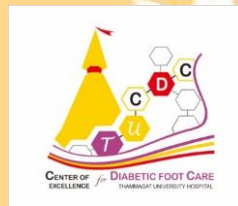


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Prevalence and risk factors of diabetic foot in the elderly and the younger adult patients

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Objective:

To examine the prevalence and assess risk factors for diabetic foot in the elderly and the younger adult patients.

Method:

Diabetic foot was defined as any foot pathology resulting from diabetes such as foot ulcer/ amputation, loss of protective sensation, peripheral vascular disease and foot deformities.

A retrospective chart review based on the database of Thammasat University-Center of Excellence for Diabetic Foot care (TU-CDC) was collected. The analysis covered diabetic patients age more than 18 years old, who received a comprehensive foot examination during the period from October 1, 2016 to February 28, 2017. The patients were divided into two groups; the elderly group (age $\geq$ 65 years old) and the younger group (age < 65 years old). Multiple logistic regression was used to explore independent risks of diabetic foot.

Results:

Of the total of 469 patients, 466 were patients with type 2 diabetes.

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Table 1 Characteristic between the elderly and the younger patients

Characteristic	Elderly group (N=213)	Younger age group (N=256)	Missing data	p-value
Male	92 (43)	139 (54)	0	0.02
Age (year)	72.8±0.4	53.8±0.5	0	<0.001
Body mass index (kg/m ²)	25.44±0.5	26.41±0.4	257	0.15
Diabetes duration more than 10 years	88 (41)	144 (56)	3	0.001
Current smoking	5 (2)	20 (8)	0	0.009
Limitation of movement	33 (15)	14 (5)	0	0.000
HbA1c (%)	7.9±0.1	8.5±0.1	28	0.002
Diabetes retinopathy	40 (19)	51 (20)	87	0.63
Glomerular filtration rate (ml/min/1.73 m ²)	54.7±1.7	90.4±2.2	15	0.000
Inappropriate footwear	116 (54)	109 (43)	0	0.01

Data were shown in mean±SE or number (%)

Analysis was performed with Chi-square and independent t-test

Table 2 Comparisons of foot abnormalities between the elderly and the younger patients

Foot abnormalities	Elderly group (N=213) (%)	Younger age group (N=256) (%)	p-value
Diabetic foot ¹	112 (53)	98 (38)	0.002
High risk ²	78 (37)	69 (27)	0.26
Current or previous foot ulcer	25 (12)	33 (13)	0.71
Peripheral arterial disease ³	29 (14)	30 (12)	0.54
Loss of protective sensation ⁴	78 (37)	58 (22)	0.001
Painful neuropathy	22 (10)	22 (9)	0.52

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Foot deformity	67 (31)	51 (20)	0.004
Callus	63 (30)	95 (37)	0.086
Nail abnormalities	82 (38)	57 (22)	0.000

¹Diabetic foot was defined by either current/ previous foot ulcer, amputation, peripheral arterial disease, loss of protective sensation or foot deformity.

²High risk for diabetic foot ulcer and amputation was defined by any of the followings:

- previous foot ulcer
- amputation
- foot deformity and loss of protective sensation or peripheral artery disease

³Peripheral arterial disease was diagnosed by absent or decreased dorsalis pedis or posterior tibial pulse

⁴Loss of protective sensation was defined by abnormal monofilament perception.

Analysis was performed with Chi-square

Table 3. Independent risk of diabetic foot

	Adjusted Odds ratio (95%CI)	p-value
Elderly	1.02 (0.65-1.60)	0.928
Limitation of movement	2.73 (1.35-5.53)	0.005
Inappropriate footwear	1.52 (1.02-2.27)	0.039
Nail abnormalities	2.03 (1.32-3.15)	0.001
Chronic kidney disease*	2.19 (1.39-3.45)	0.001

Analysis was performed with multiple logistic regression

*Chronic kidney disease was diagnosed if glomerular filtration rate < 60 ml/min/1.73m²

Conclusion:

The elderly diabetes patients have more prevalence of diabetic foot than the younger patients. However the independent risk factors for diabetic foot are limitation of movement, chronic kidney disease, inappropriate footwear and nail abnormalities. Therefore diabetes patients who have these risk factors, should receive a comprehensive foot examination and consultation/ education to prevent diabetic foot ulcer and subsequent amputation regardless of age.