ing prognosis of HCC after operation. The purpose of this study is to present the characteristics of HCC with bile duct invasion and to compare the prognosis of that with other prognostic factors. **(Methods)** Between January 2009 and December 2010, 169 patients underwent hepatic resection at Seoul National University Hospital (SNUH) for HCC. We reviewed all patients' pathologic tumor grade data (TNM staging by AJCC), radiologic data to determine the presence of bile duct invasion. And other preoperative clinical information such as age and sex, epidemiologic data (underlying liver disease), biochemical data (AFP, PIVKA-II), tumor size and numbers, preoperative treatments were collected to compare the implications of factors for prognosis. We compared overall survival and recurrence free survival to evaluate the prognosis of bile duct invasion. **(Results)** Among 169 patients, 9 patients were improved to have bile duct invasion on pathologic and radiologic findings. 90 patients were recurred after operation on 2 year follow up, and 17 patients were expired. By comparing the characteristics of the groups with and without bile duct invasion The median age, preoperative tumor size and T-stage had no significant differences. The group with bile duct invasion showed more vascular invasion (7 in 9 (77.7%), than without bile duct invasion group (43,5%). For prognosis, the patients with bile duct invasion showed poor prognosis than without invasion. In multivariant comparison with other prognostic factors, bile duct invasion improved not to have affect for the prognosis of HCC independently, but by subgrouping T-stage, the bile duct invasion was proved to be the independent factor for the prognosis of HCC in early stage (T1 and 2). **(Conclusion)** Bile duct invasion accompanies vascular invasion in most cases. Bile duct invasion itself is not the independent prognosis factor for HCC. But in early HCC (T1 and T2) with bile duct invasion has poor prognosis.

간담췌 O-Ⅲ-1

Conversion to entecavir monotherapy from combination therapy with hepatitis B Immunoglobulin for hepatitis B prophylaxis in long term survivor after liver transplantation: Prospective single center trial

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(Purpose) As a novel hepatitis B prophylaxis after liver transplantation, Combination therapy of intravenous Hepatitis B immunoglobulin (ivHBIG) and nucleoside (NA) analogue, has been the best method for HB related liver disease. However, because of many controversy of ivHBIG for prophylaxis, we evaluated efficacy of entecavir (ETV) monotherapy after discontinuation of ivHBIG in long term survivor after LT. **(Methods)** Between February 2009 and December 2011, 20 candidates (12.9%) were prospectively enrolled among 154 consecutive LT recipients for HB related liver disease. All patient (1) had HB related liver cirrhosis, (2) Survived more than 2-years after LT, (3) Underwent post-LT HB prophylaxis over one-year combination therapy with ETV (0.5mg daily) and ivHBIG (10,000 IU per 5 weeks). Additional inclusion criteria was any one of the follows; (a) NA-naïve patient, (b) If, have NA-treated history, Negative YMDD Mutation (c) Negative HBe antigen (HBeAg) and HBV DNA (<100 IU/mL), Primary endpoint was the 2-year recurrence rate of Hepatitis B (reappearance of HBsAg or HBV DNA). **(Results)** All patients were followed up without HB recurrence during the second year. Only one recipient (5%) experienced HBV

DNA titer elevation at 37.3 month after conversion to ETV monotherapy. But it was decreased spontaneously without any intervention. 1 patients (5%) were dropped out during the second year due to advanced gastric cancer with liver metastasis. Recurrence free survival rate of the 19 patients were 100% at two-year post-transplant. No side effects related with ETV monotherapy were noted during the follow-up period. **(Conclusion)** ETV monotherapy after discontinuation of ivHBIG combination therapy 2-year after liver transplantation was safe and effective in selected patient.

간담췌 O-Ⅲ-2

What is the best combination of immunosuppressants for hepatocelluar carcinoma?

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(Purpose) To evaluate the effect of combinations of various immunosuppressants on hepatocellular carcinoma cell lines and its tumor suppression effect in a mouse tumor model. **(Methods)** The direct anti-cancer effect of each immunosuppressant; sirolimus (S, 5ng/ml), tacrolimus (T, 5ng/ml), MMF (M, 500ng/ml) and its combinations of ST, SM were analyzed in vitro by the MTT assay in Huh7 hepatocellular cell lines. Their effect was scored on relative cell line viability out of 100, compared with non-immunosuppressant control group, 2 days after exposure. And we investigated the weekly change of tumor volume comparing with it at the starting time of immunosuppressants in a nude mouse tumor model for 4 weeks. **(Results)** In the direct effect for the cell line of Huh7, each S, M, ST and SM treated group showed cell suppression of 64.9±38.2%, 69.4±36.7%, 70.5±51.1%, 59.9±48.1% respectively. But, T group did not effect on the tumor cell suppression with relative viability 98.5±42.2%. The mean value of increased tumor volume ratio in control, S, T, M, ST and SM groups was 277.6±163.5, 105.3±58.2, 160.1±145.5, 171.5±124.7, 108.9±71.1 and 81.0±56.1 respectively in 2 weeks, 485.5±232.6, 179.8±120.1, 257.1±255.2, 301.9±219.7, 131.2±79.0 and 155.8±140.0 in 3 weeks, 1001.1±329.5, 236.9±178.1, 415.0±481.7, 434.1±294.2, 184.9±100.5 and 231.6±189.5 in 4 weeks. ST and SM did not showed significant differences of tumor suppression. **(Conclusion)** SM group has significant tumor suppressive effect in Huh 7 cell lines. And S, ST and SM treated group showed the strong suppressive effect on tumor growth in this experimental study.

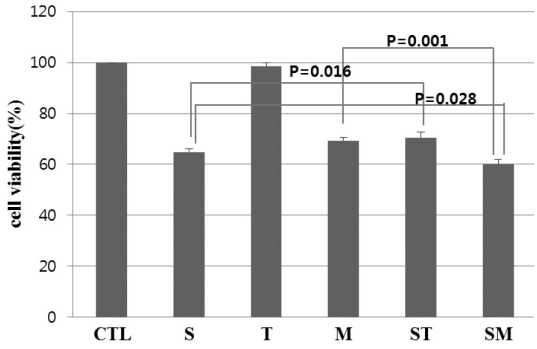

Fig. 1. Cell viability according to immunosuppressant combinations

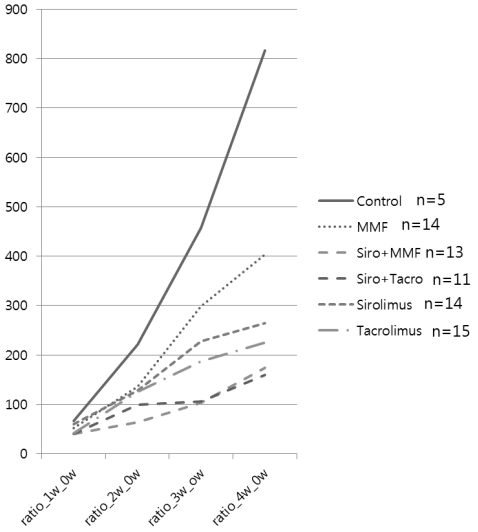

Fig. 2. Weekly change of increased tumor volume ratio

간담췌 O-Ⅲ-3

Does perioperative chemotherapy prolong survival of patients with colorectal cancer liver metastasis?

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(Purpose) Even though modern chemotherapeutic regimens for colorectal cancer liver metastasis have improved response rate significantly, survival benefit for patients undergoing surgical resection has not been clearly shown. The purpose of this study is to evaluate effects of perioperative chemotherapy on survival of patients who underwent liver resection for colorectal cancer liver metastasis. **(Methods)** Among 353 patients treated with hepatic resection for colorectal cancer liver metastasis between May of 1990 and December of 2011, patients who had equal to or more than 6 cycles of chemotherapy were identified from database and compared to patients who had surgery only. SAS was used for statistical analysis. **(Results)** Total 232 patients were identified. 163 patients (Group FOLFOX) received folinic acid, 5-fluorouracil and oxaliplatin, and 25 patients (Group 5FL) received 5-fluorouracil and folinic acid. 44 patients received surgery only. Mean follow-up period was 41.2 months. In surgery alone group, 45.5% (n=20) patients received surgery before 2005 and 54.5% (n=24) received in or after 2005. In contrast, 88% (n=22) of 5FL group received surgery before 2005 and 72.4% (n=118) of FOLFOX group received surgery in or after 2005 In Cox regression analysis for overall survival, female sex (HR=1.88, p=0.02), age (HR=1.03, p=0.003), nodal metastasis (HR=3.51, p<0.0001), positive resection margin (HR=3.98, p=0.001), and major hepatectomy more than 3 segments (HR=2.66, p<0.0001) were identified as risk factors. Moderate or well differentiated colon cancer (HR=0.21, p<0.001), surgery in or after 2005 (HR=0.46, p=0.003), and perioperative FOLFOX chemotherapy (HR=0.43, p=0.013) were identified as favorable factors.In Cox regression analysis for disease-free survival, moderate or well differentiated colon cancer (HR=0.255, p<0.0001), metachronous liver metastasis (HR=0.469, p=0.0094), and surgery in or after 2005 (HR=0.468, p=0.0048) were identified as favorable factors. Preoperative carcinoembryonic antigen greater 50 (HR=1.845, p=0.0755) and hepatectomy more than 3 segments (HR=1.703, p=0.0527) showed strong trend as risk factors. **(Conclusion)** Comparing to 5-FU/folinic acid chemotherapy or surgery alone, perioperative FOLFOX chemotherapy of more than 6 cycles can benefit overall survival of patients but not disease-free survival.

간담췌 O-Ⅲ-4

A comparing of simultaneous versus staged major liver resection for colorectal cancer liver metastases

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(Purpose) The optimal surgical strategy in colorectal cancer liver metastases (CRLM) remains still controversial. Several centers are recommend staged operation because high rate of complications, longer operation time and delayed hospitalization in simultaeneous major liver resection (MLR) group. The aim of this study was to compare outcomes between simultaneous MLR and staged MLR to CRLM. **(Methods)** From June 2003 to September

2012, 80 patients underwent MLR for CRLM. 44 patients underwent simultaeneous hepatectomy and colorectal Surgery, and 36 patients underwent staged hepatectomy. Clinicopathologic, operative, and perioperative data and complications were evaluated. **(Results)** All patient and tumor characteristics are similar in both group. The simultaneous group had a longer rate of operation time (437±136min vs. 336±111min, P=0.001). Estimated blood loss (836.3±836.5 ml vs 739.4±520.7 ml, p=0.547), transfusion rate (34% vs 27%, p=0.631) and hospitalization (15.7±10.2 day vs 13.9±7.5, p=0.692) were not significant difference in both group. Mortality (one patient in simultaneous group), morbidity (30% vs 25%, p=0.802), and colonic movement normalization rates were similar in the two groups. Considering both surgical procedures (colorectal, p=0.529 + liver resection, p=0.626), there was no significant difference between two group. **(Conclusion)** MLR can be feasibly and safely performed in selected patients at CRLM with similar perioperative outcomes and morbidities.

간담췌 O-Ⅲ-5

Analysis of the risk factors for early cancer recur or death within 1 year after liver resection in patients with colorectal cancer liver metastasis

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(Purpose) Curative liver resection is currently accepted as the most effective treatment for patients with colorectal cancer liver metastases (CRLM). However, some patients have early recur or death within 1 year after liver resection. We analyzed the risk factors for early cancer recur and death. **(Methods)** Between May, 1990 and December, 2011, 279 patients who underwent hepatectomy for CRLM at our center. They were grouped ED (early death within 1 year after hepatectomy), NED (alive over 1 year after hepatectomy), ER (early recur within 1 year after hepatectomy) and NER (no recur over 1 year after hepatectomy). Risk factors for early cancer recur and death were analyzed. **(Results)** The ED Group included 26 patients, The NED group included 253 patients. The ER Group included 72 patients, The NER Group included 207 patients. The cause of death included cancer progression (n=20, 76.9%), hepatic failure (n=3, 11.5%), operation-related (n=2, 7.7%), and other (n=1, 3.8%). In univariate analysis, surgery alone without perioperative chemotherapy and poor differentiation of colorectal cancer were identified risk factors for early death, and metachronous metastasis, surgery alone without perioperative chemotherapy, tumor size ≥5 cm, multilobular metastasis, CEA>50 ng/ml, and poor differentiation of colorectal cancer were identified risk factors for early recur. Multivariate analysis, surgery alone without perioperative chemotherapy and poor differentiation of colorectal cancer were identified risk factors for early death and tumor size ≥5 cm, surgery alone without perioperative chemotherapy and poor differentiation of colorectal cancer were identified risk factors for early recur. **(Conclusion)** More adjunctive perioperative chemotherapy should be considered for patients with these risk factors (tumor size ≥5 cm and poor differentiation of colorectal cancer), because these patients tend to die or recur within 1 year after liver resection.