

[P03] ANALYSIS OF 5-YEAR PROGNOSIS AND RISK FACTORS IN CHINESE PATIENTS WITH THEIR FIRST DIABETIC FOOT ULCERS

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Objective: To describe the mortality and the recurrence of diabetic foot ulcers of the following 1,3 and 5 years among Chinese patients with their first diabetic foot ulcers, as well as to investigate the risk factors of mortality and the recurrence of diabetic foot ulcers among Chinese patients with their first diabetic foot ulcers.

Methods: This is a retrospective cohort study. 204 patients with their first diabetic foot ulcers who were admitted to the Department of Endocrinology in one level 3 hospital in Guangzhou from 1 January 2004 to 31 August 2009 were enrolled in the study. They were followed up until 31 August 2014. The observing outcomes include the mortality and the recurrence of diabetic foot ulcers. The baseline data was collected in the electronic medical records, and the follow-up data was collected in the electronic medical records or by telephone interview. The data was analyzed by software SPSS version 19.0.

Results: 1. The study showed that the total mortality rate of patients with their first diabetic foot ulcers in 5 years was 41.2%, and the cardiovascular and cerebrovascular diseases were the leading causes of death (37.9%). In the study, 37 patients (18.1%), 64 patients (31.3%), and 84 patients (41.2%) died within 1 year, 3 years, and 5 years respectively. The cumulative survival rates of the patients in 1 year, 3 years and 5 years were 81.8%, 68.2% and 57.0% respectively. The median survival time was 7.00 years. 2. The recurrence rates in patients with their first diabetic foot ulcers for 5 years was 34.3%, and the cumulative recurrence rates among them in 1 year, 3 years and 5 years were 18.0%, 33.9% and 39.0% respectively. The mean time between the occurrence and the first recurrence was 2.28 ± 1.74 years, and the injury was the leading cause of recurrence. 3. The *log-rank* test results showed that the aged 60 or above, the diabetic duration 10 years or above, complicated with Hypertension, Hypoproteinemia, Diabetic Nephropathy, and Peripheral Arterial Disease, the foot ulcers 2 or above, Wagner grade 4~5, and with major foot amputation would increase the risk of death ($P < 0.05$). The Cox's proportional hazards model indicated that the patients' age ($RR = 3.877$, 95%CI 2.025~7.420), complicated with Hypertension ($RR = 1.599$, 95%CI 1.032~2.478), Hypoproteinemia ($RR = 1.858$, 95%CI 1.235~2.794) and Peripheral Arterial Disease ($RR = 1.492$, 95%CI 1.060~2.102) were the independent risk factors of mortality. 4. The *log-rank* test showed that smoking, diabetic foot ulcer duration 2 months or above, and complicated with Diabetic Peripheral Neuropathy were the risk factors of the recurrence of diabetic foot ulcers ($P < 0.05$). And the Cox's proportional hazards model indicated that smoking ($RR = 1.858$, 95%CI 1.154~2.994), diabetic foot ulcer duration ($RR = 1.930$, 95%CI 1.215~3.083) and complicated with Diabetic Peripheral Neuropathy ($RR = 1.775$, 95%CI 1.015~3.104) were the independent risk factors of the recurrence of diabetic foot ulcers.

Conclusions: 1. The total mortality rate of patients with diabetic foot ulcers for 5 years was at a relative high level (41.2%). The cumulative survival rates of the patients in 1 year, 3 years and 5 years decreased gradually, and the cardiovascular and cerebrovascular disease was the leading cause of

death. 2. The patients were likely to be recurred after being diagnosed with diabetic foot ulcers firstly, and the injury was the important leading cause of recurrence. 3. The aged 60 or above, complicated with Hypertension, Hypoproteinemia and Peripheral Arteria Disease were the independent risk factors of mortality. The smoking, diabetic foot ulcer duration 2 months or above and complicated with Diabetic Peripheral Neuropathy were the independent risk factors of the recurrence of diabetic foot ulcers.

Table 1 Results from Cox regression carried out on 5-year follow-up mortality data

Variable	β	SE	Wald	P	RR	95%CI
Age	1.355	0.331	16.732	0.000*	3.877	2.025~7.420
Hypertension	0.469	0.224	4.405	0.036	1.599	1.032~2.478
Hypoproteinemia	0.620	0.208	8.851	0.003	1.858	1.235~2.794
Peripheral Arteria Disease	0.400	0.175	5.251	0.022	1.492	1.060~2.102

* $P < 0.01$

Table 2 Results from Cox regression carried out on 5-year follow-up recurrence data

Variable	β	SE	Wald	P	RR	95%CI
Smoking	0.620	0.243	6.494	0.011	1.858	1.154~2.994
Diabetic foot ulcer duration	0.660	0.238	7.730	0.005	1.930	1.215~3.083
Diabetic Peripheral Neuropathy	0.574	0.285	4.046	0.044	1.775	1.015~3.104