

Usefulness of Tibial Artery Blood Flow Measurement in Endovascular Treatment for Critical Ischemic Limbs

Hideo KITSUNAI¹, Manami ITO¹, Mayumi IWASA¹, Akira MIYAMOTO², Naohiro HAKAMATA³, Masahiro FUKUDA³, Yasutaka YAMAUCHI³, Takako AKITA³, Ryoji KUHARA³, Shingo TEZUKA³

Abstract

Purpose Subjects and Methods, Results and Discussion, Conclusion

This study was conducted to investigate the usefulness of tibial blood flow measurement (TBF) as the predictor of retreatment for critical ischemic limbs (CL) undergoing endovascular treatment (EVT). Our study population consisted of 273 CL with infrainguinal disease undergoing TBF before and after EVT in our hospital from August 2008 to October 2010. TBF was performed at the distal anterior and posterior tibial arteries using Duplex (Logiq E9). They were assigned to 55 CL with re-EVT (Re-EVT Group) and 218 CL without re-EVT (Control Group) within one year. We compared the several parameters of TBF between the both groups. In the both groups, there were observed positive correlations between the volume of TBF before and after EVT, and between the increment of TBF and the volume of TBF after EVT. The volume of TBF after EVT and the increment of TBF were significantly greater in Re-EVT Group than in Control Group ($p < 0.001$). According to the cutoff values, TBF after EVT > 37.0 ml/min or the increment of TBF > 20.8 ml/min could divide the both groups with sensitivity 72% and specificity 62%. TBF before and after EVT might become the predictor of re-EVT for CL within one year.

Vol.38 No.3(2013) 215-222

Keywords

Critical Ischemic Limbs (CL), Endovascular Treatment (EVT), Tibial Blood Flow Measurement (TBF), Evaluation of Treatment, Pulse Doppler Method

¹Department of Clinical Laboratory, ²Cardiovascular Center, ³Department of Cardiovascular Internal Medicine, Goseikai Kikuna Memorial Hospital, 4-4-27 Kikuna Kouhoku Yokohama Kanagawa 2220011 Japan

Received on March 19, 2012; Revision accepted on February 9, 2013