

炎性肠病患者发生非酒精性脂肪性肝病的危险因素

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摘要: 目的 探讨炎症肠病(inflammatory bowel disease, IBD)患者非酒精性脂肪性肝病(non-alcoholic fatty liver disease, NAFLD)患病情况及相关危险因素。方法 以2017年1月至2019年10月新疆军区总医院收治的409例IBD患者为研究对象,应用腹部超声筛查NAFLD,根据是否合并NAFLD分为NAFLD组(131例)和对照组(278例),比较两组患者年龄、性别、体重指数(body mass index, BMI)、腹围、病程及并发症(高血压、糖尿病、吸烟)、天门冬氨酸氨基转移酶(aspartate aminotransferase, AST)、丙氨酸氨基转移酶(alanine aminotransferase, ALT)、 γ -谷氨酰转氨酶(γ -glutamyltransferase, GGT)、白蛋白、糖化血红蛋白(glycosylated hemoglobin, HbA1c)、低密度脂蛋白胆固醇(low density lipoprotein cholesterol, LDL-C)、血肌酐、估算肾小球滤过率(estimated glomerular filtration rate, eGFR)和C-反应蛋白(C-reactive protein, CRP)等的差异。采用Logistic回归分析IBD患者发生NAFLD的独立危险因素。结果 IBD患者NAFLD的患病率为32.03%(131/409)。NAFLD组患者年龄[(50.24 ± 12.83)岁 vs (38.74 ± 10.91)岁]、BMI[(28.24 ± 4.90) kg/m² vs (23.52 ± 3.73) kg/m²]、腹围[(93.10 ± 11.52) cm vs (85.52 ± 10.06) cm]、病程[(8.52 ± 1.84)年 vs (5.84 ± 1.28)年]、高血压比例[20.61%(27/131) vs 4.68%(13/278)]、糖尿病比例[9.92%(13/131) vs 1.80%(5/278)]、吸烟比例[50.38%(66/131) vs 38.13%(106/278)]、GGT[(26.57 ± 8.19) U/L vs (18.46 ± 4.36) U/L]和HbA1c[(6.65 ± 2.17)% vs (3.64 ± 1.05)%]水平均显著高于对照组,差异有统计学意义(P 均< 0.05)。多因素Logistic回归分析表明年龄($OR = 1.33$, 95% CI : 1.15~1.82, $P = 0.018$)、BMI($OR = 1.80$, 95% CI : 1.25~3.27, $P = 0.002$)、病程($OR = 2.60$, 95% CI : 1.10~3.26, $P = 0.010$)和糖尿病($OR = 1.77$, 95% CI : 1.23~4.79, $P = 0.006$)是IBD患者发生NAFLD的独立危险因素。结论 IBD患者NAFLD的患病率高,年龄、BMI、病程和糖尿病均是IBD患者发生NAFLD的独立危险因素,可通过促进健康生活方式进行代谢干预,以减少NAFLD的发生。

关键词: 炎症肠病; 脂肪性肝病, 非酒精性; 患病率; 危险因素

Risk factors for non-alcoholic fatty liver disease in patients with inflammatory bowel disease

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Abstract: Objective To investigate the prevalence and related risk factors of non-alcoholic fatty liver disease (NAFLD) in patients with inflammatory bowel disease (IBD). **Methods** A total of 409 patients with IBD in General Hospital of Xinjiang Military Region from January 2017 to October 2019 were enrolled. Abdominal ultrasound was used to identify NAFLD. The patients were divided into NAFLD group (131 cases) and control group (278 cases) according to whether combined with NAFLD or not. The differences of age, gender, body mass index (BMI), abdominal circumference, course of disease, complications (including hypertension, diabetes and smoking) and aspartate aminotransferase (AST), alanine aminotransferase (ALT), γ -glutamyltransferase (GGT), glycosylated hemoglobin (HbA1c), low density lipoprotein cholesterol (LDL-C), serum creatinine, estimated glomerular filtration rate (eGFR) and C-reactive protein (CRP) of patients between the two groups were compared. Logistic regression analysis was used to analyze the independent risk factors of NAFLD in patients with IBD. **Results** In patients with IBD, the prevalence of NAFLD was 32.03% (131/409). Age [(50.24 ±

12.83) years old vs (38.74 ± 10.91) years old], BMI [(28.24 ± 4.90) kg/m² vs (23.52 ± 3.73) kg/m²], abdominal circumference [(93.10 ± 11.52) cm vs (85.52 ± 10.06) cm], course of disease [(8.52 ± 1.84) years vs (5.84 ± 1.28) years], hypertension rate [20.61% (27/131) vs 4.68% (13/278)], diabetes rate [9.92% (13/131) vs 1.80% (5/278)], smoking rate [50.38% (66/131) vs 38.13% (106/278)], GGT [(26.57 ± 8.19) U/L vs (18.46 ± 4.36) U/L] and HbA1c [(6.65 ± 2.17)% vs (3.64 ± 1.05)%] levels of patients in NAFLD group were significantly higher than those of control group, the differences were statistically significant (all $P < 0.05$). Logistic regression analysis showed that age ($OR = 1.33$, 95%CI: 1.15~1.82, $P = 0.018$), BMI ($OR = 1.80$, 95%CI: 1.25~3.27, $P = 0.002$), course of disease ($OR = 2.60$, 95%CI: 1.10~3.26, $P = 0.010$) and diabetes ($OR = 1.77$, 95%CI: 1.23~4.79, $P = 0.006$) were independent risk factors of NAFLD in patients with IBD. **Conclusions** The prevalence of NAFLD is high in patients with IBD. Age, BMI, course of disease and diabetes are independent risk factors of NAFLD in patients with IBD. Metabolic intervention should be carried out by promoting healthy lifestyle to reduce the incidence of NAFLD in patients with IBD.

Key words: Inflammatory bowel disease; Fatty liver disease, non-alcoholic; Prevalence; Risk factors

炎性肠病(inflammatory bowel disease, IBD)是免疫介导的影响肠道的慢性炎症性疾病,临床表现为腹痛、腹泻、出血和体质量减轻,包括克罗恩病(Crohn's disease, CD)和溃疡性结肠炎(ulcerative colitis, UC),严重影响患者的生活质量^[1]。非酒精性脂肪性肝病(non-alcoholic fatty liver disease, NAFLD)是最常见的慢性肝病之一,其特征是肝细胞中脂肪变性的比例> 5%^[2]。尽管IBD通常被认为是一种消耗性疾病,在某些情况下表现为吸收不良和体质量减轻,但最近的研究表明,相比普通人群,IBD患者中NAFLD患病率增加^[3,4]。目前对于IBD患者发生NAFLD的原因和易感因素的研究较少,IBD患者NAFLD风险增加的原因尚未明确。本研究以IBD患者为研究对象,探讨了IBD患者NAFLD患病情况及相关危险因素。

1 资料与方法

1.1 研究对象 本研究连续纳入2017年1月至2019年10月新疆军区总医院收治的IBD患者。纳入标准:

①年龄≥ 18岁;②经病理检查确诊IBD 6个月以上;③病历资料完整。排除标准:①既往有慢性肝病病史;②有大量饮酒史患者;③既往有肝脏手术史患者;④孕产妇患者。患者及其家属知情同意。本研究符合临床伦理准则,并获得医院伦理委员会批准(2016111224)。

1.2 研究方法

1.2.1 临床资料 收集研究对象入院时的临床资料,包括性别、年龄、体重指数(body mass index, BMI)、腹围、病程/并发症(高血压、糖尿病、吸烟等)及药物使用情况[5-氨基水杨酸、糖皮质激素及肿瘤坏死因子(tumor necrosis factor, TNF)抑制剂]。入院次日留取晨起空腹

静脉血,检测天门冬氨酸氨基转移酶(aspartate aminotransferase, AST)、丙氨酸氨基转移酶(alanine aminotransferase, ALT)、γ-谷氨酰转氨酶(gamma-glutamyltransferase, GGT)、白蛋白、糖化血红蛋白(glycosylated hemoglobin, HbA1c)、低密度脂蛋白胆固醇(low density lipoprotein cholesterol, LDL-C)、血肌酐、估算肾小球滤过率(estimated glomerular filtration rate, eGFR)和C-反应蛋白(C-reactive protein, CRP)等。

1.2.2 腹部超声检查 采用飞利浦公司EPIQ 5彩色超声仪行腹部超声检查,患者取仰卧位,平静呼吸,两手置于头两侧,使肋间距增大,由同一位经验丰富的超声医师操作,扫查肝脏,评估是否存在NAFLD,当出现典型超声表现,如明亮的肝脏回声模式、肝内结构分辨率降低等判定存在NAFLD^[5]。根据超声结果分为NAFLD组和对照组。

1.3 统计学处理 采用SPSS 25.0软件进行统计学分析,年龄、BMI、腹围、病程、ALT及AST等计量资料符合正态分布,以 $\bar{x} \pm s$ 表示,两组间比较采用独立样本 t 检验;性别、高血压比例、糖尿病比例及吸烟比例等计数资料以例数和百分数表示,两组间比较采用 χ^2 检验。采用二元Logistic回归分析IBD患者发生NAFLD的危险因素。以双侧 $P < 0.05$ 为差异有统计学意义。

2 结果

2.1 IBD患者一般资料 本研究共纳入409例IBD患者,其中男性184例,女性225例,年龄(43.56 ± 10.17)岁, BMI为(25.06 ± 3.84) kg/m²,病程(6.86 ± 2.51)年。合并高血压40例(9.78%),糖尿病18例(4.40%),吸烟172例(42.05%)。CD患者216例, UC患者193例。合并NAFLD者131例,患

病率为32.03% (131/409), 按脂肪浸润程度分为轻度68例, 中度53例, 重度10例。

2.2 两组患者一般资料及生物化学指标 NAFLD组患者年龄、BMI、腹围、病程、高血压比例、糖尿病比例、吸烟比例、血清GGT和HbA1c水平显著高于对照组, 差异有统计学意义 (P 均 <0.05)。见表1。

2.3 IBD患者发生NAFLD的Logistic多因素回归分析以是否有合并NAFLD为因变量, 将表1中差异有统

计学意义的因素作为自变量, 进行Logistic回归分析。结果表明, 年龄 ($OR = 1.33$, 95%CI: 1.15~1.82, $P = 0.018$)、BMI ($OR = 1.80$, 95%CI: 1.25~3.27, $P = 0.002$)、病程 ($OR = 2.60$, 95%CI: 1.10~3.26, $P = 0.010$) 和糖尿病 ($OR = 1.77$, 95%CI: 1.23~4.79, $P = 0.006$) 是IBD患者发生NAFLD的独立危险因素, 见表2、表3。

表1 NAFLD组和对照组IBD患者一般资料及生物化学指标

项目	NAFLD组 (131例)	对照组 (278例)	统计量值	P 值
年龄 ($\bar{x} \pm s$, 岁)	50.24 \pm 12.83	38.74 \pm 10.91	$t = 9.389$	< 0.001
男/女 (例)	68/63	116/162	$\chi^2 = 3.73$	0.063
CD/UC (例)	73/58	166/112	$\chi^2 = 0.583$	0.445
BMI ($\bar{x} \pm s$, kg/m ²)	28.24 \pm 4.90	23.52 \pm 3.73	$t = 10.759$	< 0.001
腹围 ($\bar{x} \pm s$, cm)	93.10 \pm 11.52	85.52 \pm 10.06	$t = 6.718$	< 0.001
病程 ($\bar{x} \pm s$, 年)	8.52 \pm 1.84	5.84 \pm 1.28	$t = 13.986$	< 0.001
高血压 [例 (%)]	27 (20.61)	13 (4.68)	$\chi^2 = 25.623$	< 0.001
糖尿病 [例 (%)]	13 (9.92)	5 (1.80)	$\chi^2 = 13.972$	< 0.001
吸烟 [例 (%)]	66 (50.38)	106 (38.13)	$\chi^2 = 5.485$	0.019
5-氨基水杨酸 [例 (%)]	45 (34.35)	72 (25.90)	$\chi^2 = 3.114$	0.078
糖皮质激素类 [例 (%)]	9 (6.87)	20 (7.19)	$\chi^2 = 0.014$	0.905
TNF抑制剂 [例 (%)]	47 (35.88)	115 (41.37)	$t = 1.122$	0.291
AST ($\bar{x} \pm s$, U/L)	20.92 \pm 7.14	19.93 \pm 5.23	$t = 1.581$	0.115
ALT ($\bar{x} \pm s$, U/L)	24.56 \pm 6.89	24.30 \pm 4.71	$t = 0.446$	0.656
GGT ($\bar{x} \pm s$, U/L)	26.57 \pm 8.19	18.46 \pm 4.36	$t = 13.055$	< 0.001
白蛋白 ($\bar{x} \pm s$, mg/L)	42.36 \pm 6.12	42.83 \pm 4.76	$t = 0.848$	0.397
HbA1c ($\bar{x} \pm s$, %)	6.65 \pm 2.17	3.64 \pm 1.05	$t = 18.917$	< 0.001
LDL-C ($\bar{x} \pm s$, mmol/L)	2.57 \pm 0.69	2.48 \pm 0.71	$t = 1.207$	0.228
eGFR ($\bar{x} \pm s$, ml/min)	107.24 \pm 23.61	105.80 \pm 25.57	$t = 0.544$	0.587
CRP ($\bar{x} \pm s$, mg/L)	12.31 \pm 2.08	12.12 \pm 2.84	$t = 0.684$	0.494

表2 IBD患者发生NAFLD的多因素Logistic回归分析赋值表

变量	类型	赋值
年龄	连续变量	实测值
BMI	连续变量	实测值
病程	连续变量	实测值
高血压	二分类变量	无=0, 有=1
糖尿病	二分类变量	无=0, 有=1
GGT	连续变量	实测值

表3 IBD患者发生NAFLD的Logistic多因素回归分析

变量	β 值	SE	OR值	95%CI	P 值
年龄	0.284	0.125	1.328	1.153~1.827	0.018
BMI	0.589	0.172	1.802	1.256~3.274	0.002
病程	0.957	0.266	2.604	1.107~3.269	0.010
高血压	0.302	0.128	1.353	0.862~2.357	0.510
糖尿病	0.573	0.182	1.774	1.232~4.793	0.006
GGT	0.186	0.118	1.096	0.474~1.458	0.282

3 讨论

NAFLD是现代社会最常见的肝病之一,发病率逐年升高,被认为是一个日益重要的健康问题^[6]。NAFLD增加了心血管相关病死率和肝癌的发生风险,需进行早期识别和干预^[7-9]。IBD是自身免疫相关的肠道疾病,不仅会影响机体营养物质的消化吸收,还会使机体处于炎症激活的状态^[10,11]。本研究中IBD患者NAFLD的患病率为32.03%,显著高于一般人群的21%^[12],Magri等^[13]研究表明,IBD患者中NAFLD的患病率为40.4%,与本研究结果类似,再次说明IBD患者(无论是CD还是UC)均面临NAFLD高发率的问题。

本研究进一步探讨了IBD患者发生NAFLD的危险因素,结果表明年龄和病程与NAFLD的发生独立相关,这可能与随年龄增长代谢性疾病的危险因素逐渐增加有关;患病时间越长,发生NAFLD的风险越大。既往研究表明,IBD的自然病史与肝细胞脂肪变性和分级间存在显著相关性^[14-16],这提示IBD病程是NAFLD进展的独立预测因子。此外,高BMI和高血糖也是IBD患者并发NAFLD的主要危险因素,肥胖和高血糖是最常见的代谢综合征表现,也是所有代谢性疾病的主要诱因,在IBD患者中也是如此^[17-19]。但在血脂方面,观察组和对照组差异无统计学意义,事实上,在一项对合并和未合并IBD的NAFLD患者的回顾性研究中,与非IBD患者相比,IBD患者倾向于发展为具有较少代谢危险因素的NAFLD^[20-22]。以上研究提示还有其他因素导致无代谢综合征的IBD患者发生NAFLD。Adam等^[23]研究表明,由于IBD患者肠道环境存在免疫异常及炎症反应的可能性较大,故对肠道菌群的分布会产生一定影响,而肠道菌群是影响体内脂代谢的重要因素。当肠道中以有害菌为主的革兰氏阴性菌含量升高时,Toll样受体4(Toll like receptor4, TLR-4)受细胞壁的脂多糖成分影响大量生成,从而导致血液中TLR-4水平升高,诱发的肝脏炎症反应程度上升,最终引起肝脏脂代谢紊乱,导致NAFLD发生^[24,25]。同时此类患者的肠道通透性可能由于炎症原因而显著增加,导致肠道耐受能力及肠黏膜细胞构造显著改变,故可能发生更高循环水平的炎症因子表达,促使患者肝脏内肝星状细胞表达更高水平的脂多糖,而肝星状细胞本身又可在脂多糖的诱导下发生炎性及纤维表型分化,导致肝脏代谢功能显著下降,最终诱发NAFLD^[26]。ALT及AST升高不能预测NAFLD,这表明NAFLD的发展可能较隐匿,ALT及AST正常并不能排除NAFLD^[27-29]。因此,无论IBD患者是否存

在血清ALT及AST升高或肝脏疾病的临床症状,对肝脏脂肪变性的评估总是必要的,特别是对具有高风险特征的患者,包括肥胖、超重和高龄患者^[30]。因此,IBD患者应进行NAFLD相关危险因素的筛查,以预防肝脏疾病的发展。可通过纠正饮食习惯和增加运动来改善患者的代谢状况,从而对肝脏疾病的演变产生有益影响^[31]。

综上,IBD患者NAFLD的患病率高,年龄、BMI、病程和糖尿病均是IBD患者发生NAFLD的独立危险因素,对于IBD的管理不应局限于肠道干预,还应通过促进健康生活方式和正确饮食方案进行代谢干预,以减少NAFLD的发生。

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