

中文題目：分析末期腸道癌病患接受腫瘤減積手術和腹腔溫熱化學療法與術後感染相關之回溯性研究

英文題目：Analysis of the impact of infections among patients with advanced gastrointestinal neoplasm receiving Cytoreductive Surgery and Hyperthermic Intraperitoneal Chemotherapy(HIPEC) : A retrospective study

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Background

Growing evidence of efficacy of cytoreductive surgery with hyperthermic intraperitoneal chemotherapy (CRS+HIPEC) for advanced gastrointestinal malignancy with peritoneal metastasis has been reported in recent years. Nevertheless, the impact of post-operative infections on survival remains controversial. We analyzed the clinical manifestations, risk factors, and outcome of 558 patients who received CRS+HIPEC in a medical center of 18 years real world experience.

Methods :

This retrospective cohort study investigated the risk factors of infections in hospitalized patient who underwent CRS+HIPEC from Sep 1, 2003 to Sep 1, 2021. Baseline characteristic, peri/post-operative details were analyzed. Descriptive statistics were used to describe the clinical characteristics of patients received CRS+HIPEC, Kolmogorov-Smirnov test was used for testing if a variable follows a normal distribution. Group comparisons were performed using chi-square test for categorical variables and Mann-Whitney U tests for non-normally distributed continuous variables. Kaplan-Meier survival curves and Mantel–Cox test tests were used to evaluate 1-year overall survival in groups. Simple and multiple logistic regression analysis were used to calculate odds ratios (OR) and 95% confidence intervals (CIs) for association of the post-operative infections (POI). The α level was set at .05. Analyses were performed using IBM[®] SPSS[®] Statistics.

Results :

During the study period, a total of 691 patients were hospitalized to receive CRS+HIPEC. After excluding 133 patients with missing data, 558 patients were included in analysis (Figure.1). Of these, 200 (35.8%) had POI after CRS+HIPEC. The Kaplan-Meier survival curve with Mantel–Cox test ($P < 0.005$) showed that patients without POI had better 1-year overall survival rate than those with POI(Figure.2). Baseline characteristics between groups with/without POI are shown in table.1. Compared to group without POI, patient with POI are more likely to be old age ($P = 0.02$), ECOG performance status 2 or higher($P < 0.001$), having comorbidities such as hypertension($P < 0.001$), diabetes mellitus($P <$

0.001), abnormal liver, renal function($P < 0.001$), respectively. Likewise, regarding peri-operative details, patient with POI are more likely to have lower-albumin level($P < 0.0001$), multiple units of packed RBC transfusion ($P = 0.007$), FFP transfusion($P = 0.004$), gastrectomy($P = 0.05$), post-operative leakage($P < 0.0001$) or obstruction($P < 0.0001$), and longer operative time($P < 0.0001$). Interestingly, pre-operative and post-operative TPN administration both showed significant correlation with POI ($P < 0.001$).

In simple logistic regression analysis(Figure.3), the most significant association with infection are leakage (OR: 23.77, 95% CI, 11.56-48.86) and obstruction (OR:8.13, 95% CI, 4.07-16.24). Of note, post-operative TPN (OR:3.53, 95% CI, 2.43-5.12)showed higher incidence of infections in comparison with pre-operative TPN(OR:2.39, 95% CI, 1.67-3.40). By contrast, pre-operative high albumin level (OR:0.57, 95% CI, 0.42-0.77)was associated with protection against POI.

Variable-reduction was performed using multiple logistic regression with backwards and forwards stepwise elimination. Finally, chronic kidney disease(OR:2.71, 95% CI, 1.73-4.27), diabetes mellitus(OR:2.22, 95% CI, 1.16-4.25), abnormal liver function(OR:3.26, 95% CI, 1.81-5.9), post-operative leakage(OR:16.87, 95% CI, 7.83-36.80), obstruction (OR:4.18, 95% CI, 1.85-9.48)and post-operative TPN (OR:2.44, 95% CI, 1.57-3.79) were concluded as the strongest predictors of POI.

Conclusion :

Patients with comorbidities, post-operative bowel leakage or obstruction and longer TPN duration experienced high incidence of POI. Therefore, it is concluded that early discontinuation of TPN, advanced medical surveillance of leakage or obstruction might minimize the infection rate and enhance 1-year overall survival rate.