Evaluation of Perfusion Index as a Screening Tool for Developing Critical Limb Ischemia

Objective: The perfusion index (PI) is a physiological marker for evaluating the peripheral circulation. We explored the possibility of using PI as a screening tool for development of critical limb ischemia in peripheral artery disease (PAD). **Method**: We measured the PI in 79 limbs of 70 PAD patients. Data were analyzed to find a correlation between the PI and PAD severity. **Result**: The PI tended to be lower as PAD became severer. Especially, there were significant differences between the Fontaine 1 and Fontaine 4 groups in average PI and minimum PI, and between Fontaine 1 and two other groups (Fontaine 2 and Fontaine 4 groups) in maximum PI. A mild correlation was found between PI and the ankle brachial index. These data were used to calculate an average PI of 0.27 as a cut-off value for critical limb ischemia (CLI). In 65 asymptomatic PAD patients and claudication, significantly more patients with a PI value greater than the cut-off value developed CLI than those with a PI lower than the cut-off. **Conclusion**: The PI can be a useful tool for evaluating the development of CLI in mild PAD patients, and patients tended not to progress to CLI when their average PI was higher than 0.27. (This is a translation of Jpn J Vasc Surg 2020; 29: 103-108.).