

doi: 10.13241/j.cnki.pmb.2018.24.010

艾司美拉唑治疗胃溃疡患者成本效果的影响因素分析*

孙琪瑛¹ 王丹丹² 王 轶³ 李亚菊⁴ 毛奇琦⁵

(1 复旦大学附属华山医院北院财务资产管理部 上海 201907; 2 复旦大学附属华山医院北院财务科 上海 201907;

3 复旦大学附属华山医院北院药剂科 上海 201907; 4 复旦大学附属华山医院北院检验科 上海 201907;

5 复旦大学附属华山医院北院消化科 上海 201907)

摘要 目的:分析艾司美拉唑治疗胃溃疡患者成本效果的影响因素。**方法:**回顾性分析 2014 年 9 月-2018 年 1 月我院诊治的胃溃疡患者 220 例的临床病例资料,根据治疗药物的不同分为观察组 120 例与对照组 100 例,对照组给予奥美拉唑+克拉霉素+阿莫西林治疗,观察组给予艾司美拉唑+克拉霉素+阿莫西林,两组均持续治疗观察 2 周,对比两组治疗成本、治疗效果、不良反应的发生情况和成本效果,以及影响艾司美拉唑治疗胃溃疡患者成本效果的因素。**结果:**观察组与对照组患者完成治疗周期的成本费用分别为 567.14±48.23 元、551.49±45.61 元,两组比较差异无统计学意义($P>0.05$)。观察组与对照组的总有效率分别为 95.83%(115/120)和 82.00%(82/100),观察组显著高于对照组($P<0.05$)。观察组与对照组治疗期间的腹胀、便秘、恶心、口腔异味等不良反应发生率为 8.33%(10/120)和 11.00%(11/100),对比差异无统计学意义($P>0.05$)。观察组 C/E 与 Δ C/E 值均显著低于对照组($P<0.05$)。多因素 logistic 回归分析显示病程、溃疡直径、不良反应为影响艾司美拉唑治疗胃溃疡成本效果的主要因素($P<0.05$)。**结论:**艾司美拉唑治疗胃溃疡患者成本效果好,且不会增加不良反应的发生,病程、溃疡直径、不良反应为影响成本效果的主要因素。

关键词:艾司美拉唑;胃溃疡;成本效果;不良反应;影响因素

中图分类号:R573.1;R656.62 **文献标识码:**A **文章编号:**1673-6273(2018)24-4652-04

Analysis of the Influencing Factors of the Cost Effectiveness of Esomeprazole in the Treatment of Patients with Gastric Ulcer*

SUN Qi-ying¹, WANG Dan-dan², WANG Yi³, LI Ya-ju⁴, MAO Qi-qi⁵

(1 Department of Financial assets management, Huashan North Hospital Fudan University project, Shanghai, 201907, China;

2 Department of Finance, Huashan North Hospital Fudan University project, Shanghai, 201907, China; 3 Department of Pharmacy, Huashan

North Hospital Fudan University project, Shanghai, 201907, China; 4 Clinical Laboratory, Huashan North Hospital Fudan University

project, Shanghai, 201907, China; 5 Department of Digestive, Huashan North Hospital Fudan University project, Shanghai, 201907, China)

ABSTRACT Objective: To analyze the influencing factors of cost effectiveness of esomeprazole in the treatment of gastric ulcer patients. **Methods:** A Retrospective analysis of the clinical data of 220 cases of gastric ulcer patients who were diagnosed and treated in our hospital from September 2014 to January 2018 was performed. According to different treatment drugs, they were divided into the observation group (120 cases) and the control group (100 cases), the control group was treated with omeprazole + clarithromycin + amoxicillin, and the observation group was given esomeprazole + clarithromycin + amoxicillin, both groups were continuously treated for 2 weeks. The cost of treatment, effect of treatment, occurrence of adverse reactions and cost effects were compared between two groups, the factors affecting the cost effectiveness of esomeprazole in the treatment of gastric ulcer patients were analyzed. **Results:** The cost of completing the treatment cycle in the observation group and the control group were 567.14±48.23 yuan and 551.49±45.61 yuan respectively, and there was no significant difference between the two groups ($P>0.05$). The total effective rates of observation group and control group were 95.83% (115/120) and 82.00% (82/100) respectively, which was significantly higher in the observation group than that of the control group ($P<0.05$). The incidence of adverse reactions, such as constipation, abdominal distention, nausea and odoriness, were 8.33% (10/120) and 11.00% (11/100) in the observation group and the control group showed no significant difference ($P>0.05$). The values of C/E and Δ C/E in the observation group were significantly lower than those in the control group ($P<0.05$). Multivariate logistic regression analysis showed that the duration of disease, ulcer diameter and adverse reactions were the main factors influencing the cost effectiveness of Esomeprazole in the treatment of gastric ulcer ($P<0.05$). **Conclusion:** The cost effect of esomeprazole in the treatment of gastric ulcer is good, and it does not increase the occurrence of adverse reactions. The main factors that affect the cost effect are the course of the disease, the diameter of the ulcer and the adverse reaction.

Key words: Esomeprazole; Gastric ulcer; Cost effectiveness; Adverse reactions; Influencing factors

* 基金项目:上海市卫生计划生育委员会基金项目(20144y0111)

作者简介:孙琪瑛(1980-),女,本科,医师,电话:13651867762, E-mail:sunqiying1980@163.com

(收稿日期:2018-06-23 接受日期:2018-07-18)

Chinese Library Classification(CLC): R573.1; R656.62 Document code: A

Article ID: 1673-6273(2018)24-4652-04

前言

胃溃疡是临床常见疾病之一,男性发病率高于女性,具有易癌变和复发率高等特点,临床表现为周期性反酸、腹痛等。胃溃疡的反复发作导致治疗时间较长,给患者带来沉重的经济负担。胃溃疡致病因素主要包括胃酸侵袭、幽门螺杆菌(*Helicobacter pylori*, Hp)感染等,因此利用抑酸药物和抗 Hp 是治疗胃溃疡的主要措施^[4-6]。奥美拉唑是临床上常见的质子泵抑制剂,具有良好的抗 Hp 作用,但是药物作用慢,生物利用率低,治疗周期比较长,不良反应比较多,导致成本效果不佳^[7-9]。艾司美拉唑为奥美拉唑异构体,可显著提升抑酸作用,具有较高的血浆浓度及较低的体内清除率,可显著降低夜间酸突破发生率,提升抑酸作用,减少不良反应^[10,11],但是其成本效果还无相关报道。

药物经济学是运用生物统计学、临床医学、流行病学等学科的成果和方法,全面评估不同药物治疗的成本与效果比例,为合理用药提供依据^[1]。成本效果分析是药物经济学中常见的评价方法,以一定的临床效果为标准,比较不同药物的疗效,得到成本最低并能够实现预期治疗效果的治疗方案^[23]。本研究对在我院诊治的 220 例幽门螺杆菌感染的胃溃疡患者给予不同的药物治疗,分析比较其成本效果,希望为临床合理用药提供参考,结果报道如下。

1 资料与方法

1.1 研究对象

回顾性分析 2014 年 9 月-2018 年 1 月我院诊治的胃溃疡患者 220 例的临床病例资料,根据治疗药物的不同分为观察组(120 例)与对照组(100 例)。观察组男性 70 例,女性 50 例,年龄 34~56 岁,平均年龄(44.63±4.54)岁,溃疡直径 0.6~1.7 cm,平均溃疡直径(0.82±0.04)cm, BMI 20~24 kg/m²,平均 BMI(22.49±2.58)kg/m²,病程 8~15 个月,平均病程(12.49±5.33)个月。对照组男性 60 例,女性 40 例,年龄 33~57 岁,平均年龄(44.10±5.02),溃疡直径 0.5~1.6 cm,平均溃疡直径(0.78±0.03)cm, BMI 21~25 kg/m²,平均 BMI(22.91±3.19)kg/m²,病程 9~14 个月,平均病程(12.00±3.82)个月。两组一般资料比较差异均无统计学意义(P>0.05),具有可比性。

1.2 纳入与排除标准

纳入标准:(1)经胃镜检查证实为胃溃疡活动期,溃疡单发,胃黏膜活检快速尿素酶试验呈阳性;(2)临床资料与治疗资料完整;(3)入院前 5 d 内未服用抑酸剂、抗生素、激素等对胃溃疡治

疗有影响的药物;(4)患者签署了知情同意书;(5)无复合溃疡及溃疡并发症;(6)血常规、尿常规、肝肾功能检测正常;(7)医院伦理委员会批准了此次研究。

排除标准:(1)对本研究药物存在禁忌证者;(2)不配合治疗者;(3)对抗生素或本研究药物过敏者。

1.3 治疗方法

两组入院后给予克拉霉素(江西制药有限责任公司,国药准字 H20030183),口服,0.5 g/次,2 次/d;阿莫西林(上海美优制药有限公司, H20003781)口服,1 g/次,2 次/d。对照组给予奥美拉唑(国药集团工业有限公司生产, H20094120),口服,20 mg/次,2 次/d。观察组给予艾司美拉唑(阿斯利康制药有限公司生产, H20046379),口服,20 mg/次,2 次/d。两组均持续治疗 2 周。

1.4 观察指标

(1)依据胃镜下溃疡愈合情况判断疗效,显效:溃疡及周围炎症完全消失或溃疡消失,临床症状显著好转;有效:溃疡面积缩小≥50%,临床症状有所好转;无效:未达到以上标准或恶化。显效率+有效率=总有效率。(2)成本费用:患者在医院治疗期间所产生的药品和检查费用,不包含护理费和床位费。(3)成本效果分析:成本效果比(C/E)是将治疗效果与成本有机的结合在一起,增加的成本效果比(Δ C/E)表示一个方案的成本增加效果跟前一个方案对比得到的结果。(4)记录两组在治疗期间不良反应的发生情况。

1.5 统计学分析

应用软件 SPSS19.00 对本研究的计量数据与计数数据进行分析,分别以均数±标准差、%表示,采用 t 检验与卡方分析,影响因素分析采用多因素 logistic 回归分析,以 P<0.05 为差异具有统计学意义。

2 结果

2.1 治疗成本

观察组与对照组患者完成治疗周期的成本费用分别为 567.14±48.23 元、551.49±45.61 元,两组成本费用比较差异无统计学意义(P>0.05)。

2.2 两组治疗效果对比

显效:观察组 100 例(83.33%),对照组 40 例(40.00%);有效:观察组 15 例(12.50%),对照组 42 例(42.00%);无效:观察组 5 例(4.17%),对照组 18 例(18.00%)。观察组与对照组的总有效率分别为 95.83%(115/120)和 82.00%(82/100),观察组显著高于对照组(P<0.05)。见表 2。

表 1 两组治疗总有效率的对比

Table 1 Comparison of the total effective rate between the two groups

Group	Cases (n)	Obvious effect[n(%)]	Effective[n(%)]	No effect[n(%)]	Total effective rate(%)
Observation group	120	100(83.33)	15(12.50)	5(4.17)	95.83
Control group	100	40(40.00)	42(42.00)	18(18.00)	82.00
P					0.001

2.3 两组不良反应发生情况对比

腹胀:观察组 5 例(4.17%),对照组 4 例(4.00%);便秘:观察组 2 例(1.67%),对照组 3 例(0.03%);恶心:观察组 2 例(1.67%),对照组 3 例(0.03%);口腔异味:观察组 1 例(0.83%),对照组 0

例。观察组与对照组治疗期间的腹胀、便秘、恶心、口腔异味等不良反应发生率分别为 8.33%(10/120)和 11.00%(11/100),对比差异无统计学意义($P>0.05$)。见表 3。

表 2 两组治疗期间不良反应发生情况对比

Table 2 Comparison of the incidence of adverse reactions between two groups during treatment

Group	Cases (n)	Abdominal distention[n(%)]	Constipation[n(%)]	Nausea[n(%)]	Bad breath[n(%)]	Total(%)
Observation group	120	5(4.17)	2(1.67)	2(1.67)	1(0.83)	8.33
Control group	100	4(4.00)	4(4.00)	3(0.03)	0(0)	11.00
P						0.503

2.4 成本效果对比

观察组 C/E 与 Δ C/E 值均显著低于对照组($P<0.05$)。见表 4。

在观察组中,以 Δ C/E 值作为因变量,以临床资料、不良反应等数据作为自变量,多因素 logistic 回归分析显示病程、溃疡直径、不良反应为影响成本效果的主要因素($P<0.05$)。见表 5。

2.5 影响因素分析

表 3 两组成本效果对比(n)

Table 3 Two groups of cost effect comparison (n)

Group	Cases (n)	C/E	Δ C/E
Observation group	120	5.92 $\pm$ 0.56	5.33 $\pm$ 0.48
Control group	100	6.73 $\pm$ 0.63	6.05 $\pm$ 0.59
P		0.013	0.028

表 4 艾司美拉唑治疗胃溃疡患者成本效果的影响因素(n=120)

Table 4 Influencing factors of the cost-effectiveness of Esomeprazole in the treatment of gastric ulcer (n=120)

Factor	B	SE	Wald	OR(95%CI)	P
Course of disease	-1.862	0.524	12.556	10.593(4.986-14.591)	0.000
Diameter of ulceration	-1.811	0.683	6.982	6.194(2.533-8.145)	0.008
Adverse reaction	-1.498	0.561	6.093	3.255(2.093-4.781)	0.014

3 讨论

胃溃疡是临床引起腹痛或上消化道出血的常见疾病之一,胃溃疡中 Hp 的检出率在 90%以上,根除 Hp 成为治疗胃溃疡的重要措施^[12,13]。质子泵抑制剂在胃溃疡治疗占据主导地位,其能升高血清胃泌素水平,促进胃黏膜血流量增加,与 H^+-K^+-ATP 酶紧密结合,可抑制酶活性,促进胃黏膜电位升高,保护细胞膜稳定性,可有效治疗溃疡^[14-16],还可控制胃酸,加速溃疡愈合,促进根治 Hp。奥美拉唑是临床较常见的质子泵抑制剂,但其药动学存在个体差异和不稳定性,生物利用率低,导致治疗效果不佳^[17]。艾司美拉唑为奥美拉唑左旋异构体,代谢率低,血浆浓度高,具有更好的药动学及更高的药效,可持续发挥作用^[18]。本研究中,观察组与对照组的治疗总有效率分别为 95.83%和 82.00%,观察组显著高于对照组,而观察组与对照组治疗期间的腹胀、便秘、恶心、口腔异味等不良反应发生率为 8.33%和 11.00%,对比差异无统计学意义,表明艾司美拉唑的应用具有很好的安全性,可提高治疗效果。

药物经济学是指对同一疾病采取不同的治疗方法,分析疗效、成本以及药物间的关系,以做到合理用药^[19-21]。在临床上,部分医院习惯性使用高成本的治疗方案,导致治疗成本效果不

佳^[22-24]。成本效果分析是为了使达到相同疗效所耗费的成本最低,如果使用不同的治疗方案时,导致治疗成本增加了,就需要考虑每效果单位花费的成本^[25-27]。通过治疗药物的成本-效果比较可客观反应不同治疗方案的优劣势,既可降低医院药品成本,又可降低患者的治疗负担,达到满意的经济效益和社会效益。本研究中,观察组 C/E 与 Δ C/E 值均显著低于对照组,表明艾司美拉唑的应用具有更好的成本效果。

药物经济学在控制药品费用的迅速上涨、提高医院合理用药水平,提高医疗质量和医院管理水平具有重要的意义^[28]。成本效果分析是最早应用的药物经济学方法之一,适用性较广^[29]。艾司美拉唑虽可保护胃黏膜,调节局部 pH,但是盲目增加药物剂量,可能增加药物不良反应发生风险,也会增加治疗成本^[30]。本研究以 Δ C/E 值作为因变量,以临床资料、不良反应等数据作为自变量,多因素 logistic 回归分析显示病程、溃疡直径、不良反应为影响成本效果的主要因素。相关研究表明抑酸药能够增加铋剂的吸收,提高铋剂在血液中的浓度,提高治疗效果,但仍需密切观察患者神经系统及肾功能情况,谨防不良反应的发生^[31]。本研究有一定的不足,如研究对象较少,且胃溃疡的发病有地区差异,将在后续的研究中进行大样本研究分析。

总之,艾司美拉唑治疗胃溃疡患者的成本效果好,且不会

增加不良反应的发生,病程、溃疡直径、不良反应为影响成本效果的主要因素。

参考文献(References)

- [1] Hall S C, Agrawal D K. Vitamin D and Bronchial Asthma: An Overview of Data From the Past 5 Years [J]. *Clinical Therapeutics*, 2017, 39(5): 917-929
- [2] O'Connor A, O'Morain CA, Ford AC. Population screening and treatment of *Helicobacter pylori* infection[J]. *Nat Rev Gastroenterol Hepatol*, 2017, 14(4): 230-240
- [3] Pauwels A, Broers C, Vanuytsel T, et al. A reduced esophageal epithelial integrity in a subgroup of healthy individuals increases with proton pump inhibitor therapy[J]. *United European Gastroenterol J*, 2018, 6(4): 511-518
- [4] Hsin IF, Hsu SJ, Chuang CL, et al. The effects of proton pump inhibitor on hepatic vascular responsiveness and hemodynamics in cirrhotic rats[J]. *J Chin Med Assoc*, 2018, 81(7): 585-592
- [5] Shafik AN, Khattab MA, Osman AH. Magnesium sulfate versus esomeprazole impact on the neonates of preeclamptic rats[J]. *Eur J Obstet Gynecol Reprod Biol*, 2018, 6(225): 236-242
- [6] Yeomans ND, Graham DY, Husni ME, et al. Randomised clinical trial: gastrointestinal events in arthritis patients treated with celecoxib, ibuprofen or naproxen in the PRECISION trial[J]. *Aliment Pharmacol Ther*, 2018, 47(11): 1453-1463
- [7] Ishii Y, Yamada H, Sato T, et al. Effects of Vonoprazan Compared with Esomeprazole on the Healing of Artificial Postendoscopic Submucosal Dissection Ulcers: A Prospective, Multicenter, Two-Arm, Randomized Controlled Trial [J]. *Gastroenterol Res Pract*, 2018, 18 (2018): 1615092
- [8] Khatoon J, Prasad K N, Prakash R R, et al. Association of heterogenicity of *Helicobacter pylori* cag pathogenicity island with peptic ulcer diseases and gastric cancer[J]. *British Journal of Biomedical Science*, 2017, 74(3): 121-126
- [9] Mei Su, Chengyuan Li, Lin Zhou, et al. Anti-ulcerogenic effect of KFP-H008 against ethanol-induced gastric ulcer via p38 MAPK/NF- κ B pathway[J]. *Rsc Advances*, 2017, 7(78): 49423-49435
- [10] Rui-Qi, Yang, Li-Yun, et al. Effects of hydrotalcite combined with esomeprazole on gastric ulcer healing quality: A clinical observation study[J]. *World Journal of Gastroenterology*, 2017, 23(7): 1268-1277
- [11] Yang S Y, Jin H P, Nam K H, et al. 15-PGDH Inhibitors Promote Healing of Gastric Ulcer in Indomethacin Induced Mouse Model[J]. *Gastroenterology*, 2017, 152(5): S560-S561
- [12] JZ Wu, YH Liu, JL Liang, et al. Protective role of β -patchoulene from *Pogostemon cablin* against indomethacin-induced gastric ulcer in rats: Involvement of anti-inflammation and angiogenesis [J]. *Phytomedicine*, 2018, 39(2): 111-118
- [13] Zuo Y, Wang S, Cui X, et al. Therapeutic Endoscopy in Combination with Quadruple Therapy in Treating Bleeding Caused by Gastric Ulcer[J]. *Pakistan Journal of Medical Sciences*, 2018, 34(1): 10-14
- [14] İlyas Bozkurt, Dilek E, Erol H S, et al. Investigation on the effects of pomiferin from *Maclura pomifera*, on indomethacin-induced gastric ulcer: An experimental study in rats[J]. *Medicinal Chemistry Research*, 2017, 26(9): 1-9
- [15] Bush J, Van d B R, Franklin S H. Comparison of aloe vera and omeprazole for treatment of equine gastric ulcer syndrome[J]. *Equine Veterinary Journal*, 2017, 50(1): 34-40
- [16] Nguyen H V, Baek N, Lee B J. Enhanced gastric stability of esomeprazole by molecular interaction and modulation of microenvironmental pH with alkalizers in solid dispersion[J]. *International Journal of Pharmaceutics*, 2017, 523(1): 189-202
- [17] Bibi F, Alvi S A, Sawan S A, et al. Detection and Genotyping of *Helicobacter pylori* among Gastric ulcer and Cancer Patients from Saudi Arabia [J]. *Pakistan Journal of Medical Sciences*, 2017, 33 (2): 320-324
- [18] Mario F D, Miraglia C, Cavatorta O, et al. Mo1194 - Natural History of Gastric Ulcer in a 25 Years Follow-Up: Role of *Helicobacter Pylori* Infection and Nonsteroidal Anti-Inflammatory Drugs [J]. *Gastroenterology*, 2018, 154(6): S-702
- [19] Mario F D, Miraglia C, Cavatorta O, et al. Mo1194 - Natural History of Gastric Ulcer in a 25 Years Follow-Up: Role of *Helicobacter Pylori* Infection and Nonsteroidal Anti-Inflammatory Drugs [J]. *Gastroenterology*, 2018, 154(6): S-702
- [20] Yasuda H, Watanabe Y, Itoh F. Sa1622 - Role of Cox-2 Gene Promoter Methylation and *Helicobacter Pylori* Infection in Gastric Ulcer Healing[J]. *Gastroenterology*, 2018, 154(6): S-332
- [21] Zuo Y, Wang S, Cui X, et al. Therapeutic Endoscopy in Combination with Quadruple Therapy in Treating Bleeding Caused by Gastric Ulcer[J]. *Pakistan Journal of Medical Sciences*, 2018, 34(1): 10-14
- [22] Liang J, Dou Y, Wu X, et al. Protective effect of patchoulene epoxide against ethanol-induced gastric ulcer in rats: Influence on oxidative stress, inflammation and apoptosis [J]. *Chemico-Biological Interactions*, 2018, 283(1): 30-37
- [23] JZ Wu, YH Liu, JL Liang, et al. Protective role of β -patchoulene from *Pogostemon cablin* against indomethacin-induced gastric ulcer in rats: Involvement of anti-inflammation and angiogenesis [J]. *Phytomedicine*, 2018, 39(2): 111-118
- [24] Patrascu S, Ponz C B, Ananin S F, et al. A delayed acute complication of bariatric surgery: Gastric remnant haemorrhagic ulcer after Roux-en-Y gastric bypass [J]. *Journal of Minimal Access Surgery*, 2018, 14(1): 68-70
- [25] Reinau D, Schwenkglens M, Fröhlich M, et al. Glucocorticoids and the Risk of Peptic Ulcer Bleeding: Case-Control Analysis Based on Swiss Claims Data[J]. *Drug Safety*, 2018(10094): 1-6
- [26] Flore V, Ion P, Ciprian D, et al. Laparoscopic repair of perforated peptic ulcer: review[J]. *Minerva Chirurgica*, 2018, 73(2): 188-193
- [27] Cherkas A, Zarkovic K, Cipak Gasparovic A, et al. Amaranth oil reduces accumulation of 4-hydroxynonenal-histidine adducts in gastric mucosa and improves heart rate variability in duodenal peptic ulcer patients undergoing *Helicobacter pylori* eradication [J]. *Free Radical Research*, 2018, 52(2): 135-149
- [28] Lo G H, Reiberger T. Peptic ulcer bleeding in cirrhotic patients: Is as bad as variceal bleeding?[J]. *Hepatology*, 2017, 67(4): 1219-1220
- [29] Li Q, Liu J, Gong Y, et al. Association of CagA EPIYA-D or EPIYA-C phosphorylation sites with peptic ulcer and gastric cancer risks: A meta-analysis[J]. *Medicine*, 2017, 96(17): e6620
- [30] Wang K A, Wang J C, Lin C L, et al. Association between fibromyalgia syndrome and peptic ulcer disease development [J]. *Plos One*, 2017, 12(4): e0175370
- [31] Aziz H, Azim A, Kulvatunyou N, et al. Pendulum of Peptic Ulcer Disease: An Overview of National Practice [J]. *Journal of the American College of Surgeons*, 2017, 225(4): e96-e97