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SAGES ABSTRACTS — ORAL

NEW NUCLEOSIDE ANALOGUES IN CHRONIC HEPATITIS B TREATMENT, WHAT'S NEW AFTER LAMIVUDINE

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Lamivudine is a well accepted oral treatment of patients with chronic hepatitis B virus infection. However, the occurrence of YMDD drug resistant mutants may lead an increase in viral replication with recurrent ALT elevations.. We studied viral kinetics of Entecavir in ten chronic hepatitis B patients and Tenofovir in 7 hepatitis B patients after HBV DNA breakthrough during lamivudine therapy. Sequential sera, taken at t=0 and t=8 hours, day 2, 4, 7, 10, 14, 21 and day 28, were tested for HBV DNA by quantitative and qualitative PCR (detection level 400 copies / ml). The decay of the viral load followed a bi-phasic decline and was fitted by a bi-phasic-exponential model according to Neumann. YMDD variants were detected using a line probe assay (INNO-LIPA HBV DR; Innogenetics N.V., Ghent, Belgium). Level of detection of the assay between 4 and 8 % mutant virus population. Ten chronic HBV patients were treated with four doses of Entecavir (0.05, 0.1, 0.5 and 1 mg / day) for 28 days. Two of these patients had a YMDD mutant virus. The median baseline HBV DNA was 1.92 x 10E9 geq / ml (range 5.5x10E7- 1.5 x 10E10). The median effectiveness of Entecavir in blocking viral replication was 96% (range 87%-98%). Turnover of free virus was 16 hours (median; range 12-29 hours), the turnover of infected hepatocytes was estimated to be 10.7 days (medium; range 5.2-31.8 days). Seven chronic HBV patients with breakthrough HBV DNA on lamivudine therapy and documented YMDD mutations received Tenofovir (300mg od). Four of these patients were HIV co-infected. Viral kinetic data of the first 5 patients will be described hereafter. Median baseline HBV DNA was 1.46 x 10E9 geq / ml (range 3.0x10E6- 5.75 x 10E9) Application of Tenofovir resulted in a mean log HBV DNA decline of 2.2 + / - 0.99 (n=5). The median effectiveness of blocking viral replication was 93% (range 87%-98%). Turnover of free virus was 18.9 hours (median; range 14.9-69.3 hours), the turnover of infected hepatocytes was estimate to be 7.3 days (medium; range 3.7-17.9 days).

In conclusion, Entecavir and Tenofovir are capable of blocking viral replication in patients with Lamivudine induced drug resistant mutants. These viral kinetics data show an efficacy capable to inactivate biochemical disease, but insufficient to eliminate viral replication completely. Future approaches will study combination therapy to document additional efficacy.

PREOPERATIVE BILIARY STENTING A NECESSARY PREQUEL TO PANCREATIC RESECTION IN SELECTED PATIENTS

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Introduction: Routine preoperative biliary stenting is a questionable practice. In patients who present with cholangitis, renal failure or poor nutritional status biliary drainage is an essential to improve their chances of immediate survival. We report our experience with this category of patients in whom subsequent pancreatico-duodenectomy was performed.

Patients and Methods: In the period January 2001 to June 2002, 5 patients at our institution required biliary drainage to reverse potentially fatal complications or to optimize nutritional status. There were two females aged 62 and 70 years and three male patients aged 50, 63 and 66 years. The reasons for biliary drainage were suboptimal albumin levels in all patients, cholangitis in three patients and renal impairment in 2 male patients There was failure of stent placement at ERCPin three patients, two of whom had had ERCP performed at another institution prior to referral. Two had a PTC stent successfully deployed via PTC. In the other a plastic stent was deployed at combined PTC / ERCPsession. The two others had stents placed by ERCP. None of the patients had complications related to the stenting procedure. Duration of stenting was 12, 18 74, 51 and 100 days prior to surgery. All the lesions were deemed resectable following imaging by ultrasound and CT scan. Laparotomy with intent to resection was planned when the complications had resolved. All patients underwent pancreatoduodenectomies. One patient developed postoperative superficial wound sepsis, which resolved with topical management. There were no perioperative deaths. The postoperative hospital stay was 10, 14, 15, 17 and 21 days respectively. Histology revealed adenocarcinomas of the pancreatic head in 4 patients and an ampullary tumour in 1 patient.

Conclusion: Biliary drainage for complications should not be regarded as definitive treatment. It optimises co-morbidity factors and allows staging so resection can be successfully carried out in selected patients.

RANDOMIZED CONTROLLED TRIAL OF PEGINTERFERON ALFA-2A PLUS RIBAVIRIN FOR CHRONIC HEPATITIS C VIRUS-GENOTYPE 4 AMONG EGYPTIAN PATIENTS.

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Background: HCV prevalence in Egypt is approximately 12% (7.2 million people). Genotype 4 is the most prevalent, appears the least responsive to treatment. We compared the efficacy and safety of Peginterferon alfa-2a (PEG-IFN plus ribavirin (RBV) and interferon alfa-2a(standard IFN) plus RBV, in the treatment of chronic hepatitis C.

Methods: A total of 100 patients with chronic hepatitis C, genotype 4 were randomly assigned to 48 weeks treatment, 51 patient received 180 µg of PEG-IFN once weekly plus daily RBV (1000 or 1200 mg. depending on body weight) and 49 received 3 million units of IFN thrice weekly plus daily RBV for 48 weeks. Final evaluation depending on intension to treat was done 24 weeks after cessation of therapy.

Results: Patients in both groups were well matched demographically as well as the liver biopsy histology and viral load. Asignificantly higher proportion of patients who received PEG-IFN plus RBV had a sustained virologic response (defined as the absence of detectable HCV RNA24 weeks after cessation of therapy) than of patients who received standard IFN plus RBV (35 / 51 % vs. 8 / 49 respectively, P<0.001). The overall safety profiles of the two treatment regimens were similar; the incidence of

influenza-like symptoms and depression was lower in the group receiving PEG-IFN than in the group receiving standard IFN plus RBV.

Conclusions: In patients with chronic hepatitis C, once-weekly PEG-IFN plus RBV was tolerated as well as standard IFN plus RBV and gave significant improvements in the rate of sustained virologic response (68.6% vs. 16.4 %).

T-LYMPHOCYTE INHIBITION BY RAPAMYCIN PARTIALLY AMELIORATES BONE LOSS IN PORTASYSTEMIC SHUNTED RATS

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Introduction: Chronic liver disease is frequently complicated by metabolic bone disease. We previously showed in rats that portasystemic shunting but not portal hypertension or early parenchymal disease affected bone metabolsim (Van der Merwe SW et al Gut 2003;52:580-585). We postulate that portasystemic shunting (PSS) leads to peripheral T-lymphocyte activation in chronic liver disease.The role of T-lymphocytes were studied in the portasystemic shunted rat model of hepatic osteodystrophy.
Material and methods: 48 male Sprague-Dawley rats were used: Group I PPS (n=12); Group II PPS + rapamycin (0.1mg/kg daily)[n=12] Group III: Sham controls (n=12), Group IV: Control + rapamycin. The rats were terminated at 16 weeks. Blood was taken at baseline and 16 weeks for liver functions, CRP, cytokine levels (IL-1,IL-6,TNF alpha), and for testosterone, osteocalcin, and IGF-levels. At termination FACS analysis was performed on peripheral lymphocytes (CD 8, CD 4, CD 25). Bone densitometry was performed at baseline and 16 weeks on femurs and histomorphometry was performed on undecalcified methylmetacrylate embedded tibiae after termination. RNA extracted from peripheral lymphocytes were analysed for TNF alpha and OPGL expression using a light cycler. Rat bones were ashed and calcium and hydroxiproline concentrations were determined.

Results: PSS adversely affected all aspects of bone metabolism. Bone density was significantly decreased in PPS rats ($p<0.05$) but not in PSS+Rapamycin treated rats ($p=0.06$) compared to controls.Osteocalcin levels were significantly lower only in PSS rats ($p=0.03$) In contrast rapamycin partially restored bone formation as assessed by histomorphometry. TNF alpha expression in peripheral lymphocytes were not increased in PSS animals compared to controls.

Conclusions: Rapamycin administered to PSS rats partially restored all aspects of bone turnover suggesting that T-lymphocytes may be involved in the pathogenesis of hepatic osteodystrophy.

ANTISENSE OLIGONUCLEOTIDE INHIBITION OF HEPATITIS C VIRUS GENOTYPE 4 REPLICATION IN HEPG2 CELLS

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The outcome of interferon plus ribavirine treatment of hepatitis C virus (HCV) genotype 4 is unfortunately poor. Development of alternative therapy for this genotype is of a paramount importance. Inhibition of HCV gene expression in vitro by the use of antisense phosphorothioate oligodeoxynucleotides (S-ODN) against IRES elements were associated with favorable results. To assess S-ODN activity, previous studies utilized viral subgenomic or full cDNA fragments linked to reporter genes transfected into adhered cells or in a cell free system. In the present study we utilized HepG2 cells infected with native HCV RNAgenomes in a replication competent system. S-ODN against stem loop IIId (S-ODN2, nt 264-282) and the AUG translation start site (ODN-1, nt 326-348) of the viral polyprotein precursor were used as potential inhibitors for viral replication. Intracellular viral replication was monitored both by nested RT-PCR and real time PCR technology. These experiments indicated that intracellular replication of HCV genotype 4 was completely arrested by using either S-ODN structure (with more efficacy of S-ODN1 than S-ODN2) at concentrations as low as 1 uM after 48 h. in culture. The inhibitory effect of S-ODN appeared to be specific to HCV replication in light of the consistent levels of human glyceralehyde 3-phosphate dehydrogenase (GAPDH) gene expression throughout culture conditions and S-ODN treatments. In conclusion, the present study provides a direct evidence for the potential antiviral activity of antisense oligonucleotides on native genomic replication of HCV genotype 4 , the most common type in Egypt.

NISSEN VS ANTERIOR LAPAROSCOPIC FUNDOPLICATION: A PROSPECTIVE, RANDOMISED, DOUBLE BLIND TRIAL

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Aim: To compare laparoscopic anterior partial fundoplication and Nissen total fundoplication in a double-blind, randomized, private practice, single surgeon setting.

Patients: All patients with proven GORD, regardless of motility.

Outcome measures: dysphagia; abolition of reflux; patient satisfaction at 3, 12, 24 months.

Results: 163 patients (84 Nissen, 79 Anterior) had a median stay of 2 nights, and operation times of 53 vs 59 minutes (ns). Reoperation rate at 90 days was zero. There were no differences in mean heartburn scores (<1/10 at 3, 12, 24 months). Dysphagia scores, using 2 scoring systems, were lower after Anterior fundoplication for both liquids (only at 3 months) and solids (3, 12, 24 months). Satisfaction scores (ns) were >9.5/10 at all time points. 4 (5%) pts had persistant dysphagia after Nissen, and all underwent successful revision laparoscopic surgery. Ten (12%) had recurrent reflux after Anterior, sufficiently severe in 7 (8%) to warrant revision surgery. No patients had recurrent reflux after Nissen. No pts had persistant dysphagia after Anterior. Overall reoperation rate at 2 years was 6%, all achieved laparoscopically.

Conclusion: Nissen cured all patients of reflux, durable to 2 years, but 1:20 required revision. Anterior failed in 12% but avoided dysphagia completely. Revision laparoscopic surgery, while more difficult, was safe and successful.

MAINTENANCE TREATMENT WITH 6-THIOGUANINE OVER ONE YEAR IN AZATHIOPRINE OR 6-MERCAPTOPURINE INTOLERANT IBD PATIENTs

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Background: In IBD, the thiopurines azathioprine (AZA) and 6-mercaptopurine (6-MP) are used on a large scale. However, clinical use of these drugs is limited by their potential myelotoxicity and hepatotoxicity. Direct administration of the down-stream metabolite 6-thioguanine is a promising strategy to reduce toxicity. Previous

reports demonstrated good efficacy and safety on the short term, but concerns about hepatotoxicity and veno-occlusive disease have been raised.

Aim: The aim of the present study is to determine the one-year safety of 6-thioguanine in AZA or 6-MPintolerant IBD patients.

Methods: We conducted an open label pilot study in AZA or 6-MP intolerant IBD patients. 6-Thioguanine was administered as maintenance treatment in a daily dose of 10 to 40mg. All adverse events were recorded and 6-thioguanine nucleotide levels (6-TGN), blood cell counts, serum amylase and liver enzymes were obtained at regular intervals during a one-year period. Furthermore, abdominal ultrasound was performed after one year. When high 6-TGN levels (above 1500 pmol/8x108 red blood cells) were obtained, dose reduction was advised.

Results: In 50 patients, no clinically relevant myelotoxicity was observed over a period of one year. An increase of liver enzymes above the normal range during the one year period was observed in 6 patients. This was explained by symptomatic choledocholithiasis in one patient and by steatosis hepatis without focal regenerative hyperplasia in histology in one patient. In another patient elevated liver enzymes were accompanied by an increase in serum amylase as previously seen on AZA. He refused a liver biopsy. In 2 patients, elevation of liver enzymes were accompanied by a relapse of IBD. In none of the patients, radiological signs of portal hypertension were seen.

In conclusion: Maintenance treatment with 6-thioguanine (given in doses of 10-40 mg/day) is feasible in AZA or 6-MPintolerant IBD patients without relevant myelotoxicity. In 2 patients (4%), drug unrelated elevation of liver enzymes were seen. In 4 patients (8%) with elevated liver enzymes, a relationship with 6-TG remained unclear. After one year, no signs of portal hypertension were observed.

ESOMEPRAZOLE 40 MG PROVIDES SAFE AND EFFECTIVE HEALING OF EROSIVE ESOPHAGITIS WHETHER ADMINISTERED AS AN INTRAVENOUS (IV) INJECTION, AN IV INFUSION OR ORALLY

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Purpose: Esomeprazole 40 mg once daily (od), taken orally, has been shown to provide higher rates of healing in patients with erosive oesophagitis than omeprazole 20 mg or lansoprazole 30 mg after 8 weeks of treatment.[1,2] An IV formulation of esomeprazole has been developed for use in patients where oral administration is not appropriate.

Aims and Methods: Atotal of 246 patients (116 male) with endoscopically confirmed erosive oesophagitis were randomised into this double-blind, multi-centre study. The safety and efficacy of esomeprazole 40 mg administered via an IV injection, an IV infusion or orally were assessed. Patients were randomised to receive one weeks' treatment of esomeprazole 40 mg either via a 3-minute IV injection, a 30-minute IV infusion or orally od. The one-week duration of these treatments reflects the short duration of the majority of clinical situations preventing oral intake. Subjects then received open treatment with esomeprazole 40 mg orally od for a further 3 weeks. Healing rates for the three treatment groups were estimated following 4 weeks of treatment. Safety variables were compared following 1 and 4 weeks of treatment.

Results: Prior to treatment, LAgrades were similar for each treatment arm (A+B: 74.4-78.5%; C+D: 21.6-25.6%). The three treatment groups showed similar levels of healing following 4 weeks of treatment with esomeprazole 40 mg (Table). The three treatment arms were equally well tolerated during the first and fourth week of treatment. Throughout the study there were no treatment-related serious adverse events or treatment-related AEs leading to withdrawal of subjects.

Conclusion: Esomeprazole 40 mg od via IV injection, IV infusion or orally administered for the first week of therapy, followed by three weeks of oral dosing, all provide safe and effective healing of erosive oesophagitis. These data support that both IV injection and IV infusion are useful short-term administration routes in appropriate patient populations.

Table: Healing rates of erosive oesophagitis after 4 weeks'treatment, ITT/Safety population (n=246).

	Esomeprazole 40mg od		
Initial week's treatment	3-min injection	30-min infusion	Oral
Estimated healing rate	79.7%(63/79)	80.2%(65/81)	82.6%(71/86)
95% CI	69.2%-88.0%	69.9%-88.3%	72.9%-89.9%

References:

1. Kahrilas PJ, *et al*. Aliment Pharmacol Ther 2000; 14(10): 1249-58
2. Castell DO, *et al*. Am J Gastro 2002; 97(3): 575-83

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THE FREQUENCY OF IL-1 GENE POLYMORPHISMS IN SOWETAN SUBJECTS AND THEIR RELATIONSHIP WITH H.PYLORI ASSOCIATED DISEASE

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Introduction: The outcome of Helicobacter pylori infection has been associated with specific polymorphisms in the IL-1 gene cluster. To determine the uniformity of this association, we examined the association between specific IL-1 gene polymorphisms and H.pylori associated disease in subjects from Soweto, South Africa.

Methods: IL-1B –511; IL-1B +3954 and IL-1RN polymorphisms were assessed in 95 patients attending for endoscopy, 31 with non-ulcer dyspepsia (NUD), 41 duodenal ulcer (DU), 17 gastric ulcer (GU) and 6 gastric cancer (GC). IL-1B + 3954 polymorphisms were assessed in 55 of these subjects (NUD=29, DU=19, GU=5 and GC=2). IL-1B -511 and +3954 single nucleotide polymorphisms were determined by Real Time PCR analysis using Taqman probes and IL-1RN polymorphisms by PCR analysis.

Results: The overall frequency of IL-1B -511 alleles was T/T (38%), C/T (43%) and C/C (19%), of IL-1B +3954 alleles, T/T (1%), C/T (31%), C/C (68%) and IL-1RN alleles* 1/1 (84%), *1/2 (9%), *1/3 (1%), 1/4 (5%) and * 2/2 (1%). Comparison of the frequency of specific alleles with disease showed 83% of GC subjects to carry the IL-1B -511 T/T allele as compared with NUD (36%), DU (34%) and GU (35%). No association was found between specific IL-1B +3954 alleles or IL-1RN alleles and disease. The IL-1RN*2/2 allele was carried by 2% of subjects with DU and no subjects with NUD, GU or GC.

Conclusion: As previously reported carriage of IL-1-511T/T was associated with GC. The virtual absence of the IL-1RN*2/2 allele in Sowetans may explain the low incidence of GC in this population.

GENETIC DIVERSITY OF HELICOBACTER PYLORI IN AFRICAN STOMACHS

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Background: Helicobacter pylori is a common pathogen affecting 50% of humans. This infection is associated with gastric and duodenal ulcer disease, gastric carcinoma and MALT lymphoma of the stomach. At present the routes of H. pylori transmission are unclear due to high rates of mutation and / or genetic interchange among strains (recombination) and varying prevalence among human populations.

Aims: To study the intra-familial transmission and genetic diversity of H. pylori in a rural population. Within this population a combination of high prevalence, extensive sampling within families and a relatively homogenous environment provides an exceptional opportunity to evaluate hypotheses of transmission and H. pylori evolution at the DNAsequence level.

Materials and methods: 85 healthy volunteers were recruited from a rural area with exposure to a single water source. Serology, C13 breath resting, stool antigen testing were performed. In addition, gastric biopsies were taken for histology, FISH analysis. We analysed a 341bp sequence fragment from the glMm gene obtained by direct PCR amplification of DNAextracted from gastric biopsies using a method previously developed in our laboratory (Goosen, Van der Merwe et al J Clin Microbiol Jan 2002).

Results: Few samples yielded multiple sequences, consistent with a single dominant strain in each biopsy. Contrary to initial expectations, H. pylori sequence variation does not clearly match familial relationships. Closely related strains tend to co-occur within families, along with more divergent strains, but there is only a weak correlation between parent – offspring or mother – child H. pylori sequences. Comparison of closely related sequences indicates a high rate of recurrent mutation including both silent nucleotide substitutions and changes to the glMm protein sequence. On a longer time scale, sequence diversity within this population suggests considerable recombination, indicating at least occasional multiple infections and interaction among H. pylori strains within individuals.

Conclusions: This is the most extensive study to date looking at H. pylori diversity in gastric biopsies taken in individuals in large families. In Africans, genetic diversity in individuals differ extensively suggesting that H. pylori infection and genetic material may be acquired from outside the family

SACRAL NERVE STIMULATION (SNS) FOR MAJOR PELVIC EVACUATORY DISORDERS

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Intro: SNS therapy uses neuromodulation to stimulate sacral nerves (usually S3) by means of an implantable neurostimulation system. The S3 nerve controls the detrusor and levator ani muscles and thus influences pelvic floor behaviour. The exact mechanism of action is not known.

Method: 22 patients (18 female, 4 male; age 8 – 89 years) with faecal and or urinary incontinence underwent permanent sacral nerve stimulation. Patient selection was based on resistance to any other form of conventional treatment. Routine evaluations (clinical examination, endoanal ultrasound, anorectal manometry, rectal sensitivity, urodynamics) were completed. Only patients with normal anorectal ultrasound were accepted into the study. All patients underwent temporary peripheral nerve evaluation (PNE). Only patients with greater than 75% improvements in their symptoms underwent SNS.

Results: Follow up varied between one and 72 months. Continence improved in all patients. Quality of Life documentation will be discussed.

Conclusion: Sacral third nerve root stimulation is a reversible minimally invasive technique showing effective results in patients suffering from urinary / faecal incontinence where conventional treatment has failed.

SAGES ABSTRACTS — POSTER

THE SPECTRUM OF GIT DISEASES IN IRAQ

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Saddam Center for Gastroenterology and Hepatology was established in 1995 as a tertiary referral center.

The activates is divided into outpatients / inpatients with various endoscopic and radiologic and other related topics.The center has 100 beds with four operating theaters, four therapeutic endoscopic radiologic theaters, four endoscopic theaters with facilities for documentation with disinfection systems. The center is a training center for various post graduate GIT studies in medicine / surgery / GI radiology / GITpathology / GIT pediatric diseases with 2 subspecialty GI board studies in medicine and surgery. This study review the spectrum of gastrointestinal and liver diseases in the Center over 8 years period (1995-2003).

Of 157 606 outpatient and 5 416 inpatient admitted the following results were noted:-

1 gastroesophageal reflux disease is the leading cause of dyspepsia in addition to peptic ulcer disease.
2 Ulcerative colitis and to lesser extent Crohn's disease are rising in Iraq.
3 Chronic liver diseases are very prevalent and account for 2 / 3rds of the admissions, the important causes is in the following order, Hepatitis B, alcohol, Hepatitis C, immune hepatitis, metabolic diseases.
4 HbsAg carrier rates in Iraq vary between 1.5-7% and HCV carrier rates of about 0.5-1%.
5 GIT and liver cancers are increasing and occur at younger ages and tend to be more undifferentiated.
6 Biliary obstruction, the causes are stones, post operative and cholangiocarcinomas.
7 Coeliac disease is frequently seen both in children and adults.

CLINICAL & DEMOGRAPHIC CHARACTERIZATION OF CROHN'S DISEASE IN QATAR

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Background: Crohn's Disease (CD) is a chronic transmural inflammatory disease of unknown aetiology, which is thought to occur as a result of disregulation of the mucosal immune system. While the incidence and prevalence of CD in Western countries is well known, the existence of Crohn's disease among Arabs, Asians