Background: There have been concerns about whether biomarkers measured in the peripheral vein (PV) reflect the dynamic turnover of liver fibrosis. We compared the accuracy of biomarkers checked in the hepatic vein (HV) and PV samples in predicting advanced fibrosis (AF).

Methods: A total of 101 patients with chronic viral hepatitis that underwent hepatic venous pressure gradient (HVPG) measurement, paired PV-HV samplings, and liver biopsy were prospectively enrolled.

Results: Thirty-nine patients had AF (META VIR F3-4). The mean level of hyaluronic acid (HA) (107.2 [144.3] vs. 43.8 [76.6]) and tissue inhibitor of metalloproteinases-1 (TIMP-1, 232.3 [82.7] vs. 194.9 [54.8]) were significantly higher in the PV than in the HV (p<0.01). By contrast, apolipoprotein A1 level (Apo-A1, 105.1 [4.6] vs. 130.4 [21.6]) was lower in the PV compared to the HV (p<0.01). The levels of haptoglobin, matrix metalloproteinase-2 (MMP2), and procollagen III terminal peptide (PIIINP) did not differ between the PV and HV. In the PV and HV, predictive logit-models for the diagnosis of AF are different (-3.13+0.017×MMP2-0.019×haptoglobin vs. -0.72+0.007×HA-0.018×haptoglobin). The area under the receiver operating characteristic curve (HV/PV) were 0.84 for the HVPG, 0.81/0.77 for the logit-model, 0.78/0.76 for the HA, 0.72/0.66 for the PIIINP, 0.72/0.65 for the MMP2, 0.59/0.66 for the TIMP-1, 0.56/0.48 for the Apo-A1, and 0.27/0.32 for the haptoglobin, respectively.

Conclusions: Biomarkers measured in the PV may not be sufficient to evaluate AF. Therefore, for the high degree of accuracy, its combination with other diagnostic modalities is required.

Keywords: Liver Fibrosis, Biological Markers, Hepatic Veins, Extracellular Matrix, Diagnosis,

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**0-038**

**Bioimaging by Quantum-dot and anti-fibrotic therapy using RNA interference against TGFβ in liver cirrhosis mouse model**

Sung Woo Hong1, Wonhee Hur1, Jung Eun Choi1, Kwang Soo Lyoo1, Sei Kwang Hahn2, Seung Kew Yoon3

1Department of Internal Medicine & WHO Collaborating Center of Viral Hepatitis, The Catholic University of Korea, Seoul, Korea; 2Departments of Materials Science and Engineering, Pohang University of Science and Technology (POSTECH), Kyungbuk, Korea

Background: Liver fibrosis or cirrhosis is one of the representative liver diseases with a high morbidity and mortality worldwide. Nevertheless, the targeting technologies of liver or liver cirrhosis don’t come out until today. In this study, we established liver targeting technology and investigated the therapeutic effect of hyaluronic acid (HA) conjugated TGFβ1 siRNA (siTGFβ1-HA). To know whether liver targeting, QDot-HA was injected normal mice and cirrhotic mice. Liver targeting was detected by real-time bio-imaging. Furthermore, siTGFβ1-HA was injected cirrhotic mice to confirm therapeutic effect. And then, therapeutic effect was determined using western blot, ELISA and Histological analysis (H&E, Masson’s trichrome, immunohistochemicals for Desmine and PCNA).

Methods: HA-QDot conjugates with an HA modification degree of about 22 mol % was synthesized by amide bond formation between carboxyl groups of QDots and amine groups of adic acid dihydrazide modified HA (HA-ADH). To know whether liver targeting, QDot-HA was injected normal mice and cirrhotic mice. Liver targeting was detected by real-time bio-imaging. Furthermore, siTGFβ1-HA was injected cirrhotic mice to confirm therapeutic effect. And then, therapeutic effect was determined using western blot, ELISA and Histological analysis (H&E, Masson’s trichrome, immunohistochemicals for Desmine and PCNA).

Results: According to in vitro cell culture tests, HA-QDot conjugates were taken up more to the cells causing chronic liver diseases such as hepatic stellate cells (HSC-T6) and hepatoma cells (HepG2) than normal hepatocytes (FL83B) After tail-vein injection, HA-QDot conjugates were target-specific, being delivered to the cirrhotic liver with a slow clearance longer than 8 days. Expression of TGFβ was more decreased in siTGFβ-HA complex than siTGFβ-PEISS complex injected mice. Moreover, the therapeutic effect of liver fibrosis was significantly increased in siTGFβ-HA complex compared with siTGFβ-PEISS complex injected mice. Conclusion: These results demonstrated that the feasibility of HA derivatives as novel target specific and long acting drug delivery carriers powerful tool in liver and that application of HA conjugating contribute to the therapy of liver fibrosis through enhancement of efficient delivery siTGFβ.

Keywords: Liver cirrhosis, Bioimaging, Hyaluronic acid, TGFβ1, Quantum dots

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**0-039**

**Anti-fibrotic effects of L-2-Oxothiazolidine-4-carboxylic acid and modulation of transcription factor Nrf2 in rats**

In Hee Kim1,2, Peipei Hao1, Yunpeng Wang2, Mi-Jin Lee2, Goung-Ran You2, Seong Hun Kim1,2, Sang Wook Kim1,2, Seung Ok Lee1,2, Soo Teik Lee1,2, Dae Ghon Kim1,2

1Department of Internal Medicine, 2The Research Institute of Clinical Medicine, Chonbuk National University Medical School and Hospital, Jeonju, Jeonbuk, South Korea

Background: L-2-Oxothiazolidine-4-carboxylic acid (OTC) is a cysteine prodrug that maintains glutathione (GSH) in tissues. The present study was designed to investigate the anti-fibrotic effects of OTC and modulation of transcription factor Nrf2 in rats.

Methods: Male Sprague-Dawley rats were divided into 4 groups including control, TAA, TAA+OTC 80 and TAA+OTC 160 groups. TAA was intraperitoneally injected as dissolved in