·临床研究·

老年肺癌患者围手术期生活质量状况及术后早期生活质量不良的危险因素

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【摘 要】 目的 调查老年肺癌患者围手术期生活质量,并分析术后早期生活质量不良的危险因素。**方法** 选取2021年9月至2023年9月河北北方学院附属第一医院胸心血管外科收治的155例行手术治疗的老年肺癌患者为研究对象,在术前、术后1周及术后1个月,对患者行问卷调查,最终回收有效问卷者142例。采用年龄校正查尔森合并症指数(aCCI)评估患者整体功能状态。在术前、术后1周及术后1个月,使用中文版肺癌患者生活质量测定量表(FACT-L)调查患者生活质量。在术后1周使用中文版安德森症状评估量表-肺癌模块评估患者症状群特点。以术后1周生活质量FACT-L总得分分组,将患者分为良好组74例(≥平均分)及不良组68例(<平均分)。采用SPSS 24.0统计软件进行数据分析。采用logistic回归分析评估老年肺癌患者术后1周生活质量不良的危险因素。**结果** 术后1周时,老年肺癌患者FACT-L各维度评分及总分均显著低于术前及术后1个月($P<0.05$),术后1个月FACT-L各维度评分及总分与术前比较,差异无统计学意义($P>0.05$)。不良组吸烟史占比、aCCI>5占比及气短、疲乏症状发生率均显著高于良好组,差异均有统计学意义($P<0.05$)。logistic回归分析显示,吸烟史($OR=3.425$,95%CI 1.980~5.922;$P<0.05$)、aCCI>5($OR=2.627$,95%CI 1.455~4.744;$P<0.05$)、气短($OR=2.545$,95%CI 1.284~5.043;$P<0.05$)及疲乏($OR=3.086$,95%CI 1.730~5.508;$P<0.05$)均为老年肺癌患者术后1周生活质量不良的危险因素。**结论** 老年肺癌患者术后早期生活质量下降,但术后1个月可回升至术前水平。术后1周生活质量不良与吸烟史、基础状态差及术后气短、疲乏症状密切相关。

【关键词】 老年人;肺癌;生活质量;围术期;症状群;年龄校正查尔森合并症指数

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Perioperative quality of life and risk factors of poor early postoperative quality of life in elderly patients with lung cancer

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【Abstract】 Objective To investigate the perioperative quality of life (QoL) and to analyze the risk factors of poor early postoperative QoL in elderly patients with lung cancer. **Methods** A total of 155 elderly lung cancer patients who received surgical treatment in the Department of Thoracic and Cardiovascular Surgery of the First Hospital Affiliated to Hebei North University from September 2021 to September 2023 were enrolled. A questionnaire survey was conducted among the patients before, one week after, and one month after surgery, and valid questionnaires were finally collected from 142 patients. Age-adjusted Charlson comorbidity index (aCCI) was used to assess overall functional status. The Chinese version of functional assessment of cancer therapy-lung cancer (FACT-L) was employed to assess QoL before, one week after, and one month after surgery. The Chinese version of Anderson symptom assessment scale-lung cancer module was used to evaluate the characteristics of symptom cluster one week after surgery. According to total score of FACT-L one week after surgery, the patients were divided into a good QoL group ($n=74$; ≥ average) and a poor QoL group ($n=68$; < average). SPSS 24.0 was used for statistical analysis, and logistic regression analysis was used to evaluate the risk factors of poor QoL one week after surgery. **Results** The scores of each dimension and total score of FACT-L in elderly lung cancer patients one week after surgery were significantly lower than those before surgery and one month after surgery ($P<0.05$), but there were no statistically significant differences in the these scores between one month after surgery and before surgery ($P>0.05$). The proportions of smoking history and

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aCCI>5, and the incidence of shortness of breath and fatigue in the poor QoL group were significantly higher than those in the good QoL group ($P<0.05$). Logistic regression analysis found that smoking history ($OR=3.425$, 95%CI 1.980-5.922; $P<0.05$), aCCI>5 ($OR=2.627$, 95%CI 1.455-4.744; $P<0.05$), shortness of breath ($OR=2.545$, 95%CI 1.284-5.043; $P<0.05$) and fatigue ($OR=3.086$, 95%CI 1.730-5.508; $P<0.05$) were risk factors of poor QoL in elderly lung cancer patients one week after surgery. **Conclusion** QoL in elderly lung cancer patients declines during the early postoperative period but recovers to the preoperative level one month after surgery. The poor QoL one week after surgery is closely related to smoking history, poor basic status and postoperative symptoms of shortness of breath and fatigue.

【Key words】 aged; lung cancer; quality of life; perioperative period; symptom cluster; age-adjusted Charlson comorbidity index

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最新流行病学调查数据显示[1],2020 年全球肺癌新发病例仅次于女性乳腺癌,位居第二,但肺癌造成的癌症相关死亡率位居第一。根治术是肺癌的主要治疗手段,可提升患者生存期,但老年人作为肺癌的好发人群,各器官功能退化,术后恢复较慢,手术造成的疼痛、呼吸系统症状等会导致生活质量显著降低,而生活质量较差者易对医疗服务产生排斥、抵触情绪,影响后续康复转归[2]。有报道指出,随着术后肺癌患者疼痛逐渐减轻、肺功能逐渐恢复,术后生活质量会随之升高[3]。但目前老年肺癌患者围术期生活质量的纵向研究仍然较少。基于此,本研究通过前瞻性单中心研究调查老年肺癌患者围术期生活质量变化及术后早期生活质量不良的影响因素,报道如下。

1 对象与方法

1.1 研究对象

选取 2021 年 9 月至 2023 年 9 月河北北方学院附属第一医院胸心血管外科收治的 155 例行手术治疗的老年肺癌患者为研究对象,在术前、术后 1 周及术后 1 个月,对患者行问卷调查,最终回收有效问卷者 142 例。对该 142 例患者的住院及调查资料等进行整理分析。纳入标准:行择期胸腔镜肺叶切除术治疗;组织细胞学检查确诊为原发性肺癌,肿瘤局限于单个肺叶,未侵及主支气管;年龄 60~80 岁;术后存活时间≥1 个月;术后意识清醒,沟通能力良好,能进行问卷调查;对本调查知情,且签署知情同意书。排除标准:组织细胞学判断为小细胞肺癌;胸腔镜手术中转开胸;既往胸腔手术治疗史;合并其他恶性肿瘤;合并血液系统疾病、免疫系统疾病;围术期发生危及生命健康的严重并发症;合并精神疾病。

1.2 方法

1.2.1 资料收集 人口学资料问卷包括性别、年龄、婚姻状况等信息。肺癌病理类型、临床分期、手术并发症等资料由查阅电子病历获得。计算年龄校正查尔森合并症指数(age-adjusted Charlson comorbidity index, aCCI)[4]。aCCI 根据 19 种基础疾病及年龄段加权得分。其中,心肌梗死、充血性心力衰竭、周围血管疾病、痴呆或阿尔兹海默病以及年龄 50~59 岁计 1 分;偏瘫、中重度慢性肾病、有并发症及终末期器官损害的糖尿病、轻度肝病、无转移实体瘤、白血病、淋巴瘤及年龄 60~69 岁计 2 分;中重度肝病、年龄 70~79 岁计 3 分;年龄≥80 岁计 4 分;有转移实体瘤、获得性免疫缺陷综合征计 6 分,分值越高,基础状态越差。

1.2.2 生活质量调查 分别于术前 1~2 d、术后 1 周、术后 1 个月时行生活质量调查。住院患者在安静、无他人的病室内,出院患者在门诊复查时进入安静的诊室,均行面对面问卷调查。生活质量调查表采用中文版肺癌患者生活质量测定量表(functional assessment of cancer therapy-lung, FACT-L)[5],由万崇华等学者在 2000 年将 FACT-L 量表编译。FACT-L 共 36 个条目,包含生理、社会和家庭、情感、功能及肺癌特异模块共 5 个维度,各维度得分越高,生活质量越高。以术后 1 周生活质量 FACT-L 总得分分组,将患者分为良好组(≥平均分)及不良组(<平均分)。

1.2.3 症状群特点调查 术后 1 周时,使用中文版安德森症状评估量表-肺癌模块[6]评估过去 24 h 的症状发生情况,量表包含 13 个核心条目及 6 个经中国本土化调试的肺癌患者特异性症状,将 19 个症状分为呼吸道症状群、消化道症状群、神经系统症状群、疼痛-疲乏-睡眠症状群及心理症状群。

1.3 统计学处理

采用 SPSS 24.0 统计软件(美国 IBM 公司)进行数据分析。符合正态分布的计量资料以均数±标准差($\bar{x}\pm s$)表示,单组多时间点的比较采用单因素重复测量方差分析,多时间点两两比较采用 LSD-t 检验,两组间比较采用独立样本 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 logistic 回

归分析评估老年肺癌患者术后1周生活质量不良的影响因素。$P<0.05$为差异有统计学意义。

2 结 果

2.1 老年肺癌患者围术期生活质量变化

术后1周时,老年肺癌患者FACT-L各维度评分及总分均显著低于术前及术后1个月($P<0.05$),术后1个月FACT-L各维度评分及总分与术前比较,差异无统计学意义($P>0.05$;表1)。

2.2 术后1周生活质量良好组与不良组一般资料比较

142例老年肺癌患者FACT-L平均分68.72分,FACT-L总分≥68.72分者74例,纳入良好组,FACT-L总分<68.72分者68例,纳入不良组。不良组吸烟史占比、aCCI>5占比及气短、疲乏症状发生率均显著高于良好组,差异均有统计学意义($P<0.05$;表2)。

2.3 老年肺癌患者术后1周生活质量不良的影响因素

将上述有统计学意义的指标代入logistic回归方程,结果显示吸烟史、aCCI>5、气短、疲乏均为老年肺癌患者术后1周生活质量不良的危险因素($P<0.05$;表3)。

3 讨 论

有学者指出,对于癌症的治疗,患者生活质量的提升较预后生存率更能体现治疗效果[7]。也有报道指出,癌症患者生活质量与预后死亡风险密切相关,生活质量评分低于平均值的患者死亡风险将提升69%[8]。因此,评估老年肺癌患者围术期生活质量可为临床治疗及预后评估提供依据。本研究结果显示,老年肺癌患者术后1周时FACT-L各维度评分及总分均显著低于术前,但术后1个月时评分升高,且与术前评分无明显差异。分析原因为术后早期老年肺癌患者因手术创伤,导致生理及心理状况均受到损伤。而术后1个月时患者功能状况有所恢复,生理及心理也能逐渐适应,引起患者主观生活质量提升并恢复至术前水平[9]。考虑术后1周生活质量较差可能影响患者对医疗服务满意度,甚至影响术后康复的依从性,本研究进一步分析术后1周生活质量不良的危险因素,为老年肺癌围术期临床干预提供依据。

aCCI是一种整合、量化年龄及合并症的评估工具,在预测恶性肿瘤围术期并发症及远期生存率方面具有一定应用价值。有报道指出,老年恶性肿瘤患者中,aCCI高指数者总生存期及无进展生存期明显较低指数者降低[10]。本研究中,aCCI>5为老年肺癌患者术后1周生活质量不良的危险因素,提示术前基础状态越差者,手术创伤造成的不良影响可能更大,术后早期也更易出现生活质量不良。因此,对于存在多项合并症、年龄较大者应在术前完善基础疾病治疗,并在术后密切监测身体状况,关注患者身心健康。

近年,肺癌患者症状群调查及预防成为研究热点,肺癌患者常存在呼吸困难、咯血等呼吸系统症状,这些症状可协同发生并相互关联,缓解症状群对改善生活质量及预后有一定作用,但肺癌患者症状群的研究主要以晚期化疗患者为调查对象[11]。本研究在术后行症状群调查,发现不良组与良好组术后1周呼吸症状群中胸闷发生率分别为80.88%、67.57%,气短发生率分别为83.82%、67.57%,疼痛-疲乏-睡眠症状群中疼痛发生率分别为98.53%、94.59%,疲乏发生率分别为82.35%、63.51%,即老年肺癌患者术后1周可能普遍存在呼吸症状及疼痛-疲乏-睡眠症状,值得临床重视。且气短、疲乏均为老年肺癌患者术后1周生活质量不良的危险因素。究其原因可能为:(1)胸腔镜手术对肺组织的创伤会造成气短等呼吸道症状,气短症状不仅造成患者生理机能下降,也可引起心理压力增加,甚至产生濒死感,导致患者生理及心理健康下降[12];(2)疲乏症状不仅导致患者积极心理水平降低,也造成患者康复训练主动性减弱,躯体活动减少,影响术后康复进程,导致生活质量下降[13]。另据文献报道,吸烟不仅是肺癌的首要高危因素,吸烟的肺癌患者预后生活质量也较非吸烟患者更差[14]。本研究也发现,吸烟史是老年肺癌患者术后1周生活质量不良的危险因素,与上述报道相似。考虑吸烟患者在长期尼

表1 老年肺癌患者围术期FACT-L评分变化

Table 1 Changes of perioperative FACT-L scores in elderly patients with lung cancer ($n=142$, $\bar{x}\pm s$)

Time point	Physiology	Society and family	Emotion	Function	Lung cancer specific module	Total score
Before surgery	24.25±1.96*	19.55±2.03*	19.36±1.86*	14.20±2.13*	29.89±1.88*	107.25±7.92*
One week after surgery	12.42±2.05	18.21±1.89	13.65±2.24	9.20±1.98	15.24±2.76	68.72±9.45
One month after surgery	23.87±2.04*	19.41±1.96*	19.02±2.11*	13.86±2.32*	29.65±2.11*	105.81±8.24*
F	1578.021	20.042	338.012	240.324	1922.308	924.121
P value	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001

FACT-L: functional assessment of cancer therapy-lung. Compared with one week after surgery, *$P<0.05$.

表 2 两组患者一般资料比较

Table 2 Comparison of general data between two groups

Item	Poor QoL group(n=68)	Good QoL group(n=74)	χ^2/t	P value
Male/female(n)	39/29	38/36	0.514	0.473
Age[n(%)]			0.274	0.600
60−70 years	45(66.18)	52(70.27)		
70−80 years	23(33.82)	22(29.73)		
Body mass index(kg/m^2, $\bar{x}\pm s$)	23.26±2.03	23.45±1.96	0.567	0.571
Education level[n(%)]			1.283	0.526
Junior high school or below	33(48.53)	34(45.95)		
Technical secondary school or senior high school	26(38.24)	25(33.78)		
Junior college or above	9(13.23)	15(20.27)		
Marital status[n(%)]			0.198	0.656
Married	58(85.29)	65(87.84)		
Unmarried/divorced/widowed	10(14.71)	9(12.16)		
Smoking history[n(%)]			6.018	0.014
Yes	60(88.24)	53(71.62)		
No	8(11.76)	21(28.38)		
Payment method of medical expenses[n(%)]			1.675	0.643
Urban medical insurance	27(39.71)	26(35.14)		
New rural cooperative medical system	19(27.94)	21(28.38)		
Commercial insurance	18(26.47)	25(33.78)		
Self-paying	4(5.88)	2(2.70)		
Chronic obstructive pulmonary disease or asthma[n(%)]	8(11.76)	6(8.11)	0.533	0.466
Diabetes mellitus[n(%)]	9(13.24)	5(6.76)	1.674	0.196
Peptic ulcer[n(%)]	8(11.76)	3(4.05)	2.948	0.086
Chronic nephrosis[n(%)]	11(16.18)	5(6.76)	3.145	0.076
aCCI[n(%)]			6.254	0.012
≤5	28(41.18)	46(62.16)		
>5	40(58.82)	28(37.84)		
Preoperative albumin level(g/L, $\bar{x}\pm s$)	36.71±3.09	37.22±3.27	0.953	0.342
Preoperative white blood cell level($\times10^9$/L, $\bar{x}\pm s$)	8.06±1.79	7.62±1.65	1.524	0.130
Preoperative C-reactive protein level (mg/L, $\bar{x}\pm s$)	7.65±1.35	7.27±1.24	1.748	0.083
Preoperative interleukin-6 level(pg/ml, $\bar{x}\pm s$)	9.22±1.81	8.79±1.65	1.481	0.141
Pathological type[n(%)]			0.131	0.937
Adenocarcinoma	55(80.88)	59(79.73)		
Squamous carcinoma	11(16.18)	12(16.22)		
Large cell carcinoma	2(2.94)	3(4.05)		
Clinical staging[n(%)]			0.277	0.871
Ⅰ	28(41.18)	32(43.24)		
Ⅱ	36(52.94)	39(52.70)		
Ⅲa	4(5.88)	3(4.06)		
Tumor diameter(cm, $\bar{x}\pm s$)	3.21±0.65	3.10±0.60	1.049	0.296
Respiratory symptom cluster[n(%)]				
Cough	48(70.59)	44(59.46)	1.924	0.165
Expectoration	41(60.29)	36(48.65)	1.936	0.164
Hemoptysis	11(16.18)	7(9.46)	1.444	0.229
Chest distress	55(80.88)	50(67.57)	3.261	0.071
Shortness of breath[n(%)]	57(83.82)	50(67.57)	5.042	0.025
Gastrointestinal symptom cluster[n(%)]				
Nausea	14(20.59)	8(10.81)	2.588	0.108
Vomiting	11(16.18)	6(8.11)	2.189	0.139
Decreased appetite	56(82.35)	57(77.03)	0.619	0.432
Weight loss	58(85.29)	59(79.73)	0.756	0.384
Constipation	35(51.47)	35(47.30)	0.247	0.619
Nervous system symptom cluster[n(%)]				
Dry mouth	34(50.00)	33(44.59)	0.416	0.519
Forgetfulness	12(17.65)	14(18.92)	0.038	0.845
Numbness	4(5.88)	3(4.05)	0.013	0.909*
Pain-fatigue-sleep symptom cluster[n(%)]				
Pain	67(98.53)	70(94.59)	0.665	0.415*
Fatigue	56(82.35)	47(63.51)	6.313	0.012
Disturbed sleep	48(70.59)	42(56.76)	2.921	0.087
Drowsiness	18(26.47)	15(20.27)	0.764	0.382
Psychological symptom cluster[n(%)]				
Distress	16(23.53)	11(14.86)	1.728	0.189
Sorrow	8(11.76)	6(8.11)	0.533	0.465

QoL: quality of life; aCCI: age-adjusted Charlson comorbidity index. * Continuously corrected *Chi*-square test.

表3 术后1周生活质量不良的logistic回归分析

Table 3 Logistic regression analysis of poor quality of life at one week after surgery

Factor	β	*SE*	*Wald* χ^2	*P* value	*OR*	95%*CI*
Smoking history	1.231	0.355	12.024	0.001	3.425	1.980-5.922
aCCI>5	0.966	0.289	11.173	0.001	2.627	1.455-4.744
Shortness of breath	0.934	0.324	8.310	0.004	2.545	1.284-5.043
Fatigue	1.127	0.339	11.052	0.001	3.086	1.730-5.508

aCCI: age-adjusted Charlson comorbidity index.

古丁烟雾等的刺激下,肺组织炎症免疫反应导致上皮纤毛运动功能受限,术后呼吸道分泌物清除能力严重减退,导致气短、胸闷等呼吸道症状群发生风险更高,从而影响生活质量[15]。

综上,吸烟史、高aCCI指数及术后气短、疲乏症状可增加老年肺癌患者术后1周生活质量不良的发生风险,临床可给予鼓励戒烟、缓解症状群等措施改善术后早期生活质量。患者术后1个月生活质量可基本恢复至术前水平。

【参考文献】

[1] Sung H, Ferlay J, Siegel RL, *et al*. Global Cancer Statistics 2020: GLOBOCAN estimates of incidence and mortality worldwide for 36 cancers in 185 countries[J]. CA Cancer J Clin, 2021, 71(3): 209-249. DOI: 10.3322/caac.21660.

[2] Rodrigues C. Lung cancer treatment in the elderly[J]. Port J Card Thorac Vasc Surg, 2023, 29(4): 13-14. DOI: 10.48729/pjctvs.324.

[3] Khullar OV, Wei JW, Wagh K, *et al*. Preoperative lung function is associated with patient-reported outcomes after lung cancer surgery[J]. Ann Thorac Surg, 2021, 112(2): 415-422. DOI: 10.1016/j.athoracsur.2020.09.016.

[4] Di Donato V, D'Oria O, Giannini A, *et al*. Age-adjusted Charlson comorbidity index predicts survival in endometrial cancer patients[J]. Gynecol Obstet Invest, 2022, 87(3-4): 191-199. DOI: 10.1159/000525405.

[5] 万崇华, 张灿珍, 宋元龙, 等. 肺癌患者生存质量测定量表FACT-L中文版[J]. 中国肿瘤, 2000, 9(3): 109-110. DOI: CNKI:SUN:ZHLU.0.2000-03-005.

[6] 张立力, 臧瑜. MD安德森症状评估量表肺癌模块的修订和考评[J]. 肿瘤, 2013, 33(5): 434-438. DOI: 10.3781/j.issn.1000-7431.2013.05.009.

[7] Prisutkul A, Dechaphunkul A, Arundorn T, *et al*. The effectiveness of a pain management programme on pain control and quality of life in patients with metastatic cancer[J]. Int J Palliat Nurs, 2022, 28(9): 436-444. DOI: 10.12968/ijpn.2022.28.9.436.

[8] Zuydam AC, Rogers SN, Roe JWG. Addressing patients' concerns in speech and language therapy consultations following the diagnosis and treatment of head and neck cancer[J]. Curr Opin Otolaryngol Head Neck Surg, 2023, 31(3): 159-164. DOI: 10.1097/MOO.0000000000000881.

[9] Bade BC, Gan G, Li F, *et al*. Randomized trial of physical activity on quality of life and lung cancer biomarkers in patients with advanced stage lung cancer: a pilot study[J]. BMC Cancer, 2021, 21(1): 352-359. DOI: 10.1186/s12885-021-08084-0.

[10] Zhou S, Zhang XH, Zhang Y, *et al*. The age-adjusted Charlson comorbidity index predicts prognosis in elderly cancer patients[J]. Cancer Manag Res, 2022, 14(1): 1683-1691. DOI: 10.2147/CMAR.S361495.

[11] Tang H, Chen L, Wang Y, *et al*. The efficacy of music therapy to relieve pain, anxiety, and promote sleep quality, in patients with small cell lung cancer receiving platinum-based chemotherapy[J]. Support Care Cancer, 2021, 29(12): 7299-7306. DOI: 10.1007/s00520-021-06152-6.

[12] Ichimura H, Kobayashi K, Gosho M, *et al*. Preoperative predictors of restoration in quality of life after surgery for lung cancer[J]. Thorac Cancer, 2021, 12(6): 835-844. DOI: 10.1111/1759-7714.13819.

[13] Schad F, Steinmann D, Oei SL, *et al*. Evaluation of quality of life in lung cancer patients receiving radiation and Viscum album L.: a real-world data study[J]. Radiat Oncol, 2023, 18(1): 47-51. DOI: 10.1186/s13014-023-02234-3.

[14] Halms T, Strasser M, Hasan A, *et al*. Smoking and quality of life in lung cancer patients: systematic review[J]. BMJ Support Palliat Care, 2023, 22(1): e004256. DOI: 10.1136/spcare-2023-004256.

[15] Martini K, Chassagnon G, Frauenfelder T, *et al*. Ongoing challenges in implementation of lung cancer screening[J]. Transl Lung Cancer Res, 2021, 10(5): 2347-2355. DOI: 10.21037/tlcr-2021-1.

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