoprazole 40 mg qd for 4–8 weeks. Endoscopy was performed in all patients at 4 weeks. Patients with unhealed EE and/or persistent symptoms continued treatment for a further 4 weeks, after which they were again endoscoped. All healed and symptom-free patients were randomized to the 6-month maintenance phase of the study.
Results: Healing rates at 4 and 8 weeks were higher following treatment with esomeprazole 40 mg than pantoprazole 40 mg (Table). This trend was also apparent across all baseline LA grades. Life table estimates showed more patients were healed and symptom free after 8 weeks treatment with esomeprazole 40 mg than pantoprazole 40 mg (95.5% vs. 92.0%, respectively, p<0.001).
Table: Crude healing rates at 4 weeks, % (95% confidence intervals).

LA grade	Esomeprazole 40 mg (n = 1567)		Pantoprazole 40 mg (n = 1594)	
A (n = 1006)	84.0	(80.6 - 87.0)	83.2	(79.5 - 86.4)
B (n = 1386)	79.9*	(76.7 - 82.9)	75.5	(72.2 - 78.6)
C (n = 607)	71.1**	(65.6 - 76.1)	60.1	(54.3 - 65.6)
D (n = 162)	61.4**	(49.0 - 72.8)	40.2	(30.1 - 51.0)
All patients	78.7***	(76.6 - 80.8)	72.8	(70.6- 75.0)

*p < 0.05; **p < 0.01; *** p < 0.001 vs. pantoprazole
Conclusion: Esomeprazole 40 mg provides significantly greater healing of EE than pantoprazole 40 mg.
This work was supported by AstraZeneca R&D Mölndal, Sweden.