

doi: 10.13241/j.cnki.pmb.2017.10.037

双歧三联活菌片与小儿止泻安颗粒对急性腹泻患儿血清 IL-7、心肌酶及同工酶水平的影响 *

朱莹¹ 王珊^{1Δ} 张丹丹¹ 王志鹏¹ 李林²

(1 西电集团医院 儿科 陕西 西安 710077; 2 西安交通大学第一附属医院 儿科 陕西 西安 710065)

摘要 目的:探讨双歧三联活菌片联合小儿止泻安颗粒对小儿急性腹泻患儿血清 IL-7、心肌酶及同工酶水平的影响。**方法:**收集我院就诊的 120 例小儿急性腹泻患者,随机分为实验组和对照组,每组 60 例。对照组患者给予双歧三联活菌片口服治疗;实验组在对照组基础上给予小儿止泻安颗粒口服治疗。观察并比较两组患者治疗前后血清天门冬氨酸氨基转移酶(AST)、丙氨酸氨基转移酶(ALT)、乳酸脱氢酶(LDH)、肌酸激酶(CK)、肌酸激酶同工酶(CK-MB)、白介素-7(IL-7)以及临床治疗有效率。**结果:**与治疗前相比,两组患者治疗后 AST、ALT、LDH、CK、CK-MB 水平均显著下降,IL-7 水平明显升高,差异具有统计学意义($P<0.05$);与对照组相比,实验组患者的血清 AST、ALT、LDH、CK、CK-MB 水平较低,IL-7 水平较高,差异具有统计学意义($P<0.05$);与对照组相比,实验组患者的临床治疗有效率较高,差异具有统计学意义($P<0.05$)。**结论:**双歧三联活菌片联合小儿止泻安颗粒能够降低小儿急性腹泻患者血清心肌酶、同工酶水平,升高 IL-7 水平,临床疗效较好。

关键词:双歧三联活菌片;小儿止泻安颗粒;小儿急性腹泻;IL-7;心肌酶;同工酶

中图分类号:R725.7 **文献标识码:**A **文章编号:**1673-6273(2017)10-1938-03

A Study on the Effect of Bifid Triple Viable Tablets Combined with Xiao'er Zhixie'an Granule on the Serum IL-7 and Myocardial Enzyme and Isoenzyme Levels of Children with Acute Diarrhea*

ZHU Ying¹, WANG Shan^{1Δ}, ZHANG Dan-dan¹, WANG Zhi-peng¹, LI Lin²

(1 Department of Pediatrics, Shaanxi Electric Group Hospital, Xi'an, Shaanxi, 710077, China;

2 Department of Pediatrics, the First Affiliated Hospital, Xi'an Jiao Tong University, Xi'an, Shaanxi, 710065, China)

ABSTRACT Objective: To investigate the effect of Bifid Triple Viable tablets combined with Xiao'er Zhixie'an Granule on the serum IL-7, myocardial enzyme and isoenzyme levels of children with acute diarrhea. **Methods:** 120 cases of children with acute diarrhea in our hospital were randomly divided into the experimental group and control group, with 60 cases in each group. The control group was treated with Bifid Triple Viable tablets, 3 tablets each time, 3 times /d; in the experimental group was given Xiao'er Zhixie'an Granule based on the control group, oral, 12 g/time, 2 times /d, continuous 7d treatment, during the treatment, close observation of patients, timely adjust the dosage. The serum aspartate aminotransferase (AST), alanine aminotransferase (ALT), lactate dehydrogenase (LDH), creatine kinase (CK), creatine kinase isoenzyme (CK-MB) and interleukin -7 (IL-7) and clinical treatment efficiency before and after treatment were observed and compared between the two groups. **Results:** Compared with before treatment, the AST, ALT, LDH, CK, CK-MB levels of both groups were decreased, IL-7 level was increased after treatment, ($P<0.05$); compared with the control group, the AST, ALT, LDH, CK, CK-MB levels of experimental group were lower, the IL-7 level and clinical effective rate were higher ($P<0.05$). **Conclusions:** Bifid Triple Viable tablets combined Xiao'er Zhixie'an granule could reduce the serum myocardial enzyme, isozyme and IL-7 levels of children with acute diarrhea with better clinical efficacy.

Key words: Bifid Triple Viable tablets; Xiao'er Zhixie'an granule; Acute diarrhea; IL-7; Myocardial enzyme; Isozyme

Chinese Library Classification(CLC): R725.7 **Document code:** A

Article ID: 1673-6273(2017)10-1938-03

前言

小儿急性腹泻是临床儿童多发病,细菌、病毒以及某些非感染因素均能造成此病,严重影响了小儿身体的发育^[1]。据统计,

5 岁以下儿童的急性腹泻的发病率约 52%,以 3 岁以下儿童常见,其免疫力较低,容易发生急性腹泻^[2]。临床以腹泻伴腹痛、发热、呕吐等为主要症状,病情严重的患儿可出现脱水、电解质、酸碱平衡紊乱,甚至危及生命^[3]。临床通常采用抗生素对

* 基金项目:陕西省自然科学基金项目(Y2002C35)

作者简介:朱莹(1972-),女,本科,主治医师,研究方向:儿科内科,电话:15319735618

Δ 通讯作者:王珊,女,本科,主治医师,研究方向:儿科内科呼吸系统、新生儿,电话:18092643193

(收稿日期:2016-09-27 接受日期:2016-10-21)

急性腹泻进行治疗,但大量的使用抗生素会造成肠道菌群的紊乱,影响患者的康复^[4]。双歧三联活菌片是一种微生态制剂,其中含有的肠道有益菌能在口服后到达肠道,补充人体肠道有益菌,抑制致病菌,减少毒素产生,促进肠道的消化作用,调节肠道菌群平衡,在临床上常用于广泛用于各种急性慢性腹泻等^[5]。止泻安颗粒为中药制剂,能够温中行气,健脾和胃,对于小儿腹泻具有较好的临床效果^[6]。本实验通过观察急性腹泻患儿血清 IL-7、心肌酶及同工酶水平的影响,探讨双歧三联活菌片联合小儿止泻安颗粒对小儿急性腹泻的治疗效果,现报道如下。

1 资料与方法

1.1 临床资料

收集 2015 年 6 月~2016 年 6 月于我院就诊的 120 例小儿急性腹泻患者,随机分为实验组和对照组,每组 60 例。实验组组内男 33 例,女 27 例,患者平均年龄(6.87± 0.82)岁;对照组内男 36 例,女 24 例,患者平均年龄(6.99± 0.72)岁。所有患者均符合《中国腹泻疾病诊断治疗方案》中关于小儿急性腹泻的诊断标准。两组患者一般资料相比有可比性(P>0.05)。

1.2 纳入标准

患者均符合小儿急性腹泻的诊断标准,可伴有发热、呕吐以及轻度脱水。所有入选对象年龄在 1~12 岁之间,性别不限;患者无严重的电解质紊乱,所有患者均无其他先天性疾病,所有患者均无心脑血管疾病;患者无肝肾功能不全;患者治疗前未使用过实验相关药物;排除合并有其他消化系统疾病的患者;排除患有其他先天性疾病的患者;排除有严重脱水,电解质紊乱的患者;排除有心血管疾病的患者。

1.3 方法

1.3.1 治疗方法 两组患者入院后均给予相应的治疗措施。对照组患者给予双歧三联活菌片(金双歧 国药准字 S19980004 内

蒙古双奇有限公司)口服,3 片 / 次,3 次 / d;实验组患者在对照组患者基础上给予小儿止泻安颗粒(国药准字 52943102Z 湖北省宏源药业科技股份有限公司)口服,12 g / 次,2 次 / d,治疗连续 7 d,治疗期间密切观察患者情况,及时调整药量。

1.3.2 心肌酶水平检测 治疗前后所有患者取外周静脉血 2 mL,采用全自动生化分析仪检测患者心肌酶水平。包括天门冬氨酸氨基转移酶(AST)、丙氨酸氨基转移酶(ALT)、乳酸脱氢酶(LDH)。

1.3.3 同工酶水平检测 治疗前后所有患者取外周静脉血 2 mL,采用全自动生化分析仪检测患者同工酶水平,包括肌酸激酶(CK)以及肌酸激酶同工酶(CK-MB)。

1.3.4 白介素 -7(IL-7)水平检测 治疗前后取患者外周静脉血 2 mL,采用 ELISA 法检测患者血清白介素 -7(IL-7)水平。

1.3.5 临床疗效评价 治疗后,对患者的临床疗效进行评价。患者治疗后患者粪便性状恢复正常,大便次数减少至正常水平,临床症状消失为显效;全身症状消失;患者治疗后粪便性状正常,大便次数减少,腹泻次数减少,临床症状改善为有效;患者治疗后粪便性状以及大便次数无明显改善甚至加重,临床状况无好转为无效。

1.4 统计学分析

采用 SPSS 19.0 统计软件进行分析,计量数据采用均数±标准差($\bar{x} \pm s$)表示,采用 t 检验;计数资料用%表示,采用卡方检验。以 P<0.05 认为差异有统计学意义。

2 结果

2.1 两组患者治疗前后心肌酶水平比较

治疗后,两组患者的 AST、ALT、LDH 水平与治疗前相比均下降(P<0.05),与对照组相比,实验组患者的 AST、ALT、LDH 水平较低(P<0.05),见表 1。

表 1 两组患者治疗前后 AST、ALT、LDH 水平比较(U/L, $\bar{x} \pm s$)

Table 1 Comparison of the serum AST, ALT, LDH levels between two groups before and after treatment(U/L, $\bar{x} \pm s$)

Groups		AST	ALT	LDH
Experimental group	Before treatment	57.92± 9.92	59.02± 9.46	357.27± 53.29
	After treatment	24.18± 8.14*#	23.84± 10.34*#	143.27± 49.98*#
Control group	Before treatment	58.58± 9.07	59.25± 9.31	359.13± 58.92
	After treatment	42.91± 10.32*	43.27± 9.73*	244.36± 62.1*

Note: Compared with Before treatment, *P<0.05; Compared with the control group, #P<0.05.

2.2 两组患者治疗前后同工酶水平比较

治疗后,与治疗前相比,两组患者的血清 CK、CK-MB 水平

均下降 (P<0.05), 与对照组相比, 实验组患者的血清 CK、CK-MB 水平较低(P<0.05),见表 2。

表 2 两组患者治疗前后 CK、CK-MB 水平比较(U/L, $\bar{x} \pm s$)

Table 2 Comparison of the serum CK, CK-MB level between two groups before and after treatment(U/L, $\bar{x} \pm s$)

		CK	CK-MB
Experimental group	Before treatment	503.72± 79.74	59.28± 12.01
	After treatment	155.72± 72.18*#	13.92± 5.92*#
Control group	Before treatment	512.38± 88.23	57.13± 8.28
	After treatment	218.83± 74.29*	25.11± 7.25*

Note: Compared with Before treatment, *P<0.05; Compared with the control group, #P<0.05.

2.3 两组患者治疗前后 IL-7 水平比较

治疗后, 两组患者的 IL-7 水平与治疗前相比均升高($P<0.05$), 见表 3。

05), 与对照组相比, 实验组患者的 IL-7 水平较高($P<0.05$), 见表 3。

表 3 患者治疗前后 IL-7 水平比较(pg/mL, $\bar{x} \pm s$)

Table 3 Comparison of the serum IL-7 level between two groups before and after treatment(pg/mL, $\bar{x} \pm s$)

	Before treatment	After treatment
Experimental group	19.93 $\pm$ 4.18	42.91 $\pm$ 9.18**
Control group	18.25 $\pm$ 5.06	30.43 $\pm$ 10.73*

Note: Compared with Before treatment, * $P<0.05$; Compared with the control group, ** $P<0.05$.

2.4 两组患者的临床疗效比较

治疗后, 实验组患者的治疗总有效率与对照组相比比较高

($P<0.05$), 见表 4。

表 4 两组患者临床疗效比较【例(%)】

Table 4 Comparison of the Clinical curative effect between two groups[n(%)]

	Excellence	Effective	Invalid	Total effective rate
Experimental group	37(61.67)	21(35.0)	2(3.33)	58(96.67)*
Control group	22(36.67)	28(46.67)	10(16.67)	50(83.33)

Note: Compared with the control group, * $P<0.05$.

3 讨论

据统计, 我国每年的腹泻患者约 8.36 亿次, 其中 5 岁以下儿童约占 3 亿人次, 肠道内外的细菌、病毒感染均会导致急性腹泻的发生^[7]。研究证实^[8]小儿急性腹泻的主要病因是肠黏膜表面受到各种原因造成的刺激造成其受损, 肠道功能发生紊乱, 进而产生腹泻。同时, 病变引起肠道消化酶的活性下降, 饮食不易被消化, 而在肠道中堆积, 最终导致肠道环境的紊乱。在祖国医学理论中, 小儿急性腹泻归为 " 婴儿泄泻 " 范畴, 主要为脾虚湿盛, 导致小肠失其受盛, 大肠失其传导, 导致泄泻的发生^[9]。因此, 在治疗上以运脾化湿为主。本实验所应用的小儿止泻安颗粒由肉豆蔻、赤石脂、伏龙肝、茯苓、陈皮、木香、砂仁组成^[10]。方中赤石脂具有收湿涩肠之功, 肉豆蔻具有温中行气涩肠, 伏龙肝温中止泻, 茯苓健脾渗湿; 砂仁行气化湿^[11]。诸药相合, 温中行气导滞, 脾胃正常功能得复。

肠道中的白介素 -7(IL-7) 主要由肠上皮细胞分泌, 有研究证实^[12-14]IL-7 能够促进 T 淋巴细胞的成熟, 在肠道免疫功能的发挥过程中的作用。IL-7 的这一作用是其特有而不能被其他因子所取代, IL-7 水平的下降会导致 T 细胞的增殖受到抑制, 进而导致 T 细胞数量的减少, 免疫功能下降, 当受到感染是就会发生腹泻。本实验结果显示: 治疗后, 两组患者的 IL-7 水平均升高, 与对照组相比, 实验组患者的 IL-7 水平较高, 提示本实验的治疗措施能够通过升高 IL-7 水平, 改善患者肠道的免疫功能。

小儿急性腹泻在临床主要表现为脱水、代谢紊乱、血液浓缩等, 导致患儿的机体、组织的细胞膜的通透性发生改变^[15], 损伤器官。研究证实^[16-18]其对心肌组织的影响较为显著, 腹泻患儿中有一半以上伴有不同程度的心肌损伤, 且多数患儿的心肌损伤为无症状, 在临床易被忽视, 造成较为严重的后果。有研究表明^[19]血清心肌酶及同工酶水平的检测也能够为小儿腹泻的诊

断提供证据。本实验结果显示治疗后, 两组患者的血清谷草、谷丙转氨酶、乳酸脱氢酶、肌酸激酶以及同工酶水平均下降, 其中对照组患者的以上指标水平较低。在对于心肌损伤的判断中, 肌酸激酶水平较为可靠, 肌酸激酶同工酶为心肌特异性酶, 研究表明^[20]其只存在于心肌中, 能够较为敏感的检测出患者心肌的损伤, 在心肌酶谱中相比其他指标更有价值。肌酸激酶同工酶的水平与心肌损伤程度成正比, 并且与水电解质紊乱、感染等关系密切。研究证实乳酸脱氢酶等心肌酶在急性心肌梗塞患者血清中明显升高。

综上所述, 双歧三联活菌片联合小儿止泻安颗粒能够降低小儿急性腹泻患者血清心肌酶、同工酶水平, 升高 IL-7 水平, 临床疗效较好。

参考文献(References)

- [1] Chandyo R K, Ulak M, Adhikari R K, et al. Prevalence of Iron Deficiency and Anemia among Young Children with Acute Diarrhea in Bhaktapur, Nepal [C]//Healthcare. Multidisciplinary Digital Publishing Institute, 2015, 3(3): 593-606
- [2] Kianifar H R, Farid R, Ahanchian H, et al. Probiotics in the treatment of acute diarrhea in young children [J]. Iranian Journal of Medical Sciences, 2015, 34(3): 204-207
- [3] Hegar B, Waspada I M I, Gunardi H, et al. A double blind randomized trial showing probiotics to be ineffective in acute diarrhea in Indonesian children[J]. The Indian Journal of Pediatrics, 2015, 82(5): 410-414
- [4] Ruggeri F M, Bonomo P, Ianaro G, et al. Rotavirus genotypes in sewage treatment plants and in children hospitalized with acute diarrhea in Italy in 2010 and 2011 [J]. Applied and environmental microbiology, 2015, 81(1): 241-249
- [5] Mumcuoglu I, Cetin F, Dogruman Al F, et al. Prevalence of microsporidia in healthy individuals and immunocompetent patients with acute and chronic diarrhea [J]. Infectious Diseases, 2016, 48(2): 133-137

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- and pancreatic cancer in Europe 1999-2007: Results of EURO-CARE-5[J]. *European Journal of Cancer*, 2015, 51(51): 2169-2178
- [10] Berentzen T L, Gamborg M, Holst C, et al. Body Mass Index in Childhood and Adult Risk of Primary Liver Cancer [J]. *Journal of Hepatology*, 2014, 60(2): 325-330
- [11] Chen Q W, Cheng C S, Chen H, et al. Effectiveness and complications of ultrasound guided fine needle aspiration for primary liver cancer in a Chinese population with serum α -fetoprotein levels ≤ 200 ng/ml-a study based on 4312 patients[J]. *Plos One*, 2014, 9(8): e101536-e101536
- [12] Mossad N A, Mahmoud E H, Osman E A, et al. Evaluation of squamous cell carcinoma antigen-immunoglobulin M complex (SCCA-IGM) and alpha-L-fucosidase (AFU) as novel diagnostic biomarkers for hepatocellular carcinoma [J]. *Tumor Biology*, 2014, 35(11): 11559-11564
- [13] Shen J. Diagnostic significance of combined detection of AFP, AFU, GGT, ALP and CA19-9 in hepatocellular carcinoma [J]. *International Journal of Laboratory Medicine*, 2012, 6(2): 124-125
- [14] Salomon L, Ploussard G, Coloby P, et al. Enquête observationnelle, transversale de l'Association française d'urologie (AFU) sur la pratique du traitement hormonal intermittent dans le cancer de la prostate en France[J]. *Regresar Al Nú mero*, 2014, 24(6): 367-373.
- [15] Rojas Y, Guillermin R P, Zhang W, et al. Relapse surveillance in AFP-positive hepatoblastoma: re-evaluating the role of imaging[J]. *Pediatric Radiology*, 2014, 44(10): 1275-1280
- [16] Rashed H E, Ahmed S A, Hegazy A A, et al. Combined Assessment of EZH2, GPC3 and SUOX could Improve Diagnosis of Regenerative Nodule, Liver Dysplasia and Small HCC in Cirrhotic Patients [J]. *International Journal of Advanced Research*, 2015, 3(1): 324-346
- [17] Luo C, Shibata K, Suzuki S, et al. GPC3 expression in mouse ovarian cancer induces GPC3 specific T cell-mediated immune response through M1 macrophages and suppresses tumor growth [J]. *Oncology Reports*, 2014, 32(3): 913-921
- [18] Wei H, Zhang J, Li H, et al. GP73, a new marker for diagnosing HBV-ACLF in population with chronic HBV infections [J]. *Diagnostic Microbiology & Infectious Disease*, 2014, 79(1): 19-24
- [19] Yang M, Guan Y, Yang Y, et al. Immunological detection of hepatocellular carcinoma biomarker GP73 based on dissolved magnetic nanoparticles[J]. *Colloids & Surfaces A Physicochemical & Engineering Aspects*, 2014, 443(4): 280-285
- [20] Liang R, Chen X Y, Ge L Y, et al. Meta-analysis supports the diagnostic value of GP73 in primary liver cancer [J]. *Gastroenté rologie Clinique Et Biologique*, 2015, 39(5): e71-e72
- [21] 白吉明, 李建华, 钱浩, 等. AFP AFU GPC3 联合检测在原发性肝癌诊断中的应用[J]. *河北医学*, 2012, 18(4): 496-498
- Bai Ji-ming, Li Jian-hua, Qian Yue, et al. Study on combined detection of AFU GPC3 and AFP in the diagnosis of primary liver cancer[J]. *Hebei Medicine*, 2012, 18(4): 496-498

(上接第 1940 页)

- [6] Iyoha O, Abiodun P O. Human rotavirus genotypes causing acute watery diarrhea among under-five children in Benin City, Nigeria[J]. *Nigerian journal of clinical practice*, 2015, 18(1): 48-51
- [7] Mejía A, Atehortúa S, Flórez I D, et al. Cost-Effectiveness Analysis of Zinc Supplementation for Treatment of Acute Diarrhea in Children Younger Than 5 Years in Colombia [J]. *Journal of pediatric gastroenterology and nutrition*, 2015, 60(4): 515-520
- [8] Wortel R C, Witte M G, van der Heide U A, et al. Dose-surface maps identifying local dose-effects for acute gastrointestinal toxicity after radiotherapy for prostate cancer [J]. *Radiotherapy and Oncology*, 2015, 117(3): 515-520
- [9] Adugna A, Kibret M, Abera B, et al. Antibigram of E. coli serotypes isolated from children aged under five with acute diarrhea in Bahir Dar town[J]. *African health sciences*, 2015, 15(2): 656-664
- [10] Zaka-ur-Rab Z, Ahmad S M, Naim M, et al. Effect of short term zinc supplementation on iron status of children with acute diarrhea[J]. *The Indian Journal of Pediatrics*, 2015, 82(5): 421-426
- [11] Chieochansin T, Vutithanachot V, Theamboonlers A, et al. Bufavirus in fecal specimens of patients with and without diarrhea in Thailand [J]. *Archives of virology*, 2015, 160(7): 1781-1784
- [12] Zou T, Mou J, Zhan X. Zinc supplementation in acute diarrhea[J]. *The Indian Journal of Pediatrics*, 2015, 82(5): 415-420
- [13] Lam P W, Bunce P E. A 65-year-old HIV-positive man with acute diarrhea [J]. *Canadian Medical Association Journal*, 2015, 187(15): 1153-1154
- [14] Esona M D, Buteau J, Lucien M A B, et al. Rotavirus Group A Genotypes Detected Through Diarrheal Disease Surveillance in Haiti, 2012 [J]. *The American journal of tropical medicine and hygiene*, 2015, 93(1): 54-56
- [15] Maher G, Pradhan G, Shetty S, et al. Rotavirus infection in children with acute gastroenteritis in Aurangabad, central Maharashtra [J]. *Indian pediatrics*, 2016, 53(7): 631-633
- [16] Ceha H M, Niehe V, Marinelli A W K S, et al. Acute toxicity after a diverting stoma and spacer prior to chemoradiation in locally advanced rectal cancer[J]. *Radiotherapy and Oncology*, 2015, 116(1): 107-111
- [17] Saito K, Vilemeyer O. Acute Traveler's Diarrhea: Initial Treatment [J]. *Current Treatment Options in Infectious Diseases*, 2015, 7(1): 63-76
- [18] Levine A C, Glavis-Bloom J, Modi P, et al. Empirically Derived Dehydration Scoring and Decision Tree Models for Children With Diarrhea: Assessment and Internal Validation in a Prospective Cohort Study in Dhaka, Bangladesh [J]. *Global Health: Science and Practice*, 2015, 3(3): 405-418
- [19] Emamghorashi F, Rajabi S H, Shadman A. Frequency of Rotavirus infection in children with acute gastroenteritis in Jahrom, South of Iran[J]. *Iranian Journal of Medical Sciences*, 2015, 33(2): 84-87
- [20] Patro-Golab B, Shamir R, Szajewska H. Yogurt for treating acute gastroenteritis in children: systematic review and meta-analysis[J]. *Clinical Nutrition*, 2015, 34(5): 818-824