A total of 77 patients were enrolled to receive Guardix-SG® between July 2003 and March 2012, 142 patients in the guardix group and 130 patients in the non-bile leak group. The mean age was 59.3 and 55.4 years in the guardix and control group, respectively. Liver resection with broader cut surface area was more frequently performed in the guardix group and benign lesions in the control group. Liver resection was hepatocellular carcinoma in the guardix group and benign lesions in the control group. The area of the cut surface during liver resection and history of hepatitis were significant risk factors for bile leakage after liver resection. However, the use of anti-adhesion agent (Guardix®) did not increase the risk of bile leakage.

**Keywords:** Guardix, Bile leakage, Liver resection

**KP-03**

Does Anti-adhesive Agent (Guardix-SG®) Increase Risk of Bile Leakage after Liver Resection?: A Single ARM Prospective Study

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**Background/Aims:** Anti-adhesive agents have been used to reduce postoperative adhesion in various fields of surgery. Guardix-SG® is a poloxamer/alginate mixture that reduced the incidence of postoperative adhesions when applied in abdominal surgery in animal models and also in clinical trials. Bile leakage after liver resection remains a major cause of postoperative morbidity, often leading to a prolonged hospital stay, and need for additional diagnostic tests and interventions. The aim of this study was examine the effect of anti-adhesive agent (Guardix-SG®) on bile leakage after liver resection.

**Methods:** A total of 77 patients were enrolled to receive Guardix-SG® (guardix group) during liver resection between May, 2012 and August, 2013. The control group consisted of 77 patients who underwent liver resection without applying Guardix-SG® (historical control). Clinical data were collected including drain amount, bilirubin concentration in serum and drain fluid, area of cut surface, weight of the liver specimen and bile leakage rate. In addition, a separate analysis was performed between patients with (bile leak group) and without (non-bile leak group) postoperative bile leakage.

**Results:** The mean age was 59.3 and 55.4 years in the guardix and control group, respectively. The most common cause for liver resection was hepatocellular carcinoma in the guardix group and benign lesions in the control group. Liver resection with broader cut surface area was more frequently performed in the control group. However, there was no difference bile leakage rate (13% vs 18.2%, P=0.506) or hospital stay (13.02 vs 12.33, P=0.658) between the 2 groups. Of the total number patients in this study, there were 24 patients in the bile leak group and 130 patients in the non-bile leak group. The mean age was 59.33 years and 57.01 years in the bile leak group and non-bile leak group, respectively. On univariate analysis, a history of hepatitis was significantly associated with bile leakage (P=0.016). In addition, liver resection with broader cut surface area was associated with bile leakage (P=0.053). Application of anti-adhesive agent (Guardix-SG®) was not associated with bile leakage (P=0.376). On multivariate analysis, only history of hepatitis and liver resection with broader cut surface area was associated with bile leakage (P=0.016 and P=0.038, respectively).

**Conclusions:** The area of the cut surface during liver resection and history of hepatitis were significant risk factors for bile leakage after liver resection. However, the use of anti-adhesion agent (Guardix®) did not increase the risk of bile leakage.

**Keywords:** Guardix, Bile leakage, Liver resection

**KP-04**

Prognostic Relevance of Preoperative Hyperglycemia in Resected Pancreatic Ductal Adenocarcinoma

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**Background:** The present study was for clarifying the effects of preoperative uncontrolled hyperglycemia on the prognosis and recurrence pattern of pancreatic ductal adenocarcinoma (PDAC).

**Method:** Between July 2003 and March 2012, 142 patients who underwent operation in Seoul National University Bundang Hospital were enrolled. We retrospectively analyzed long-term outcome and recurrence patterns according to the presence of preoperative diabetes mellitus (DM), and glyco-sylated hemoglobin (HbA1c) level.

**Results:** The patients were divided into three groups according to the DM and HbA1c: non-DM (n=69), DM with HbA1c <9.0% (n=48), and DM with HbA1c ≥9.0% (n=25). There were no differences in age, presence of jaundice, preoperative biliary drainage, tumor site, tumor size, cancer stage, and postoperative complication among three groups (P>0.05). The 3-year overall survival (OS) rate (34.3% vs 40.2% vs 22.3%, P=0.028) and the 3-year disease free survival (DFS) rate (30.2% vs 34.2% vs 0%, P=0.036) showed significant differences in DM with HbA1c ≥9.0% group compared with other groups. The multivariate analysis revealed that DM with HbA1c ≥9.0% (P=0.007; relative risk [RR]=2.531; 95% confidence interval [CI] 1.287-4.978), angiolymphatic invasion (P=0.039; RR = 1.842; 95% CI 1.032-3.289) were independent factors of OS. For a while, DM with HbA1c ≥9.0% (P=0.018; RR=3.400; 95% CI 1.287-9.373) was not an associated factor. Concerning recurrence pattern, patients with preexisting DM showed a tendency of distant recurrence compared with non-DM patients (P=0.020).

**Conclusion:** Patients who have DM with preoperative HbA1c ≥9.0% experienced early recurrence and high mortality.