

Abstract Type : Poster
Presentation No. : PDL 049

A toe-brachial index (TBI) is a good predictor for cardiovascular diseases (CVD) in hemodialysis (HD) patients.

Chika Niihara, Manami Matsumoto, Minami Teramawari, Kazuko Arita, Katsutoshi Maeda, Hiroaki Oda
Department of NEPHROLOGY, ODA MEDICAL CLINIC, Japan

Objectives:

An ankle-brachial index (ABI), TBI and a skin perfusion pressure (SPP) are considered to be good predictors for peripheral artery disease (PAD) which is a major cause of a limb amputation. However, a relationship among these indices and strokes as well as ischemic heart diseases still remains unclear. This study was conducted to clarify if ABI, TBI and SPP were useful predictors for strokes and ischemic heart disease in HD patients.

Methods: A total of 127 out-patients (m/f; 86/41, mean age; 64.9 years, mean HD duration; 67.2 months, diabetes mellitus; 56) undergoing maintenance HD were enrolled in this study. The cardio-ankle-vascular index (CAVI), ABI and TBI were estimated using VaSera (Fukuda Denshi, Tokyo, Japan). The SPP was measured using PAD4000 (Kaneka, Osaka, Japan). These indices and clinical factors (HD duration, serum concentrations of albumin, HDL-cholesterol, LDL-cholesterol, inorganic phosphorus and corrected calcium) were applied to a logistic regression analysis.

Results: The TBI was a significant predictor for strokes (Table 1. $p=0.04$) and ischemic heart diseases ($p=0.02$) and a serum concentration of HDL-cholesterol was a significant predictor for strokes (Table 2. $p=0.04$), while CAVI, ABI or SPP were not. The CAVI values increased, whereas ABI, TBI and SPP values decreased with aging.

Conclusions:

Low TBI values showed higher risks of strokes and ischemic heart diseases than CAVI, TBI or SPP values. The TBI is a good predictor for CVD in HD patients.

Tables of an abstract

Table 1. Odds ratios for strokes by clinical factors

Characteristics	β (S.E.)	Wald	Odds ratios	95% CI	p value
TBI	-4.19 (2.14)	4.8	0.015	0.0002 - 0.8322	0.04 *
ABI	0.75 (1.69)	0.65	2.108	0.0666 - 59.0524	0.66
CAVI	-0.00 (0.18)	1.44	0.996	0.6890 - 1.4034	0.98
SPP	-0.01 (0.02)	0.81	0.990	0.9548 - 1.0238	0.56
HD duration	-0.00 (0.00)	0.42	0.999	0.9889 - 1.0073	0.80
Albumin	0.08 (1.15)	0.32	0.923	0.0944 - 9.0384	0.94
HDL-cholesterol	-0.04 (0.02)	2.13	1.041	1.0015 - 1.0844	0.04
LDL-cholesterol	-0.01 (0.01)	1.52	0.987	0.9616 - 1.0116	0.31
corrected CaxIP	-0.02 (0.02)	0.64	0.981	0.9346 - 1.0248	0.40

Table 2. Odds ratios for ischemic heart diseases by clinical factors

Characteristics	β (S.E.)	Wald	Odds ratios	95% CI	p value
TBI	3.43 (1.56)	5.24	30.784	1.6127 - 779.4754	0.02 *
ABI	-1.08 (1.34)	0.64	0.341	0.0233 - 4.8914	0.42
CAVI	-0.16 (0.13)	1.47	0.851	0.6458 - 1.1040	0.22 *
SPP	-0.01 (0.01)	0.81	0.990	0.9634 - 1.0137	0.37
HD duration	-0.00 (0.00)	0.41	0.998	0.9913 - 1.0047	0.52
Albumin	0.48 (0.85)	0.32	1.615	0.3054 - 8.7667	0.57
HDL-cholesterol	-0.02 (0.01)	2.16	0.979	0.9510 - 1.007	0.14
LDL-cholesterol	0.01 (0.01)	1.56	1.012	0.9934 - 1.0317	0.21
corrected CaxIP	0.01 (0.02)	0.65	1.0142	0.9805 - 1.0514	0.42