Expression and significance of Type XV Collagen in Hepatocellular Carcinoma Tissue

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Surgical resection is the most effective treatment against hepatocellular carcinoma (HCC). But there are many unresectable cases with liver dysfunction, because HCC often develop from the basis of cirrhosis. Therefore, they are needed to elucidate the mechanisms and to establish the prevention way of hepatocellular carcinogenesis.

These days, a proteomics analysis was performed with two types of hepatocellular carcinogenesis mouse models, PDGF-C transgenic model and PTEN null model. They revealed that expression of type XV collagen (COLXV) is increasing through the process of hepatocellular carcinogenesis. COLXV is reported to exist in capillary membrane and arterial smooth muscle, and be absent from hepatocytes and sinusoid vessels, and not known on function enough.

The aim of this study is to analyze this phenomenon in human HCC tissues and to explore the possibility of clinical application. The subjects of this study are 63 samples which underwent surgery of HCC at Okayama University Hospital. We evaluated expression of COLXV by immunostaining of paraffin sections, and the result was reported on this meeting last year. In all cases, COLXV expression was detected immunochemically only in tumor region, not in non-tumor region. COLXV staining in tumor region showed a clear contrast against that in non-tumor region. This seemed to be possible that COLXV would be used as assistance of pathological diagnosis in the short term, and as prediction for effect of PDGF receptor and mTOR inhibitors for HCC, also the key to exploring prevention way of hepatocellular carcinogenesis in the long term.

Furthermore, the COLXV expression was increased in human HCC tissues, especially around endothelial of sinusoid-like vessels histologically. It has been known that fenestrated liver sinusoid vessels were converted into not fenestrated sinusoid like vessels in HCC tissues. We considered the results suggested that sinusoid vessels were lined by COLXV and switched into sinusoid like vessels. To confirm that, we performed additional histological and molecular biological analysis. We will report the results.