Previously, we have established one e library by introducing 8 randomized sequences in upper stem and selected out a series of RNA aptamers with higher affinity to P protein based on the in vitro SELEX in duck hepatitis B virus (DHBV) system. Interestingly, we observed that only part of these stronger binders support priming. In order to explore structural determinants within e, all selected aptamers were subjected to RNA structural mapping. We found that an undamaged bulge is essential for initiating priming. On the other hand, our study demonstrates that the stronger binders with damaged bulge structure are able to be potentially used as decoys for antiviral therapy by interfering with the protein-priming process of wild type DHBV. The given data also enable us to understand P-e interactions during HBV replication in details.

**PP-012** Frequency of hepatitis B virus DNA in anti-HBc positive, HBsAg negative blood donors in Rasht, Northern Iran

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One of the important factors in safety of blood transfusion is to use an additional sensitive screening test to identify blood-born infective agents (like HBV). Although HBsAg screening reduces the risk of HBV transmission, but HBsAg negative blood donors may yet transmit HBV infection. The aim of this study was to assess the possibility of using anti-HBc as a screening test to improve the detection rate of HBV infection in donated blood in city of Rasht, North of Iran.

A total of 2,041 blood samples with negative result for HBsAg, Anti-HCV, Anti-HIV I, II and RPR were collected and used to detect anti-HBc Ab. If the result of anti-HBc was positive, the samples were evaluated for HBV DNA detection. DNA extraction was done by using a commercial DNA extraction kit (Qiagen) and analyzed using a commercial quantitative real-time PCR kit (artus HBV LC PCR Kit). The positive sample was rechecked with a reliable and sensitive homemade PCR kit.

The prevalence of anti-HBc Ab positive was 78/2041 (0.38%) by total anti-HBc Ab kit. One out of 78 anti-HBc Ab positive sample was positive for HBV DNA when was checked by real-time PCR and re-checked by homemade kit.

This study showed that the anti-HBc Ab positivity is lower than many parts of Iran in Rasht. As anti-HBc Ab positive blood donors may be a potential source of HBV transmission further study for evaluation of HBV DNA in anti-HBc positive blood units is strongly recommended.

**PP-013** New perspectives in immunotherapy of hepadnavirus chronic infection

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**Background and Aims:** The experimentation of antivirals, new vaccine formulations and adjuvanted antigens, able to elicit a specifically targeted cellular response or to interfere with viral replication to break tolerance, is crucial for immunotherapeutic approaches of Hepatitis B Virus (HBV) infection. In this study we have applied the well recognized preclinical model of the HBV, the Woodchuck (Marmota monax) chronically infected from Woodchuck Hepatitis Virus (WHV) with the aim to investigate the neutralization and antiviral effects of Immune Genic Complex (IGC) composed by preS/S antibodies and WHV particles in healthy and in WHV chronically infected animals.

**Methods:** The characterized and quantified neutralization mixture or IGC, was intravenously and intradermically administered to four WHV negative and five WHV chronic carriers. One animal was used as infection control. Electro-chemi-luminescence immuno-assay (ELecsys, Roche Molecular Diagnostics) to detect antibody to WHV core antigen (WHcAb) and WHV “e” antigen (WHeAb), and WHV “e” antigen (WHeAg) was used. WHV Real-Time PCR was applied to determine the viral load every two weeks after IGC administrations and PBMc proliferation assays was performed making use of Core and PreS/S HBV region epitopes.

**Results:** The IGC administration obtained with the lowest preS/S antibody amount (2.5 mIU) showed, in WHV negative woodchucks, better neutralization effects in terms of WHcAb and viral load concentrations in all treated animals in respect to the controls. The IGC administration in WHV chronic carriers induced strong antiviral effect in three out of five animals. The viral phylogenetic analysis (MEGA 4 program) of PreS/S region showed, in one animal, significant variation during follow up.

**Conclusions:** This newly designed experimental protocol will be at the basis for further developments in the field of improvement of antigenic adjuvancy and of therapeutic vaccines formulations.

**PP-014** Entecavir treatment of chronic hepatitis B patients who are exposed to lamivudine

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**Background and Aims:** In treatment of naive chronic hepatitis B (CHB) patients, Entecavir shows good long term viral suppression and low rate of development of resistance. Its role in patients of CHB, who are exposed to lamivudine therapy, is not clear. We studied the efficacy of Entecavir in this group of patients.

**Methods:** Ten patients who showed breakthrough during lamivudine therapy, were treated with Entecavir (1 mg/day). The dose was modified in patients of renal failure as required. HBV DNA quantitative levels were done 3 monthly to assess adequacy and duration of viral suppression. Assessment for Entecavir resistance defined as decline of $<1\log_{10}$ copies/ml in 12 weeks or increase in HBV DNA by 1 or 2 log levels were the primary end points.

**Results:** Of 10 patients (8 male; 8 HBeAg positive, 5 with compensated Liver Cirrhosis) who received Entecavir, phenotypic resistance to Entecavir was seen in 5 (50%) over a mean period of 12 ± 4.58 months. Of these 5, 4 were
on 1.0 mg/day dose. Median follow up of patients was: 11.5 ± 4.13 months (1.0 mg dose) and 9.25 ± 4.78 months (0.5 mg dose). Four of six patients (66%) who received 1 mg/day Entecavir, developed resistance over a median follow up of 11 months. Of the four patients who received 0.5 mg/day entecavir, one (25%) developed resistance over follow up of 15 months.

**Conclusions:** Entecavir therapy in Lam resistant CHB patients was associated with a high rate of inadequate viral suppression and development of resistance. The dose of Entecavir (0.5 or 1.0) did not seem to have much effect in this group of patients.

**PP-015 Management of chronic hepatitis B (CHB) antiviral resistance – the Asia experience**

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**Background:** Resistance to CHB antivirals is a challenge in the long term. Clinical benefits are compromised once resistance develops and cross-resistance limits treatment options.

**Methods:** Current study randomly selected 575 CHB-treating physicians from China, South Korea, Taiwan, and Thailand where HBV infection is a substantial clinical and financial burden. The study comprised two components designed to assess: (1) current practice in diagnosing antiviral resistance and its management; and (2) financial impact of managing “suspected” resistance.

**Results:** 95–100% of interviewed physicians had encountered antiviral resistance in the first-line setting. Although 68% agreed that prevention of resistance is the most important strategy, 5% did not consider resistance a critical issue. While direct antiviral resistance tests are readily available in South Korea, access is limited in most Asian countries. DNA and ALT tests are the common parameters used to identify suspected resistance in China, Taiwan, and Thailand. Management of suspected resistance (drug cost not included) costs an additional USD 709, 580, 572 and 329 in South Korea, China, Taiwan and Thailand respectively, during the first year immediately after it is identified.

**Conclusion:** Antiviral resistance is a major concern among physicians in Asia, especially during long-term therapy. While access to direct resistance testing is limited in most countries, indirect methods are widely used to guide CHB management decisions. In choosing an oral antiviral to initiate therapy, resistance profile of antiviral is a crucial factor to consider since drug resistance compromises clinical benefit and incurs additional cost.

**PP-016 Effects of metabolic syndrome and related factors in patients with chronic hepatitis B**

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**Objective:** The aim of this study is to investigate the viral and host factors of metabolic syndrome in chronic hepatitis B patients.

**Methods:** We studied 89 patients with untreated chronic hepatitis B, who were from Beijing Ditan hospital in 2005 to 2007. According to the diagnose of metabolic syndrome, two groups were established: group with MS (+MS) and group MS (−MS). They were compared with demographic, biochemical, metabolic and histological characteristics.

**Results:** The mean age, BMI and gender were not statistically significant difference (p > 0.05) between the two groups. In the group of chronic hepatitis B with MS, the levels of FINS, HOMA-IR, HOMA-b, TG, and the positivity of HBeAg were significantly higher than those in the group without MS (P < 0.05). The degree of hepatostasis in the group with MS is significantly more severe than that in the group without MS (P < 0.001).

**Conclusion:** Metabolic syndrome in chronic hepatitis B patients is closely correlated with insulin resistance and glycometabolism, and less effect of viruses. That may be the main characteristic of metabolism in patients chronically infected with the hepatitis B virus.

**PP-017 The research of the cloning characteristics of the CDR3-distinct of the TCR Vβ gene of the CD8+T cell of the HBV infected person**

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**Objective:** This paper is an attempt to do research on the cloning characteristics of the CDR3-distinct of the TCR Vβ gene of the CD8+T cell of the HBV infected person.

**Methods:** The PCR approach of poly-primer is applied and meanwhile the many pieces of the CDR3-distinct of the TCR Vβ gene are amplified. HR-Agarose Gel Electrophoresis is employed to detect the cloning characteristics.

**Result:** The HBV infected person’s cloning of the TCR Vβ9 and Vβ14 of the CD8+T cell is obviously higher than the normal control group (p < 0.01).

**Conclusion:** The HBV infected person has the cloning changes of the TCR V(β)9/14 of the CD8+T cell, which have an effect on the mediating of the Liver Injury.

**PP-018 HIV/Hepatitis B Co-infection among Nepal MSM/W**

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HIV/AIDS is one of the most public health problems of this century. Moreover, co-infection with the Hepatitis B virus is likely to become a major health care catastrophe. This study was carried out White Feather Nepal and different 4 Laboratories with the objective to determine HIV/Hepatitis B co-infection among 544 sexual minorities from Katmandu including Men Sex workers, gay men and transgender.

**Methods:** HIV status was determined both by Rapid and ELISA techniques. HIV sero-positive samples were further tested for Hepatitis B Surface Antigen (HBsAg) by ELISA. Data obtained from laboratories findings and questionnaires were statistically analyzed by using SPSS 11.5.

**Results:** Out of 544 HIV suspected individuals, 221 (40%) were diagnosed as HIV positive, of which, 187 HIV positive sera were tested for Hepatitis B. In HIV positive individuals, sexual transmission was the most common route (77.4%), followed by IDUs (12.2%). Of 187 HIV positive individuals, 15% were diagnosed to be co-infected with Hepatitis B. Highest prevalence of HIV/Hepatitis B co-infection (46.4%) was observed in age group 26–35 years, followed by 16–25 years and the co infection rate was found to be higher (78.6%) in married individuals than in unmarried (17.9%). Lower rate of co-infection (17.9%) was detected among the individuals vaccinated against Hepatitis B than unvaccinated (82.1%).