The Predictive Value of Pulse Wave Velocity for Anastomotic Leakage After Colorectal Surgery

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Résumé en anglais	BACKGROUND: Arterial perfusion defects are a risk factor for anastomotic leakage (AL) following colorectal surgery. Measuring arterial stiffness using pulse wave velocity (PWV) is known to reflect the performance of the arterial network. The objective of this study was to assess the predictive value of PWV for AL after colorectal surgery. METHODS: A prospective monocentric study was conducted on all consecutive patients who underwent colorectal surgery scheduled between March 1, 2016 and May 1, 2017. Patients were divided into two groups according to the PWV which was measured preoperatively using the pOpmètre device: PWV+ (PWV > 10 m/s) and PWV- (PWV ≤ 10 m/s). We then compared the PWV+ and PWV- groups. The primary endpoint was the AL rate. RESULTS: A total of 96 patients were studied, including 60 in the PWV- group and 36 in the PWV+ group. Patients in the PWV+ group were more at risk of presenting with AL than those in the PWV- group (6.25 vs 0%) (p = 0.002). There was no difference in immediate postoperative complications between the two groups apart from the length of hospital stay. PWV predicted the appearance of AL with a sensitivity of and a negative predictive value of 100%. CONCLUSION: Measuring PWV could be a used as a predictive examination in the early detection of AL after colorectal surgery.
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