· 临床研究 ·

老年糖尿病周围神经病变患者生活质量调查及其影响因素

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【摘 要】 **目的** 探讨老年糖尿病周围神经病变(DPN)患者生活质量情况及其影响因素。**方法** 选择屯昌县人民医院 2019 年 1 月至 2022 年 12 月收治的 156 例老年 T2DM 合并 DPN 患者为观察组,同时期收治的 263 例单纯老年 T2DM 患者为对照组。采用糖尿病生存质量特异性量表(DSQL)调查患者生存质量,疾病进展恐惧简化量表(FoP-Q-SF)调查患者疾病进展恐惧感,汉密尔顿焦虑量表(HAMA)调查患者焦虑状况,密歇根神经病变问卷(MNSI)调查患者神经病变严重程度。采用 SPSS 23.0 统计软件进行数据分析。根据数据类型,分别采用单因素方差分析、t 检验或 χ^2 检验进行组间比较。采用多元线性回归分析影响观察组患者生活质量的相关因素。**结果** 观察组患者 DSQL 各维度得分及量表总得分均高于对照组;FoP-Q-SF 得分≥34 分、心理功能失调及焦虑者占比均高于对照组;MNSI 总得分高于对照组,差异均有统计学意义($P<0.05$)。多元线性回归分析提示,有固定照顾者($\beta=-0.633$;$P<0.001$)、年龄($\beta=0.287$;$P<0.001$)、自评疾病经济负担($\beta=0.226$;$P<0.001$)、疾病进展恐惧($\beta=0.648$;$P<0.001$)、焦虑($\beta=0.513$;$P<0.001$)、MNSI 得分($\beta=0.578$;$P<0.001$)及疼痛性 DPN($\beta=0.715$;$P<0.001$)是影响观察组患者生活质量 DSQL 得分的相关因素,其共同解释生活质量 62.50%的变异。**结论** 老年 T2DM 合并 DPN 患者生活质量较无并发症者普遍下降,除年龄、自评疾病经济负担、神经病变严重程度及疼痛性 DPN 外,疾病进展恐惧感、焦虑等心理障碍也会影响患者生活质量,此外,拥有固定照顾者的患者生活质量更高。

【关键词】 老年人;糖尿病;糖尿病周围神经病变;生活质量
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Quality of life and influencing factors in elderly patients with diabetic peripheral neuropathy

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【Abstract】 **Objective** To investigate the quality of life in the elderly patients with diabetic peripheral neuropathy (DPN) and the influencing factors. **Methods** A total of 156 elderly T2DM patients with DPN admitted to Tunchang People's Hospital from January 2019 to December 2022 were included in the observation group, and 263 elderly T2DM patients without DPN in the control group. The quality of life was investigated by diabetes specific quality of life scale (DSQL), the fear of disease progression by the fear of progression questionnaire-short form (FoP-Q-SF), the anxiety status of patients by the Hamilton anxiety scale (HAMA), and the severity of neuropathy in patients by the Michigan neuropathy screening instrument (MNSI). SPSS 23.0 was used for data processing, and multivariate linear regression analysis was used to analyze the factors affecting the quality of life of patients in the observation group. **Results** The DSQL scores of each dimension and the total score in the observation group were higher than those in the control group, the proportions of patients with FoP-Q-SF score ≥ 34, psychological dysfunction and anxiety were higher than those in control group; the total MNSI score was also higher in the control group, and the differences were statistically significant ($P<0.05$). Multivariate linear regression analysis suggested that having regular caregivers ($\beta=-0.633$; $P<0.001$), age ($\beta=0.287$; $P<0.001$), self-rated economic burden of disease ($\beta=0.226$; $P<0.001$), fear of disease progression ($\beta=0.648$; $P<0.001$), anxiety ($\beta=0.513$; $P<0.001$), MNSI questionnaire score ($\beta=0.578$; $P<0.001$) and painful DPN ($\beta=0.715$; $P<0.001$) were factors affecting DSQL score in the observation group, which jointly explained 62.50% of the variation in quality of life. **Conclusion** The quality of life in the elderly T2DM patients with DPN is generally lower than that of the patients without complications. In addition to age, self-rated economic burden of disease, severity of neuropathy and painful DPN, psychological disorders such as fear of disease progression and anxiety can also affect the patients' quality of life. Additionally, patients with regular caregivers have a higher quality of life.

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随着经济的不断发展及老龄化社会的到来,我国2型糖尿病(type 2 diabetes mellitus,T2DM)发病率已高于世界平均水平[1]。作为一种终身性的慢性疾病,T2DM病程长、并发症多,糖尿病周围神经病变(diabetic peripheral neuropathy, DPN)是T2DM常见并发症,DPN造成的足部感觉异常是诱导足部溃疡、导致截肢的重要病因,加上DNP的治疗开销大,故DPN患者多存在较为严重的疾病进展恐惧与焦虑心理。随着临床医学观念的转变,患者生活质量逐渐成为衡量其健康状况的重要指标[2]。有研究显示,糖尿病相关并发症会明显降低患者生活质量[3]。而老年人机体免疫力下降,心理生理特点均不同于其他年龄段,加上DPN带来的不良生理及心理影响,有必要对老年T2DM合并DPN患者生活质量进行单独分析。

1 对象与方法

1.1 研究对象

将2019年1月至2022年12月屯昌县人民医院收治的156例老年T2DM合并DPN患者纳为观察组,同时期收治的263例单纯老年T2DM患者(无任何糖尿病并发症)作为对照组。DPN诊断标准参照中国2型糖尿病防治指南中相关标准[4]。纳入标准:年龄≥65岁;符合中国2型糖尿病防治指南制定的T2DM相关诊断标准[4];意识清楚,可配合完成调查;观察组同时满足DPN相关诊断标准。排除标准:合并其他内分泌性疾病;合并恶性肿瘤;1型糖尿病;参与研究前6个月内经历重大生活创伤事件;合并非糖尿病并发症的严重躯体性疾病;糖尿病急性并发症。

1.2 方法

1.2.1 一般资料收集 收集患者一般资料,包括年龄、性别、体质量指数(body mass index,BMI)、居住地、有无固定照顾者、自评疾病治疗经济负担、是否采取糖尿病强化治疗方案(糖尿病强化治疗定义:使用一针长效胰岛素联合三针短效胰岛素治疗或直接应用胰岛素泵)、糖尿病管理行为、糖尿病控制状态、规律运动、是否为疼痛性DPN等。

1.2.2 生活质量调查 采用糖尿病特异性生活质量量表(diabetes specific quality of life scale,DSQL)[5]调查。

1.2.3 疾病进展恐惧感调查 采用疾病进展恐惧简化量表(fear of progression questionnaire-short form,FoP-Q-SF)[6]评估,量表总得分≥34分提示存在心理功能失调。

1.2.4 焦虑情况调查 采用汉密尔顿焦虑量表(Hamilton anxiety scale,HAMA)[7]调查焦虑情况。

1.2.5 神经病变严重程度评估 采用密歇根神经病变问卷评分(Michigan neuropathy screening instrument,MNSI)[8]评估神经病变严重程度。MNSI包含患者自评与体格检查,共23个条目,条目4与条目10评价结果不计入总得分(条目4与10主观性较强,且特异性低,故不计入总分),其余各条目得分范围0~1分,量表总得分21分,得分越高,患者神经病变程度越严重。

1.3 统计学处理

采用SPSS 23.0统计软件进行数据分析。计量资料以均数±标准差($\bar{x}\pm s$)表示,两组间比较采用t检验;多组间比较采用单因素方差分析,组内两两比较采用LSD-t检验。计数资料以例数(百分率)表示,组间比较采用χ^2检验。采用多元线性回归模型分析出现并发症的老年T2DM患者生活质量的影响因素。$P<0.05$为差异有统计学意义。

2 结 果

2.1 两组患者基线资料比较

观察组中男性97例,女性59例;年龄65~93(73.58±8.15)岁;居住地:城镇86例,农村70例;文化程度:小学及以下80例,中学46例,大专及以上30例;已婚116例,未婚/离异/丧偶40例;合并高血压42例,合并冠心病16例。对照组中男性173例,女性90例;年龄66~94(74.67±7.35)岁;居住地:城镇146例,农村117例;文化程度:小学及以下140例,中学70例,大专及以上53例;已婚190例,未婚/离异/丧偶73例;合并高血压56例,合并冠心病29例。两组患者一般资料比较,差异无统计学意义($P>0.05$)。

2.2 两组患者生活质量情况比较

观察组患者生活质量生理因素、心理精神因素、社会关系、治疗维度及总得分均高于对照组,差异有统计学意义($P<0.05$;表1)。

表 1 两组患者生活质量(DSQL 评分)情况比较

Table 1 Comparison of quality of life (DSQL score) between two groups (points, $\bar{x}\pm s$)

Group	n	Physiological factor	Psychological-mental factor	Social relation	Treatment	Total score
Observation	156	30.58±4.78	21.78±3.69	7.87±2.02	7.15±1.66	67.38±10.65
Control	263	24.37±3.68	16.15±3.89	6.03±1.98	5.03±1.71	51.58±9.74
t		14.903	14.596	9.127	12.402	15.489
P value		<0.001	<0.001	<0.001	<0.001	<0.001

DSQL: diabetes specific quality of life scale.

2.3 两组患者疾病进展恐惧、焦虑及 MNSI 得分情况比较

观察组患者疾病进展 FoP-Q-SF 得分≥34 分、存在心理功能失调及焦虑占比均高于对照组,MNSI 总得分高于对照组,差异均有统计学意义(P<0.05;表 2)。

表 2 两组患者疾病进展恐惧、焦虑及 MNSI 得分情况比较

Table 2 Comparison of fear of disease progression, anxiety and MNSI score between two groups

Group	n	FoP-Q-SF≥34 points[n(%)]	Anxiety [n(%)]	MNSI score (points, $\bar{x}\pm s$)
Observation	156	90(57.69)	117(75.00)	7.58±1.89
Control	263	80(30.42)	130(49.43)	3.11±0.56
t		30.210	26.457	35.821
P value		<0.001	<0.001	<0.001

FoP-Q-SF: fear of progression questionnaire-short form; MNSI: Michigan neuropathy screening instrument.

2.4 观察组不同临床特征患者生活质量情况比较

年龄 60~<80 岁及有固定照顾者的患者生活质量 DSQL 得分分别低于年龄≥80 岁者、无固定照顾者;自评经济负担重度者 DSQL 得分高于其余自评经济负担分级者;合并疾病进展恐惧、焦虑、MNSI 评分≥平均值及疼痛性 DPN 者的 DSQL 得分分别高于无疾病进展恐惧、无焦虑、MNSI 评分<平均值及非疼痛性 DPN 者,差异均有统计学意义(P<0.05;表 3)。

2.5 影响观察组患者生活质量的多元线性回归分析

将观察组患者生活质量 DSQL 得分作为因变量,单因素分析有意义的指标作为自变量,行多元线性回归分析,结果提示,有固定照顾者、年龄、自评疾病经济负担、疾病进展恐惧、焦虑、MNSI 得分及疼痛性 DPN 是影响老年 T2DM 合并 DPN 患者 DSQL 得分的相关因素(表 4)。

3 讨 论

DPN 多累及多条神经,其早期以感觉障碍为主要临床表现,疼痛性 DNP 则会出现以四肢疼痛、刺痛感、电击感为主要特征的疼痛感,DPN 在 T2DM 中的发病率高,无法治愈且治疗难度大,开销高,患者生活质量整体处于较低水平[9,10,11]。本研究结果显示,老年 T2DM 合并 DPN 患者生活质量各维度均明显低于无糖尿病并发症者,与既往研究结果一致[12,13]。

既往关于 T2DM 合并 DPN 患者生活质量的研究较多。如白彩琴等[14]研究发现,文化程度、疾病了解程度、社会支持、睡眠障碍及焦虑情绪均是影响 DPN 患者生活质量的相关因素。杨曼等[15]研究发现,抑郁情绪是平衡 DPN 患者活动能力与生活质量的中介变量,调节抑郁情绪在提高生活质量中具有重要意义。本研究结果显示,心理因素(包括疾病进展恐惧及焦虑)均会影响老年 T2DM 并发症患者生活质量。提示积极进行心理干预,对改善老年 T2DM 合并 DPN 患者生活质量具有一定意义。

此外,本研究将疾病经济负担、糖尿病治疗方案、运动习惯、有无固定照顾者等因素纳入研究,证实自评疾病经济负担、有固定照顾者、MNSI 及疼痛性 DPN 均是影响患者生活质量 DSQL 得分的相关因素,说明老年 T2DM 合并 DPN 患者生活质量还受多种因素的影响。分析其原因:自评疾病经济负担越大,患者心理负担越重,进而影响治疗积极性及配合度,降低生活质量;有固定照顾者可减少患者频繁更换照顾者的不适应性,且固定照顾者熟悉患者各方面的情况,减少患者焦虑感,提高其生活质量;神经病变程度越严重或疼痛性 DPN 均将增加患者疾病负担,降低其生活质量。但本研究未发现糖尿病强化治疗、运动习惯等对患者生活质量的影响,这可能与本研究中所纳入的病例为老年群体,不同个体之间的运动习惯与糖尿病强化治疗差异性较小相关。

综上所述,老年 T2DM 合并 DPN 患者生活质量较无并发症者普遍下降,除年龄、自评疾病经济负担、神经病变严重程度及疼痛性 DPN 外,疾病进展恐惧感、焦虑等心理障碍也会影响患者生活质量,此外,拥有固定照顾者的患者生活质量更高。

表3 观察组不同临床特征患者生活质量情况比较

Table 3 Comparison of quality of life of patients with different clinical characteristics in observation group (n=156, points, $\bar{x}\pm s$)

Factor	n	DSQL score	t/F	P value
Gender			0.604	0.547
Male	97	67.04±8.95		
Female	59	67.95±9.41		
Age			3.962	<0.001
65-<80 years	101	65.02±9.87		
≥80 years	55	71.71±10.45		
BMI			0.033	0.968
<18.5 kg/m^2	33	67.03±10.39		
18.5-<24.0 kg/m^2	73	67.45±11.45		
≥24.0 kg/m^2	50	67.52±9.88		
Place of residence			0.209	0.835
Urban area	86	67.53±9.87		
Rural area	70	67.20±9.78		
Education level			0.686	0.505
Primary school and below	80	67.93±9.43		
Junior high school	46	67.44±9.41		
Junior college and above	30	65.84±9.62		
Marital status			0.420	0.675
Married	116	67.18±10.23		
Divorced/widowed/unmarried	40	67.96±9.81		
Medical payment method			0.057	0.944
Medical insurance/New rural cooperative medical system	136	67.32±9.66		
Self-paying	13	67.65±8.77		
Others	7	67.97±10.65		
T2DM course			0.675	0.511
<5 years	33	68.83±10.05		
5-<10 years	56	66.79±8.79		
≥10 years	67	67.16±9.89		
Smoking			0.957	0.340
Yes	53	68.85±10.45		
No	103	67.14±10.63		
Alcohol drinking			0.678	0.486
Yes	39	68.60±9.85		
No	117	67.31±10.15		
Presence or absence of regular caregivers			4.841	<0.001
Yes	93	64.43±8.89		
No	63	71.74±9.77		
Self-rated economic burden of disease			14.728	<0.001
No	30	62.25±10.15		
Mild	39	65.23±9.31		
Moderate	50	65.89±9.37		
Severe	37	75.81±9.66$^{*\#\triangle}$		
Presence of intensive diabetes treatment			0.544	0.587
Yes	68	66.97±10.33		
No	88	67.90±10.78		
Presence of regular monitoring of blood glucose			0.547	0.585
Yes	84	66.94±10.74		
No	72	67.90±11.16		
Strictly following the doctor′s advice to take medicine			0.200	0.842
Yes	90	67.23±10.87		
No	66	67.59±11.42		
Receiving T2DM-related health education			0.151	0.881
Yes	49	67.17±12.25		
No	107	67.48±11.79		
Diabetes mellitus control status			0.333	0.801
Ideal	46	66.35±9.78		
General	44	67.65±10.63		
Not good	43	67.53±9.77		
Poor	23	68.66±10.63		
Regular exercise			0.551	0.582
Yes	51	67.98±8.63		
No	105	67.09±9.83		
Fear of disease progression			4.170	<0.001
Yes	90	70.50±10.33		
No	66	63.13±11.65		
Anxiety			3.450	<0.001
Yes	117	68.99±9.88		
No	39	62.55±10.73		
MNSI score			6.490	<0.001
≥average score	73	73.32±10.36		
<average score	83	62.16±11.02		
Painful DPN			7.110	<0.001
Yes	60	76.51±13.15		
No	96	61.68±12.37		

BMI: body mass index; T2DM: type 2 diabetes mellitus; MNSI: Michigan neuropathy screening instrument; DPN: diabetic peripheral neuropathy; DSQL: diabetes specific quality of life scale. Compared with no burden, $^{*}P<0.05$; compared with mild burden, $^{\#}P<0.05$; compared with moderate burden, $^{\triangle}P<0.05$.

表 4 影响观察组患者生活质量的多元线性回归分析

Table 4 Multivariate linear regression analysis affecting quality of life of patients in the observation group

Factor	*B*	*SE*	*β*	*t*	*P* value
Constant	44.338	7.685	-	26.895	<0.001
Age	0.415	0.125	0.287	2.515	0.028
Having regular caregivers	−2.478	0.689	−0.633	6.765	<0.001
Self-rated economic burden of disease	0.513	0.208	0.226	2.279	0.034
Fear of disease progression	1.436	0.375	0.648	6.461	<0.001
Anxiety	0.936	0.223	0.513	5.113	<0.001
MNSI score	1.251	0.315	0.578	6.021	<0.001
Painful DPN	1.678	0.432	0.715	8.336	<0.001

MNSI: Michigan neuropathy screening instrument; DPN: diabetic peripheral neuropathy. -: no datum. $R=0.815$, $R^2=0.66$, adjusted $R^2=0.625$, $F=24.151$, $P<0.001$.

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