16th SINGLE TOPIC SYMPOSIUM

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E09

Relative value of serum amylase after pancreaticoduodenectomy as a novel predictor of clinically relevant pancreatic fistula

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Sung Chun CHO¹, Mee Joo KANG², Sung-Sik HAN¹, Hyeong Min PARK¹, Sang-Jae PARK¹, Sun-Whe KIM^{*3}

¹Center For Liver and Pancreatobiliary Cancer, National Cancer Center, Republic of Korea ²Division of Cancer Registration and Surveillance, National Cancer Center, Republic of Korea ³Department of Surgery, Chung-Ang University Gwang-Myeong Hospital, Republic of Korea

Background : Postoperative serum amylase level is an important factor for predicting clinically relevant postoperative pancreatic fistula (CR-POPF). However, previous studies have used different reference serum amylase values. Therefore, this study aimed to compare the absolute and relative values of serum amylase after pancreaticoduodenectomy to identify the one effective for predicting CR-POPF.

Methods : Data from 143 patients who underwent pancreaticoduodenectomy between January 2019 and January 2021 were analyzed. To adjust for the baseline serum amylase values, the relative serum amylase value was calculated by measuring serum amylase levels on different postoperative days (PODs). The absolute serum amylase value, POD #1/ POD #3 serum amylase ratio, and POD #1/ POD #5 serum amylase ratio were used to calculate the area under the curve (AUC), sensitivity, specificity, positive predictive value (PPV), and negative predictive value (NPV) for CR-POPF prediction.Twenty-six patients (18.2%) developed CR-POPF. The relative serum amylase value showed a higher AUC than the absolute serum amylase value on POD #1; the POD #1/POD #5 serum amylase ratio had the highest AUC (0.818). Furthermore, 23 of the 65 patients (35.4%) whose POD #1 serum amylase value was six times greater than the POD #5 value developed CR-POPF (p<0.001); a POD #1/POD #5 serum amylase ratio >6 in these showed the most accurate risk prediction for CR-POPF (sensitivity: 88.5%, specificity: 62.2%, PPV: 35.4%, NPV: 95.8%; p <0.001).

Results : Twenty-six patients (18.2%) developed CR-POPF. The relative serum amylase value showed a higher AUC than the absolute serum amylase value on POD #1; the POD #1/POD #5 serum amylase ratio had the highest AUC (0.818). Furthermore, 23 of the 65 patients (35.4%) whose POD #1 serum amylase value was six times greater than the POD #5 value developed CR-POPF (p<0.001); a POD #1/POD #5 serum amylase ratio >6 in these showed the most accurate risk prediction for CR-POPF (sensitivity: 88.5%, specificity: 62.2%, PPV: 35.4%, NPV: 95.8%; p <0.001).

Conclusions : Baseline serum amylase levels may vary among patients. Relative serum amylase values showed a better predictive performance for CR-POPF than absolute serum amylase values.

Corresponding Author : Sun-Whe KIM (sunwhekim@gmail.com)



한국간담췌외과학호