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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. **Objective** 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

1. Molinari E, Bassi C, Salvia R, Butturini G, Crippa S, Talamini G, et al. Amylase value in drains after pancreatic resection as predictive factor of postoperative pancreatic fistula: results of a prospective study in 137 patients. Ann Surg 2007; 246:281-7.