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Evaluation of a Predictive Model for Pancreatic Fistula Based on Amylase Value in Drains: A Prospective Study on 231 Consecutive Patients

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Background The assessment of amylase value in drains (AVD) has been proposed as a predictor of pancreatic fistula (PF) after standard pancreatic resection. Nevertheless this model has never been validated. Objectives To evaluate the accuracy of an AVD-based model in predicting PF after pancreatic resection. Methods We included 158 patients (68%) who underwent PD and 73 (32%) who underwent DP. AVD was prospectively measured in postoperative days (POD) 1. Patients with AVD >5,000 U/L in POD 1 underwent further AVD measurement in POD 5 according to the model proposed by Molinari et al. [1]. Results The rate of PF was 25% and 59% after PD and DP respectively. Blood transfusions (odds ratio (OR)=6.9, P=0.004), a “soft” pancreatic texture (OR=10.8, P<0.0001) and the AVD model (OR=38.7, P<0.0001) were independent predictors of PF after PD. The median AVD in POD 1 was significantly higher after DP respect of PD (9,320 U/L versus 3,250 U/L, P<0.0001). The area under the receiving characteristic curve (ROC) was 0.892 (P<0.0001) for AVD in POD 1 after PD and 0.726 (P=0.001) after DP. The sensitivity and specificity of AVD-based model in patients who underwent PD were 55% and 97%, respectively. The sensitivity and specificity of AVD predictive model in patients who underwent DP were 70% and 97%. For PD group we tested a new model considering a cut-off of 2,000 U/L for POD 1 AVD (sensitivity 90% and specificity 75%) and 200 U/L for POD 5 AVD (sensitivity 89% and specificity 85%). The new model showed a sensitivity and specificity in predicting PF after PD of 78% and 95% respectively. Conclusion Although the specificity of the AVD-based model previously proposed is high, its sensibility does not allow a safe PF prediction. A POD 1 AVD cut-off of 2,000 U/L considerably increases the accuracy of this model in patients who underwent PD.

Reference