Conclusions: Renal function was important predictive factor of 14 days mortality in cirrhotic patients with SBP. The patients with SBP and renal insufficiency should be treated more intensively.

Keywords: Liver cirrhosis, Spontaneous bacterial peritonitis, Renal function

O-061

Effect of Mesenchymal Stem Cell on Hepatic Fibrosis in Thioacetamide-Induced Cirrhotic Rat Model

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Background: Cirrhosis is a long-term consequence of chronic hepatic injury with fibrosis and no effective therapy except liver transplantation is currently available for decompensated cirrhosis. However, some practical limitations in liver transplantation lead us to a need for new therapeutic paradigm in this field. Recent reports have shown that the mesenchymal stem cells (MSCs) have the plasticity to differentiate into some kinds of tissue cells and improve organ function. Hence, we investigated the effect of direct inoculation of human bone marrow derived MSCs (BM-MSCs) in thioacetamide (TAA)-induced cirrhosis in a rat model.

Methods: Adult Sprague-Dawley rats were allocated into three groups (each group, n = 15) as follows: G1, shame; G2, TAA-control; G3, TAA+BM-MSC. To induce cirrhosis, 200mg/kg TAA injection was done twice a week for 12weeks in G2 and G3. 2×10^6 cells of amplified human BM-MSCs were injected directly into the right liver lobe twice, at weeks 6 and 8 in G3. At 12 weeks, the effect of BM-MSCs on cirrhosis was analyzed histomorphologically using Laennec scores. α-Smooth muscle actin(α-SMA) expression by immunohistochemical staining, relative expression of collagen type 1, and transforming growth factor β (TGF-β) were also evaluated by real-time reverse transcriptase-polymerase chain reaction.

Results: Laennec scores were 0, 5.4±0.7 and 3.7±1.06 in G1, G2 and G3, respectively. Histologically, BM-MSCs injected group (G3) showed significant suppression of hepatic fibrosis compared with TAA-control group (G2)(P<0.001). Expressions of α-SMA(%) were significantly lower in G3 than in G2 (3.08±1.26 vs. 7.00±4.12, P<0.05). Also, the relative expression of collagen type 1 and TGF-β1 in RT-PCR were 0.64±0.24, 2.06±0.51, 1.32±0.31 and 0.62±0.28, 5.89±3.05, 2.22±1.41 in G1, G2 and G3, respectively P<0.005).

Conclusions: Our results showed that BM-MSCs could attenuate liver fibrosis in rats with TAA-induced cirrhosis, raising the possibility for clinical use of BM-MSCs in the treatment of cirrhosis.

Keywords: Mesenchymal stem cell, Hepatic fibrosis, Cirrhosis, Thioacetamide rat model

O-062

Randomized Clinical Trial: Effects of Multi-Species Probiotics on Small Intestinal Bacterial Overgrowth in Patients with Chronic Liver Disease: A Placebo Controlled Study

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Background: This study was conducted to investigate the efficacy of probiotics administration in alleviating SIBO and intestinal permeability in chronic liver disease.

Methods: Fifty three patients with chronic liver disease were randomized to receive either probiotics or placebo. After 4 weeks, the changes in SIBO, intestinal permeability and clinical symptoms were examined and compared. The lactulose-based hydrogen breath test was conducted to identify SIBO. The intestinal permeability was assessed by comparing the absorbability of lactulose and mannitol. The changes in digestive symptoms, composition of fecal bacteria, and liver function were also compared after four weeks of administration.

Results: The positive rate of SIBO was 26% in chronic liver disease patients. After four weeks later, in the probiotics group, 24% of patients showed improvement of SIBO, but in placebo group, there was no patient whose SIBO was improved and 16% showed aggravation of SIBO (P<0.05). The treatment group showed significant increase in the level of fecal *B. lactis, L. rhamnosus,* and *L. acidophilus* (P<0.05). Although probiotics also contained *B. bifidum, B. longum*, and *S. thermophiles*, the changes in the levels of *B. bifidum, B. longum*, and *S. thermophilus* were not significant. By contrast, there were no significant changes in the levels of the ingested bacteria in the placebo group. About half of treatment and 31.3% of placebo group reported improvement in intestinal permeability, the difference between two groups was statistically insignificant (P=0.248). Improvement in abdominal pain of the probiotics and placebo group was 3.17±1.6 and 1.95±2.4 respectively (P=0.056) while improvement in gastrointestinal symptoms of the probiotics and placebo group was 3.35±1.7 and 2.05±2.3 respectively, suggesting that digestive symptoms of the probiotics group improved compared to placebo (P=0.047).

Conclusions: 4 weeks probiotics administration in chronic liver disease patients was effective in alleviating SIBO and clini-

cal symptoms but ineffective in improving intestinal permeability and liver function.

Keywords: Probiotics, Small intestinal bacterial overgrowth, Chronic liver disease

O-025

Risk Factors of Post Polypectomy Bleeding in Patients with Chronic Liver Disease

Hee Seung Lee[1], Seung Up Kim[1-3*], Beom Kyung Kim[1-3], Jun Yong Park[1-3], Do Young Kim[1-3], Sang Hoon Ahn[1-3], Kwang-Hyub Han[1-3]

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Background: Hepatologists and colonoscopists are often hesitant to perform endoscopic polypectomy in patients with chronic liver disease (CLD), especially liver cirrhosis. We investigated the incidence of post-polypectomy bleeding (PPB) and factors which are related to PPB in these patients.

Methods: A total of 160 patients with CLD who underwent colonoscopic polypectomy between December 2005 and December 2012 were retrospectively reviewed. PPB was defined as melena, hematochezia, or hemoglobin concentration decreased by more than 2g/dl after polypectomy.

Results: The mean age of the study population (120 men, 75%) was 61.1 years. Liver cirrhosis was identified in 84 (52.5%) patients. Mean polyp size and number was 9.7 mm and 3.2, respectively. During the study period, PPB was observed in 26 (16.9%) patients. All PPB was appropriately managed without significant complications. Except mean polyp size (9.0 ± 5.3 mm in patients without PPB vs. 13.1 ± 7.6 mm in patients with PPB), baseline characteristics were not significantly different between the groups with and without PPB. On logistic regression analysis, only mean polyp size was significantly related to PPB (hazard ratio 1.009, 95% confidence interval 1.032-1.170, *P*=0.003). The areas under the receiver operating characteristic curve of mean polyp size to predict PPB was 0.638 (95% CI 0.508-0.767, *P*=0.025) in whole study population and 0.703 (95% CI 0.575-0.831, *P*=0.002) in 136 (85.0%) patients with ≤5 polyps. The optimal cutoff mean polyp size to predict PPB was 11.8 mm (sensitivity 51.9%, specificity 84.6%, positive predictive value 89.4%, and negative predictive value 41.2%).

Conclusions: Although the incidence of PPB in patients with CLD undergoing colonoscopic polypectomy was quite high, no significant PPB was observed. Only mean polyp size influenced the risk of PPB. Colonoscopic polypectomy can be performed cautiously in patients with CLD even with liver cirrhosis, because liver cirrhosis-related variables did not increase the risk of PPB.

Keywords: Post-polypectomy bleeding, Liver cirrhosis, Endoscopic mucosal resection, Polypectomy, Chronic liver disease

HCV, Acute, LT

- Date: June 15, 2013
- Time: 14:00~15:30
- Venue: Art Hall

ORAL

O-064

Suppression of Hepatitis C Virus Replication by Ginsenoside Rg3 that Inhibits Viral NS3/4A Protease Activity

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Background: Hepatitis C virus (HCV) infection results in chronic liver diseases. The standard of care (SOC) of chronic hepatitis C is peginterferon alfa-2a/-2b with ribavirin. However, not everyone with hepatitis C responds to drug therapy, and the drugs have side effects that can be difficult to tolerate. Ginseng has been one of the most commonly used herbal medicines in Europe and North America. In this study, we investigated the anti-HCV effect of ginsenosides which inhibit HCV NS3/4A activity.

Methods and results: We conducted an *in vitro* NS3/4A assay to screen for ginsenosides showing inhibitory effect to HCV NS3/4A protease activity. Ginsenoside Rg3 caused notable dose-dependent reduction on *in vitro* HCV NS3/4A activity and did not show cell cytotoxicity in human hepatoma cells. Using Huh7.5.1 cells infected with JFH1 HCVcc, we further verified that ginsenoside Rg3 significantly suppresses HCV RNA replication by qRT-PCR and Western blot analyses. We also investigated the anti-apoptotic activity of ginsenosides in the cells undergoing HCV-induced apoptosis. We demonstrated that ginsenoside Rg3 effectively restored HCV-induced increase in PARP cleavage and the expression of TNF-α mRNA, decline in NF-κ B activity, and cleavage in MAVS protein. Ginsenoside Rg3 resulted in the decline of HCV-induced increase of antioxidant enzymes. Treatment of HCV-infected cells with ginsenoside Rg3 resulted in the inhibition of virus-induced