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体质指数与直肠癌的关系探讨

李娜 潘红艳[△] 李景文 崔明明 张志莹

(哈尔滨医科大学附属肿瘤医院 黑龙江 哈尔滨 150081)

摘要 目的:探讨体质指数(body mass index, BMI)与我国直肠癌发病的关系,为直肠癌的预防提供参考。**方法:**用病例-对照研究方法分析 353 例首次确诊的直肠癌患者和 354 名健康人的 BMI,比较两组人群 BMI 的情况。**结果:**首次确诊的直肠癌患者平均 BMI 为 $(24.54 \pm 4.48) \text{ kg/m}^2$,健康对照人群平均 BMI 为 $(23.58 \pm 3.12) \text{ kg/m}^2$,直肠癌患者的 BMI 明显高于健康对照人群,其差别具有统计学意义($P < 0.001$)。根据性别不同进行分组后,可以看出不同性别直肠癌患者的 BMI 均比健康对照组高。logistic 回归分析, BMI 的升高是直肠癌发生的危险因素,OR 值为 1.056 (95% CI, 1.027~1.089)。**结论:**直肠癌的发生与 BMI 有关。

关键词: 直肠癌;危险因素;体质指数

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Relationship between Body Mass Index and Rectal Cancer

LI Na, PAN Hong-yan[△], LI Jing-wen, CUI Ming-ming, ZHANG Zhi-ying

(The Third Affiliated Hospital of Harbin Medical University, Harbin, Heilongjiang, 150081, China)

ABSTRACT Objective: To investigate the relationship between BMI and rectal cancer in Chinese population and provide evidences for the prevention of rectal cancer. **Methods:** Clinical data of 353 rectal cancer patients and 354 healthy subjects were compared. **Results:** The mean BMI was significantly higher in rectal cancer patients than that in healthy subjects ($24.54 \pm 4.48 \text{ kg/m}^2$ vs $23.58 \pm 3.12 \text{ kg/m}^2$, ($P < 0.001$)). When stratified by sex, the BMI was higher in rectal cancer patients than that in healthy subjects ($P < 0.001$)). Logistic regression analyses showed that BMI was an important risk factor of rectal cancer (dds ratio = 1.056, 95% confidence interval = 1.027~1.089). **Conclusion:** The occurrence of rectal cancer is related to BMI.

Key words: Rectal cancer; Risk factor; Body mass index

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前言

随着经济的发展和水平的提高,大肠癌的发病率正呈逐年上升的趋势,引起大肠癌发病的危险因素很多^[1-3],肥胖被证实为大肠癌发病的重要危险因素^[4-6]。体质指数(body mass index, BMI)是评价肥胖程度的重要客观指标。国内外有许多研究表明, BMI 与结肠癌的发病密切相关^[7-9],但关于 BMI 与直肠癌的关系尚不是很明确,为探讨 BMI 与我国直肠癌发病的关系,本研究对 353 例初次住院的直肠癌患者和 354 名健康人群的 BMI 情况进行对比和分析,现将分析结果汇报如下。

1 对象与方法

1.1 实验对象

病例组:筛选 2010 年 1 月至 2013 年 1 月在哈尔滨医科大学附属肿瘤医院进行治疗的直肠癌病例 353 例进行回顾性分析,要求首次确诊为直肠癌,年龄在 18 周岁以上,其中男 204 例,女 149 例,年龄在 19~84 岁之间,中位年龄 56 岁。健康对照组:2010 年至 2013 年在我院体检中心进行体检的健康人群 354 例,其中男性 192 例,女性 162 例,年龄 21~86 岁,

中位年龄 58 岁。

1.2 实验方法

病例组的检测指标包括年龄、性别、身高、入院时体重、病理诊断;健康对照组的检测指标包括年龄、性别、身高、体重。用 BMI 来确定人的肥胖程度。BMI 的计算是体重/身高的平方(kg/m^2)。根据亚太地区肥胖的诊断标准, BMI 小于 18.5 kg/m^2 为体重过低, $18.5 \sim 22.9 \text{ kg/m}^2$ 为正常, BMI 大于等于 23.0 kg/m^2 为超重,健康对照组人群的身高体重以当日体检时测量的数值为准。

1.3 统计学分析

使用 SPSS 软件进行统计学分析,应用 t 检验比较病例组和对照组的 BMI 差别,应用多元线性回归来分析 BMI 是否为直肠癌患病的有统计学意义的独立危险因素,双侧检验, $P < 0.05$ 时有统计学意义。

2 结果

2.1 不同年龄的直肠癌患者和健康对照者的 BMI 平均值比较

直肠癌患者平均 BMI 为 $(24.54 \pm 4.48) \text{ kg/m}^2$,健康对照组的平均 BMI 为 $(23.58 \pm 3.12) \text{ kg/m}^2$,直肠癌患者平均 BMI 较健康对照组高,两组差异具有统计学意义($P < 0.001$)(表 1)。

2.2 不同性别的患者和健康对照者的 BMI 的平均值比较

男性和女性直肠癌患者的平均 BMI 均较健康对照组高,其差别具有统计学意义($P < 0.05$)(表 2)。

2.3 直肠癌危险因素的 logistic 回归分析

作者简介:李娜(1981-),女,硕士,住院医师,主要研究方向:肥胖与肿瘤的相关性,电话:0451-86298783,

E-mail:lin.a1688@163.com

△通讯作者:潘红艳, E-mail: yichunphy@yahoo.com.cn

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表 1 不同年龄组的患者和健康对照者的 BMI 平均值比较

Table 1 BMI of rectal cancer patients and healthy subjects after age-stratification

	Rectal cancer patients		Health subjects		P
	Case	BMI(kg/ m ²)	Cases	BMI(kg/ m ²)	
18—29	10	22.34± 3.67	13	22.68± 2.71	0.723
30—39	37	23.18± 5.07	43	23.34± 2.39	0.846
40—49	59	24.39± 4.18	32	22.14± 2.76	<0.001
50—59	83	25.23± 4.51	76	23.98± 2.88	0.029
60—69	107	24.52± 3.83	107	23.69± 3.10	0.079
70—79	48	24.96± 5.38	77	24.06± 3.68	0.124
≥80	9	22.28± 5.43	6	24.48± 3.87	0.206
Total	353	24.54± 4.48	354	23.58± 3.12	<0.001

表 2 不同性别的患者和健康对照者的 BMI 平均值比较

Table 2 BMI of rectal cancer patients and health subjects after sex-stratification

Gender	Rectal cancer patients		Health subjects		P
	Cases	BMI(kg/ m ²)	Cases	BMI(kg/ m ²)	
Male	204	24.59± 4.34	192	23.67± 3.03	0.019
Female	149	24.39± 4.46	162	23.74± 3.24	0.031
Total	353	24.48± 4.54	354	23.68± 3.12	<0.001

以是否患直肠癌为因变量,以年龄、性别、及 BMI 值作为自变量进行 logistic 回归,结果显示,BMI 的升高是直肠癌发生的独立危险因素,OR 值为 1.056 (95% CI,1.027~1.089)(表 3)。

表 3 直肠癌危险因素的回归分析

Table 3 Logistic regression analysis for risk factors of rectal cancer

Items	B	SE	P	OR	95% CI
BMI	0.054	0.017	<0.0001	1.056	1.027-1.089
Age	-0.010	0.004	0.013	0.987	0.978-0.996
Sex	-0.218	0.112	0.046	0.801	0.642-0.994
Constant	-1.439	0.445	0.001	0.234	

3 讨论

肥胖已被证实为结直肠癌发病的重要危险因素^[10-12]。体质指数 (body mass index, BMI) 是评价肥胖程度的重要客观指标。国内外有许多研究表明, BMI 与结肠癌的发病密切相关^[13-15],但关于 BMI 与直肠癌的关系尚不是很明确,本研究用病例-对照研究的方法分析了 353 例首次确诊的直肠癌患者和 354 名健康人的 BMI 情况以探讨 BMI 与我国直肠癌发病的关系,结果表明不同年龄和性别的直肠癌患者的 BMI 均较健康对照组高,其差别具有统计学意义($P<0.05$)。说明 BMI 与我国直肠癌的发病有直接相关性。应用 logistic 回归分析,结果显示 BMI 的升高是直肠癌发生的独立危险因素。因此,本研究得出结论,直肠癌的发病与 BMI 有关。

近年结直肠癌的发病率在我国这种处在经济转型期的发展中国家增加迅猛^[16-18]。许多研究表明肥胖、体力活动减少、高

脂肪低纤维素饮食等不良的现代生活方式是结直肠癌发病率增加的重要原因^[18-20]。许多分子水平的研究也表明,脂肪本身就是增加结直肠癌风险的因素^[21]。脂肪细胞和前脂肪细胞可以促进结直肠癌细胞的增殖^[22],脂肪酸合成酶的过度表达也已被证实与结直肠癌的相关表型有关^[23],此外脂肪因子如脂联素、瘦素等也被证实是增加结直肠癌风险的重要因素。因此,改善生活方式,预防肥胖是未来预防结直肠癌发生的重要方式。BMI 作为评价肥胖程度的重要客观指标,其测定方便简单,临床上易于掌握。

未来我们可以通过测定 BMI, 筛选直肠癌的高危病人,从而指导人们通过改变饮食结构和控制体重来减少直肠癌的发生,更好的预防直肠癌。

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