

A retrospective analysis of clinical audit

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Aims: To evaluate the level of plasma lipoprotein-associated phospholipaseA2 (LP-PLA2) in the patients with diabetes foot ulcers (DFUs).

Methods: Retrospective audit of patients treated at the Department of Endocrinology of the Nanjing Junxie Hospital between December 2014 and October 2016. Recruited participants (n=212) were allocated into 3 groups - DFU group (n = 76), DM group (n = 96) and control group (n=40). Demographics and several clinical parameters were analyzed.

Variable		DFU (n=76)	DM (n=96)	Control (n=40)
Age(years)		67.42±11.41 ^a	63.43±12.16 ^b	55.19±11.97
Gender	Male	66%	61%	60%
	Female	34%	39%	40%
Course of DM(years)		14.82±8.90 ^a	11.51±8.35	0
SBP(mmHg)		140.12±16.97 ^a	134.38±13.86 ^b	110.91±16.53
DBP(mmHg)		76.83±8.96 ^a	76.35±7.54 ^b	60.56±8.18
FPG(mmol/L)		9.85±3.70 ^a	8.73±3.66 ^b	5.10±0.41
LP-PLA2(pg/ml)		354.27±96.10 ^a	240.34±115.83 ^b	90.69±21.35
TC(mmol/L)		4.83±1.36 ^a	4.45±1.39 ^b	3.96±1.27
TG(mmol/L)		1.97±3.18 ^a	1.64±2.42	1.23±0.55
HDL-C(mmol/L)		1.02±0.30	1.26±0.33	1.16±1.34
LDL-C(mmol/L)		2.55±1.03	2.97±1.07 ^b	2.79±1.07

Variable		DFU (n=76)	DM (n=96)	Control (n=40)
Smoke	Y	27.6%	35.4%	12(33.3%)
	N	72.4%	64.6%	28(67.7%)
Alcohol	Y	15.8%	24.0%	7(17.5%)
	N	84.2%	76.0%	33(82.5%)
Atherosclerosis (AS)	Y	96.1% ^{ab}	79.2% ^a	15(37.5%)
	N	3.9% ^{ab}	20.8% ^a	25(62.5%)

Results: Higher values of LP-PLA2, fasting plasma glucose, blood pressure, lipid profiles (total cholesterol and triglyceride), degree of atherosclerosis, along with increasing ages and DM duration were found in DFU group as compared with DM and control groups ($P < 0.05$). LP-PLA2 levels were positively correlated with ages, DM duration, lipid profiles and increasing severity of DFU while negatively related with high-density lipoprotein cholesterol (HDL-C) ($P < 0.05$). Multivariate logistic regression revealed LP-PLA2 [OR = 6.706, 95% CI, 2.844-15.812, $P < 0.001$] and atherosclerosis [OR = 5.876, 95% CI, 1.582-21.830, $P = 0.008$] were significant risk factors of DFUs.

variable	B	SE	OR(95%CI)	P
LP-PLA2 level	1.903	0.438	6.706(2.844-15.812)	<0.001*
AS	1.771	0.670	5.876(1.582-21.830)	0.008*
Smoke	-0.070	0.431	0.932(0.401-2.167)	0.870
Alcohol	-0.474	0.509	0.622(0.229-1.687)	0.351

Conclusion: The biomarker LP-PLA2 is associated with progression of diabetes and foot lesions, and may help to predict the development of DFUs. LP-PLA2 should be included in the evaluation of routine diabetes foot screening.