tion, all with p < 0.01. In CHB patients, MIF, TGF-β, IL-17 and ALT levels were positively correlated (r = 0.725, 0.687, 0.831; p < 0.01, 0.05, 0.01, respectively), IL-10 and ALT was negatively correlated (r = -0.562, p = <0.05). .Multivariate analysis showed that the levels of increment of MIF, TGF-β and IL-17 were associated with the increment of HBV DNA load and severity of liver disease.

Conclusion: There is a marked correlation between the concentration of MIF, TGF-β and IL-17 and the severity of liver disease and viral replication. Increased serum levels of MIF, TGF-β and IL-17 correlate positively with the severity of liver disease and active viral replication in chronic HBV infection.

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Decline of hepatitis B virus load correlate with increase of Th1/Th2 immunity in chronic hepatitis B patients during long-term treatment with entecavir

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Background: Chronic hepatitis B is a serious health problem worldwide with a substantial minority of patients experiencing premature death due to end-stage liver disease and/or hepatocelluar carcinoma. Antiviral therapy may help prevent complications of chronic hepatitis B, and seven agents are currently approved in many countries. Of these agents, five are nucleos(t)ide analogs that all have a risk of antiviral drug resistance with long-term use. Entecavir treatment has significantly improved the outcome of chronic hepatitis B virus (HBV) infection and with a lowest resistance risk. However, it remains largely unknown how immune system responds to the treatment. The aim of the present study is to investigate dynamic fluctuations of serum viral load and Th1/Th2 immunity of chronic hepatitis B patients and their correlation during long-term entecavir therapy.

Methods & Materials: Sixty-two patients received entecavir 0.5 mg/d therapy. Serum HBVDNA load was measured by Real-Time-PCR, and the levels of cytokines and T helper 1 (Th1) and 2 (Th2) cytokine producing T-cells by flow cytometry during 260 weeks of the treatment. Multilevel modelling was used to analyse the relationship between these variables.

Results: Of the 62 patients, all HBeAg positive and with detectable HBVDNA, the majority (85.6%) had serum levels of HBVDNA over 10^7 copies per milliliter. Th1/Th2 cytokines producing T-cells were significantly lower in chronic hepatitis B patients as compared with normal individuals. HBV viral load dropped sharply during the first two weeks. In 31 and 48 patients, the level became undetectable from week 24 and 48, respectively. Using pre-therapy level as the reference, a significant increase in Th1/Th2 cytokines producing T-cells and serum cytokine levels were found from week 12. These parameters and Th1/Th2 balance steadlly improved throughout the 260 weeks. Multilevel analyses showed that the level of decrement of HBVDNA load was associated with the increment of Th1/Th2 activities only in the later period (12-260 week). In contrast, Th1/Th2 cytokines producing T-cells remained lower in one patient detected with entecavir resistant HBV mutation.

Conclusion: Decline of HBVDNA load correlate with increase of Th1/Th2 immunity in chronic hepatitis B patients during a long-term treatment with entecavir.

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Clinical characteristics and virological responses to pegylated interferon plus ribavirin combination therapy in the hepatitis B and C virus coinfected patients

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Background: Hepatitis B virus (HBV) and hepatitis C virus (HCV) infections are among the most common causes of advanced chronic liver disease worldwide. HBV/HCV co-infection is not uncommon and the patients with HBV/HCV co-infection have an increased risk of cirrhosis, hepatocellular carcinoma (HCC), and even death. The combination of pegylated interferon (Peg-IFN) plus ribavirin (RBV) is the current standard of care for naïve chronic hepatitis C patients, achieving a high sustained virological response (SVR) rate. The aim of present study is to explore the clinical characteristics of HBV/HCV

co-infected patients and the impact of co-infection on the efficacy of Peg-IFN/RBV combination therapy.

Methods & Materials: The clinical characteristics of HBV/HCV co-infected patients and the virological responses to Peg-IFN/RBV combination therapy in 89 HBV and HCV co-infected patients were retrospectively analyzed. The primary outcome measurement of antiviral treatment was SVR (seronegative of HCVRNA throughout the 6-month post-treatment follow-up period).

Results: Of the 89 HBV/HCV co-infected patients, HCV strains were dominant in 76 patients (85.4%), while HCV and HBV strains were both dominant 13 patients (14.6%). HBV DNA load level and HBeAg positive rate in HBV/HCV co-infected patients was significantly lower than that in HBV mono-infected group ($p < 0.01$, 0.001, respectively). Serum levels of ALT and AST in co-infected patients were obviously higher than that in mono-infected group ($p < 0.001$, 0.001, respectively). The SVR rate was significantly lower in the HBV/HCV co-infected patients compared to the HCV mono-infected patients ($p < 0.05$). However, the significantly lower rate of SVR in the co-infected group was observed among genotype-1 patients ($p < 0.05$) but not among genotype-2/3 patients ($p > 0.05$). Partial early virological response (pEVR) rates and virological response at the end of treatment (ETVR) rates were significantly higher in patients co-infected with genotype 1 of HCV and HBV than those in HCV mono-infected patients ($p < 0.01$, 0.01, respectively). No differences in rapid virological response (RVR), complete early virological response (cEVR), and relapse were observed between co-infected patients with non-genotype 1 of HCV and HBV and mono-infected patients with non-genotype 1 of HCV.

Conclusion: Co-infection with HBV and non-genotype 1 of HCV has no impact on virological responses to Peg-IFN/RBV combination therapy.

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Respiratory viral detection by multiplex PCR in adults requiring ICU admission: Comparison admitting diagnosis, premorbidity and mortality of those with influenza and another respiratory virus

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Background: Winter influenza planning is a part of health services' preparation for the annual increase in hospital admissions due to respiratory virus infections in New Zealand. The diagnostic virology service for Canterbury District Health Board's hospitals extended respiratory pathogen testing in 2012 using a multiplex PCR test.

This study is an audit over 2 years of the outcomes of patients requiring ICU admission for respiratory support, with either influenza or another respiratory virus diagnosis.

Methods & Materials: Respiratory samples were tested using the Fast-track Diagnostics (FTD) respiratory pathogen multiplex PCR for the detection of 19 viruses.

The Laboratory Information System was searched for records of all admitted patients with a PCR respiratory virus diagnosis in 2012 and 2013. Adult patients, 18 years and over requiring Intensive Care Unit respiratory support, were included.

The hospital electronic database was searched for patient admission diagnosis, chronic illness, length of admission, antibiotic prescribing and mortality related to the ICU admission.

Results: A total of 782 patients admitted to hospital had a respiratory virus diagnosis. Of 312 adult patients with influenza, 15 required ICU support, of whom two died (13.3%), while, of 470 adult patients with another respiratory virus, 35 required ICU support of whom 10 died (28.6%).

The most common admitting diagnosis was "acute exacerbation COPD" and "Pneumonia", comprising 4 and 5 respectively for the Influenza group, and 12 and 13 in the other virus group.

The most common premorbid condition was COPD, including 5 (33%) of the influenza group and 15 (43%) of the other virus group.

Length of stay for patients in the Influenza group was median 5 days (1-30 days) and other virus group median 5 days (1-24 days).

All but nine ICU patients received one or more antibiotics during admission and eight of 15 patients with influenza received Oseltamivir.

Conclusion: Adult patients with viral respiratory infections other than influenza and requiring ICU admission have similar length of stay, but increased mortality, as those with influenza in ICU,. COPD is an important premorbid condition for severe outcomes for all respiratory virus infections. Winter influenza planning should include the planning for admission of patients with non-influenza respiratory viruses.

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