

· 青少年抑郁障碍专题 ·

儿童青少年抑郁障碍非自杀性自伤行为与脂代谢的关联研究

孙锋 蒋光明 李冠军 郭茜 陈海莹 姚高峰 崔舒

236000 阜阳市第三人民医院精神科(孙锋、蒋光明、姚高峰、崔舒); 200030 上海交通大学医学院附属精神卫生中心临床三科(李冠军、郭茜、陈海莹)

通信作者: 陈海莹, Email: annedoctor@163.com

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【摘要】目的 探讨儿童青少年抑郁障碍患者非自杀性自伤(NSSI)行为与脂代谢的关系。**方法** 回顾性选取2020年4月—2021年12月在阜阳市第三人民医院住院的681例儿童青少年抑郁障碍患者为研究对象,将患者分为伴NSSI组($n=254$)和不伴NSSI组($n=427$)。比较两组患者的一般资料和脂代谢水平,采用二项Logistic回归分析儿童青少年抑郁障碍患者发生非自杀性自伤(NSSI)行为的相关因素。**结果** 两组患者性别、发病年龄、总病程、文化程度、体重指数和高密度脂蛋白胆固醇(HDL-C)比较,差异均有统计学意义(均 $P < 0.05$)。二项Logistic回归分析显示,女性、体重指数高、HDL-C高是儿童青少年抑郁障碍患者发生NSSI行为的危险因素($OR > 1, P < 0.05$),发病年龄大是患者发生NSSI行为的保护因素($OR < 1, P < 0.01$)。**结论** 儿童青少年抑郁障碍患者NSSI行为与性别、发病年龄、HDL-C和体重指数相关。

【关键词】 儿童; 青少年; 抑郁障碍; 非自杀性自伤; 脂代谢

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Association between non-suicidal self-injury behavior and lipid metabolism in children and adolescents with depressive disorder Sun Feng, Jiang Guangming, Li Guanjun, Guo Qian, Chen Haiying, Yao Gaofeng, Cui Shu

Psychiatry Department, Fuyang Third People's Hospital, Fuyang 236000, China (Sun F, Jiang GM, Yao GF, Cui S); Third Clinical Department, Shanghai Mental Health Center, Shanghai Jiaotong University School of Medicine, Shanghai 200030, China (Li GJ, Guo Q, Chen HY)

Corresponding author: Chen Haiying, Email: annedoctor@163.com

【Abstract】Objective To explore the association between non-suicidal self-injury (NSSI) behavior and lipid metabolism in children and adolescents with depressive disorder. **Methods** A retrospective study was conducted on 681 children and adolescents with depressive disorder who were hospitalized at the Fuyang Third People's Hospital from April 2020 to December 2021. The patients were divided into a group with NSSI ($n=254$) and a group without NSSI ($n=427$). The general information and lipid metabolism of two groups of patients were compared, and binomial Logistic regression was used to analyze the related factors of NSSI behavior in children and adolescents with depressive disorder. **Results** The differences in gender, age of onset, total course of disease, educational level, body mass index (BMI), and high-density lipoprotein cholesterol (HDL-C) between the two groups of patients were statistically significant (all $P < 0.05$). Binomial Logistic regression analysis showed that women, high BMI, and high HDL-C were risk factors for NSSI behavior in children and adolescents with depressive disorder ($OR > 1, P < 0.05$), while older onset age was a protective factor for NSSI behavior ($OR < 1, P < 0.01$), and the differences were statistically significant. **Conclusions** NSSI behavior in children and adolescents with depressive disorder is associated with gender, age of onset, HDL-C, and BMI.

【Key words】 Child; Adolescent; Depressive disorder; Non-suicidal self-injury; Lipid metabolism

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抑郁障碍是儿童青少年常见的心理健康疾病,约6%的儿童青少年患有抑郁障碍^[1]。患有抑郁障碍对儿童青少年的生长发育、学习、家庭和社会关

系产生诸多负面影响,可导致自伤自杀^[2],增加致残率和死亡风险,成为世界性公共卫生难题之一。国外一项针对儿童青少年的研究表明,抑郁障碍患

者出现非自杀性自伤(non-suicidal self-injury, NSSI)的风险更高,其中严重抑郁障碍患者中NSSI的发生率约为47%^[3]。一项Meta分析显示,中国儿童青少年NSSI的检出率为22.37%^[4]。NSSI是一种无自杀意图下反复自我伤害的行为^[5],也是一种被概念化的与抑郁障碍有关的有害行为^[6]。既往研究表明,脂代谢、NSSI与抑郁障碍患者血脂水平有关^[7-8],但也有研究并未发现该关联性^[9]。此外,血脂与抑郁障碍患者NSSI之间的关联机制尚不清楚^[10]。对脂代谢进行分析,有助于探索儿童青少年抑郁障碍与NSSI相关联的生物标志物^[11]。本研究通过回顾性病例对照研究设计,探讨脂代谢与儿童青少年抑郁障碍NSSI的相关性^[12],为儿童青少年抑郁障碍NSSI的早期筛查及针对性干预提供参考。

一、对象与方法

1. 研究对象: 回顾性选取2020年4月—2021年12月于阜阳市第三人民医院精神科住院的681例儿童青少年抑郁障碍患者为研究对象。纳入标准:(1)符合ICD-10中抑郁障碍的诊断标准^[13]; (2)年龄6~18岁,入组前3个月内未服用过影响血脂水平的药物。排除标准:(1)合并躯体疾病、内分泌疾病、神经系统疾病、感染、其他精神障碍;(2)近期服用降脂药。根据DSM-5中NSSI的诊断标准^[14],由2名精神科主治医师以上医师进行诊断,将患者分为不伴NSSI组($n=427$)和伴NSSI组($n=254$)。本研究已获得阜阳市第三人民医院伦理委员会审批(伦理审批号:科伦审[2020]2020-340-04号)。患者及其监护人均自愿参与本研究并签署知情同意书。

2. 研究方法:(1)收集一般资料。包括性别、年龄、发病年龄、文化程度、总病程及体重指数(body mass index, BMI)。(2)评估抑郁症状严重程度。采用HAMD-17评定患者的抑郁症状严重程度,其中无抑郁症状 ≤ 7 分,轻度抑郁8~16分,中度抑郁17~23分,重度抑郁 ≥ 24 分^[15]。(3)实验室检测血脂指标。所有受试者入院后在未服用抗精神病药物且空腹8h后,于早晨抽取静脉血5ml,于阜阳市第三人民医院检验科以4 000 r/min离心15 min,进行血脂4项检测,均采用东软威特曼生物科技(南京)有限公司的试剂,检验方法均为终点法,指标包括血浆总胆固醇(total cholesterol, TC)、甘油三酯(triglyceride, TG)、高密度脂蛋白胆固醇(high density lipoprotein cholesterol, HDL-C)、低密度脂蛋白胆固醇(low density lipoprotein cholesterol, LDL-C)。

3. 统计学方法: 采用SPSS 25.0统计学软件处理

数据。正态分布的计量资料用均数 \pm 标准差($\bar{x} \pm s$)表示,组间比较采用独立样本 t 检验。计数资料用频数、百分数(%)表示,组间比较采用 χ^2 检验。非正态分布的计量资料用中位数和四分位数[$M(P_{25}, P_{75})$]表示,组间比较采用Mann-Whitney U 检验。以是否伴有NSSI为因变量,以单因素分析有统计学意义的变量为自变量,采用二项Logistic回归分析NSSI行为的影响因素。双侧检验, $P < 0.05$ 为差异有统计学意义。

二、结果

1. 两组患者一般资料及血脂指标比较: 681例儿童青少年抑郁障碍患者年龄8~18(14.88 ± 1.80)岁;男性194例,年龄(15.32 ± 1.80)岁;女性487例,年龄(14.71 ± 1.77)岁。两组患者的性别、发病年龄、总病程、文化程度、BMI和HDL-C比较,差异有统计学意义($P < 0.05$),见表1。

2. 儿童青少年抑郁障碍患者NSSI行为的相关因素分析: 以是否伴有NSSI行为(不伴NSSI=0,伴NSSI=1)作为因变量,以性别(男=1、女=2)、发病年龄、总病程、文化程度(小学=1、初中=2、高中=3)、BMI和HDL-C作为自变量,以性别和文化程度作为分类协变量,进行二项Logistic回归分析。结果显示,女性、BMI高、HDL-C高是儿童青少年抑郁障碍患者发生NSSI行为的危险因素($OR > 1, P < 0.05$),发病年龄大是患者发生NSSI行为的保护因素($OR < 1, P < 0.01$)。见表2。

讨论 本研究结果显示,两组患者性别、发病年龄、总病程、文化程度、BMI和HDL-C比较,差异均有统计学意义。女性、BMI高、HDL-C高是儿童青少年抑郁障碍患者发生NSSI行为的危险因素,发病年龄大是患者发生NSSI行为的保护因素。

国外研究显示高HDL-C与自伤自杀行为呈正相关^[16-17]。我国一项研究显示两者呈反向J形关联,即无论HDL-C高与低,均与自伤自杀风险有关^[18]。既往研究显示,脂代谢与抑郁障碍及自伤自杀有关^[10, 19]。一项研究发现,低血脂水平介导了炎症反应系统的激活,导致抑郁障碍患者血液和脑脊液中促炎性细胞因子和类花生酸增加,引起过氧化,从而导致膜磷脂的分解代谢,影响神经传递功能^[20]。Du等^[21]的研究显示,脂代谢异常干扰了通过G蛋白偶联受体和离子通道介导的神经递质传导,是抑郁障碍及自伤自杀的重要标志物。本研究可能受到药物、睡眠、饮食习惯以及与成年人脂代谢不同等因素的影响,所以与部分研究结果不尽相同。脂代谢与NSSI

表1 两组儿童青少年抑郁障碍患者一般资料及血脂指标比较

项目	伴NSSI(n=254)	不伴NSSI(n=427)	χ^2/Z 值	P值
性别 [例(%)]				
男	45(17.7)	149(34.9)	21.956	<0.001
女	209(82.3)	278(65.1)		
发病年龄 [岁, $M(P_{25}, P_{75})$]	13.00(12.00, 14.00)	14.00(13.00, 15.00)	-5.894	<0.001
总病程 [月, $M(P_{25}, P_{75})$]	12.00(6.00, 24.00)	12.00(3.00, 24.00)	-3.200	0.001
抑郁程度 [例(%)]				
无抑郁	3(1.2)	10(2.3)	6.478	0.091
轻度抑郁	51(20.1)	95(22.2)		
中度抑郁	91(35.8)	178(41.7)		
重度抑郁	109(42.9)	144(33.7)		
文化程度 [例(%)]				
小学	32(12.6)	24(5.6)	18.776	<0.001
初中	159(62.6)	241(56.4)		
高中	63(24.8)	162(37.9)		
BMI [kg/m ² , $M(P_{25}, P_{75})$]	20.80(18.60, 24.00)	20.20(18.00, 22.90)	-2.198	0.028
TG [mmol/L, $M(P_{25}, P_{75})$]	0.89(0.67, 1.28)	0.84(0.64, 1.18)	-1.213	0.225
TC [mmol/L, $M(P_{25}, P_{75})$]	3.72(3.34, 4.40)	3.72(3.24, 4.22)	-1.585	0.113
HDL-C [mmol/L, $M(P_{25}, P_{75})$]	1.49(1.28, 1.70)	1.41(1.23, 1.61)	-3.253	0.001
LDL-C [mmol/L, $M(P_{25}, P_{75})$]	2.21(1.87, 2.61)	2.21(1.87, 2.53)	-0.774	0.439

注: BMI 体重指数; TG 甘油三酯; TC 血浆总胆固醇; HDL-C 高密度脂蛋白胆固醇; LDL-C 低密度脂蛋白胆固醇; NSSI 非自杀性自伤

表2 儿童青少年抑郁障碍患者NSSI行为相关因素的二项 Logistic 回归分析

变量	B值	SE	Wald χ^2 值	P值	OR值	95%CI
女性	0.747	0.201	13.866	<0.001	2.111	1.425 ~ 3.129
发病年龄	-0.174	0.061	8.228	0.004	0.840	0.746 ~ 0.946
总病程	0.001	0.007	0.047	0.828	1.001	0.988 ~ 1.015
BMI	0.047	0.020	5.373	0.020	1.048	1.007 ~ 1.091
HDL-C	0.787	0.269	8.542	0.003	2.197	1.296 ~ 3.724
文化程度(以小学为参照)			2.314	0.314		
初中	-0.306	0.315	0.940	0.332	0.737	0.397 ~ 1.367
高中	-0.560	0.380	2.164	0.141	0.571	0.271 ~ 1.204
抑郁程度(以无抑郁为参照)			6.256	0.100		
轻度抑郁	0.313	0.700	0.200	0.655	1.368	0.347 ~ 5.398
中度抑郁	0.244	0.689	0.126	0.723	1.277	0.331 ~ 4.932
重度抑郁	0.690	0.690	1.000	0.317	1.994	0.515 ~ 7.717
常量	-0.979	1.203	0.662	0.416	0.376	-

注: NSSI 非自杀性自伤; BMI 体重指数; HDL-C 高密度脂蛋白胆固醇; - 无数据

行为之间的关系一直是一个被广泛研究的课题,但目前儿童青少年抑郁障碍的病理生理学机制尚未明确,结果仍有争议,故需继续探索生物标志物以助于及早识别和诊疗NSSI^[22]。

本研究结果显示, NSSI行为与BMI呈正相关。儿童青少年时期,个人在自我感知体重方面较为敏感^[23],而肥胖所致的自我感知体重欠佳是引起该年龄段罹患抑郁障碍的一个重要因素^[24-25]。国外研究显示,相较于体重正常者, BMI分级中超重和肥胖者抑郁障碍的患病率及NSSI行为的风险更高^[26],

并且女性多于男性^[27]。体重歧视在儿童青少年中较为常见^[28],受到体重歧视的儿童青少年出现暴饮暴食的概率会增加^[29],而暴饮暴食不仅会继续增加体重和BMI指数,还与脂代谢密切相关^[30]。

本研究结果显示, NSSI行为与发病年龄呈负相关。相关研究表明,抑郁障碍的发病年龄越早,患者自伤自杀倾向越大^[31]。NSSI发生的年龄越小且持续时间越长时,其再次出现自伤自杀的概率会增加^[32]。家庭不和、生活学历压力大、收入低、不与同龄人交往等都可成为儿童青少年抑郁障碍发病

过早的因素^[33],因此及早进行针对性干预措施可以有效降低风险。在性别方面,既往研究显示,儿童青少年抑郁障碍患者NSSI存在性别差异,女性NSSI患病率更高^[34]。本研究结果显示,女性是儿童青少年抑郁障碍NSSI的危险因素。国内有研究发现,在家庭关系中,女孩无论有无童年虐待,较差的父女关系与较高的NSSI风险相关,而母女关系与NSSI则无显著相关性^[35]。随着步入青春期,抑郁障碍和NSSI的发病率明显上升^[36],女孩抑郁障碍和NSSI的发病率高于男孩^[37-38],心理困扰水平也高于男孩^[39],更容易受到NSSI的影响^[40],自杀风险更大^[41];且性别失衡会一直持续到成年后^[42]。Wiess等^[43]的研究显示,这可能与女性的绝望感更强、对负面情绪更为敏感、对冲动的控制力差以及遭受暴力等因素有关。

本研究存在一些局限性:(1)在评定NSSI行为时具有一定主观性,是通过查阅病例、询问患者及监护人获得,不排除患者和监护人故意隐瞒和遗忘的可能;(2)未能调查患者的遗传和心理因素以及患者是否存在导致NSSI危机的应激事件;(3)本研究只纳入了在我院住院的患者,区域较为单一,经济文化生活习惯,宗教信仰等与其他区域存在一定的差异,研究结果不能完全代表其他区域。

综上所述,健康饮食、合理控制体重及BMI,塑造良好的儿童青少年成长环境可能会降低患者自伤自杀风险。HDL-C与NSSI行为的发生相关,但是其关联的机制仍需动物模型以及大样本试验等进一步研究。

利益冲突 文章所有作者共同认可文章无相关利益冲突

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