Official Title: Management of Spontaneous Ruptured Hepatocellular Carcinoma - Partial Hepatectomy and Prognosis: A Retrospective Study

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Statistical analysis plan

All of the analyses were carried out using SPSS 24.0 (IBM), and a two-sided $P<0.05$ was considered statistically significant.

1. A comparison of the clinicopathologic characteristics of all the patients between the partial hepatectomy group and the non-surgical treatment group before propensity score matching (PSM): there are (or no) significances for patients' characteristics before PSM.

   The variables are: age, sex, HBs-Ag (+), HCV-Ab, tumor size, tumor number, macroscopic vascular invasion (MVI), cirrhosis, portal hypertension, Child-Pugh grade, hemorrhagic shock, hemoglobin, red blood cell (RBC), transfusion during hospitalization, a-fetoprotein (AFP), aspartate aminotransferase (AST), albumin, total bilirubin, Barcelona Clinic Liver Cancer (BCLC) stage, sorafenib, 30-day mortality.

   Statistical analysis method: Pearson's χ^2 test, χ^2 test with Yates' correction, Fisher's exact test, Wilcoxon's rank-sum test and Student's *t* test.

2. Univariate and multivariate analysis of the predictive factors associated with overall survival (OS) before PSM: surgery or non-surgical treatment is (or not) an independent risk factor of overall survival.

   The variables included are: age, sex, tumor size, tumor number, MVI, cirrhosis, portal hypertension, treatment, hemorrhagic shock, distant metastasis, AST, AFP, platelet, hemoglobin, sorafenib, Child-Pugh grade.

Statistical analysis method: univariate analysis was performed using the Kaplan-Meier method compared by the log-rank test; multivariate analysis was performed using the COX regression model.

3. A comparison of the clinicopathologic characteristics of all of the patients between the partial hepatectomy group and the non-surgical treatment group after PSM: there is no significance for patients' characteristics after PSM.

   The variables included in PSM are: age, sex, tumor size, tumor number, MVI, cirrhosis, portal hypertension, hemorrhagic shock, hemoglobin, red blood cell (RBC), transfusion during hospitalization, a-fetoprotein (AFP), aspartate aminotransferase (AST), albumin, total bilirubin.

   Statistical analysis method: PSM, a caliper of 0.5, 0.3, 0.2, 0.1, 0.05, 0.02, 0.01 would be used.

4. Univariate and multivariate analysis of the predictive factors associated with OS after PSM: surgery or non-surgical treatment is (or not) an independent risk factor of overall survival.

   The variables inclued are: age, sex, tumor size, tumor number, MVI, cirrhosis, portal hypertension, treatment, hemorrhagic shock, distant metastasis, AST, AFP, platelet, hemoglobin, Sorafenib, Child-Pugh grade.

   Statistical analysis method: univariate analysis was performed using the Kaplan-Meier method compared by the log-rank test; multivariate analysis was performed using the

COX regression model.

5. Comparison of OS and recurrence-free survival (RFS) between the emergency partial hepatectomy group and the staged partial hepatectomy group.

   Statistical analysis method: univariate analysis was performed using the Kaplan-Meier method compared by the log-rank test.

6. Comparison of OS and RFS between the staged early partial hepatectomy group and the staged late partial hepatectomy group.

   Statistical analysis method: univariate analysis was performed using the Kaplan-Meier method compared by the log-rank test.

7. Difference in 30-day mortality of peritoneal dissemination between the groups at different times.

   Statistical analysis method: Pearson's $\chi 2$ test, $\chi 2$ test with Yates' correction and Fisher's exact test.

8. Univariate and multivariate logistic regression analysis of postoperative peritoneal dissemination.

   The variables inclued are: age, sex, tumor size, tumor number, MVI, cirrhosis, estimated intraperitoneal bleeding, Child-Pugh grade, tumor differentiation, resection margin, type of hepatectomy, timing of hepatectomy.

Statistical analysis method: univariate and multivariate logistic regression analysis.