

doi: 10.13241/j.cnki.pmb.2021.02.025

金莲花液雾化吸入对慢性鼻窦炎功能性内窥镜术后患者鼻通气功能、生活质量和血清炎性因子的影响*

江 燕 齐银辉 胡慧娟 于 洁 王中霞

(甘肃省中医院耳鼻咽喉科 甘肃 兰州 730050)

摘要 目的:探讨金莲花液雾化吸入对慢性鼻窦炎(CRS)功能性内窥镜术后患者鼻通气功能、生活质量和血清炎性因子的影响。**方法:**选取2017年10月~2019年8月期间我院收治的CRS功能性内窥镜术后患者160例,采用随机数字表法将患者分为对照组(n=80)和研究组(n=80),对照组术后在常规治疗的基础上予以鼻腔生理盐水雾化吸入治疗,研究组在常规治疗的基础上予以金莲花液雾化吸入治疗,比较两组患者鼻通气功能[鼻腔最小截面积(NMCSA)、鼻腔容积(NV)]、生活质量和血清炎性因子[白介素-5(IL-5)、肿瘤坏死因子- α (TNF- α)、降钙素原(PCT)]及预后相关指标。**结果:**两组患者治疗10d后NMCSA、NV均升高,且研究组高于对照组($P<0.05$)。两组治疗10d后情感职能、躯体疼痛、社会功能、生理功能、精神健康、活力、生理职能、总体健康的维度评分均升高,且研究组高于对照组($P<0.05$)。两组治疗10d后血清IL-5、TNF- α 、PCT水平均较治疗前下降,且研究组低于对照组($P<0.05$)。研究组术腔清洁时间、上皮化时间均短于对照组($P<0.05$);研究组鼻黏膜纤毛传输速度高于对照组($P<0.05$)。**结论:**金莲花液雾化吸入治疗CRS功能性内窥镜术后患者,可有效改善其鼻通气功能及生活质量,抑制炎症反应,促进患者恢复。

关键词:金莲花液;雾化吸入;慢性鼻窦炎;功能性内窥镜术;鼻通气功能;生活质量;炎性因子

中图分类号:R765.4 **文献标识码:**A **文章编号:**1673-6273(2021)02-316-04

Effect of Atomization Inhalation of Jinlianhua Liquid on Nasal Ventilation Function, Quality of Life and Serum Inflammatory Factors in Patients with Chronic Rhinosinusitis after Functional Endoscopic Surgery*

JIANG Yan, QI Yin-hui, HU Hui-juan, YU Jie, WANG Zhong-xia

(Department of Otolaryngology, Gansu Provincial Hospital of Traditional Chinese Medicine, Lanzhou, Gansu, 730050, China)

ABSTRACT Objective: To investigate the effect of atomization inhalation of Jinlianhua liquid on nasal ventilation function, quality of life and serum inflammatory factors in patients with chronic rhinosinusitis (CRS) after functional endoscopic surgery. **Methods:** From October 2017 to August 2019, 160 patients with CRS functional endoscopy who were admitted to our hospital were selected, they were randomly divided into control group (n=80) and study group (n=80) by random number table method. The control group was treated with nasal normal saline atomization inhalation on the basis of conventional treatment, and the study group was treated with Jinlianhua liquid atomization inhalation on the basis of conventional treatment. The nasal ventilation function [minimum nasal area (NMCSA), nasal volume (NV)], quality of life, serum inflammatory factors [interleukin-5 (IL-5), tumor necrosis factor- α levels (TNF- α), procalcitonin (PCT)] and prognostic indicators were compared between the two groups. **Results:** The NMCSA and NV increased in the two groups at 10 days after treatment, and those in the study group were higher than those in the control group ($P<0.05$). The scores of emotional function, physical pain, social function, physiological function, mental health, vitality, physiological function and overall health of the patients in the two groups at 10 days after treatment were higher, and those in the study group were higher than those the control group ($P<0.05$). The serum levels of IL-5, TNF- α and PCT in the two groups at 10 days after treatment were lower than those before treatment, and those in the study group were lower than those the control group ($P<0.05$). The cleaning time of the operation cavity and epithelialization time in the study group were shorter than those in the control group ($P<0.05$). The nasal mucociliary transport speed in the study group was higher than that in the control group ($P<0.05$). **Conclusion:** The treatment of patients with CRS after functional endoscopy by atomization inhalation of Jinlianhua liquid, it can effectively improve the nasal ventilation function and quality of life, inhibit the inflammatory response, and it can promote the recovery of patients.

Key words: Jinlianhua liquid; Atomization inhalation; Chronic rhinosinusitis; Functional endoscopy; Nasal ventilation function; Quality of life; Inflammatory factors

Chinese Library Classification(CLC): R765.4 **Document code:** A

Article ID: 1673-6273(2021)02-316-04

* 基金项目:甘肃省科技支撑计划-社会发展类项目(144KFCA091)

作者简介:江燕(1974-),女,本科,副主任医师,研究方向:耳鼻喉科疾病的中西医结合治疗, E-mail: Jiangyan740628@163.com

(收稿日期:2020-03-28 接受日期:2020-04-22)

前言

慢性鼻窦炎(chronic rhinosinusitis, CRS)是临床耳鼻咽喉科常见的多发病,临床主要以鼻塞、脓性鼻涕等为主要症状^[1,2]。目前,临床针对 CRS 的治疗多以功能性内窥镜术为主,可有效保留鼻腔正常结构与鼻窦黏膜,改善鼻窦内通气引流,进而达到阻止病情进展的目的^[3,4]。近来不少临床实践证实^[5,6], CRS 在手术治疗过程中,易因各种因素导致患者出现窦口堵塞、鼻甲粘连等并发症,降低疗效。因此,临床上不少学者认为有关患者功能性内窥镜术后的后续治疗亦应引起重视。以往临床常给予西药进行术后常规对症治疗,但疗效一般。近年来,部分学者认为中药的应用对于 CRS 患者的术后恢复具有促进作用。中医认为 CRS 可归属于“慢鼻渊”范畴,认为该病的发生同湿热虚火、邪毒等相关^[7]。金莲花具有广泛的抗菌、抗病毒作用,其用于治疗呼吸道感染疾病可获得较好的治疗效果^[8]。鉴于此,本研究通过探讨金莲花液雾化吸入对 CRS 功能性内窥镜术后患者鼻通气功能、生活质量和血清炎性因子的影响,以期为 CRS 术后治疗提供参考。

1 资料与方法

1.1 基线资料

选取我院于 2017 年 10 月~2019 年 8 月间收治的 CRS 功能性内窥镜术后患者 160 例,本研究获得我院伦理学委员会批准。纳入标准:(1)CRS 诊断标准参考《中国慢性鼻窦炎诊断和治疗指南(2018)》^[9],中医学的诊断标准参考《中药新药临床研究指导原则(试行)》中相关标准^[10];(2)患者及其家属知情本研究且签署了同意书;(3)对本次研究用药无过敏反应者;(4)均行功能性内窥镜术者,手术操作由同一组医师进行。排除标准:(1)合并其他严重耳鼻喉疾病者;(2)合并凝血功能障碍疾病者;(3)合并心脑血管疾病者;(4)合并肝肾等脏器功能不全者;(5)合并恶性肿瘤者;(6)合并精神疾患无法正常交流者;(7)中途未能遵从医嘱用药者。采用随机数字表法将所有患者分为研究组(n=80)、对照组(n=80),对照组男 46 例,女 34 例,年龄 23~64 岁,平均(43.58±4.36)岁;病程 1~8 年,平均(4.25±0.93)年;CRS 分型情况:I 型 29 例,II 型 27 例,III 型 24 例;体质指数 20.9~24.7 kg/m²,平均(22.09±0.83)kg/m²。研究组男 48 例,女 32 例,年龄 24~65 岁,平均(44.09±5.36)岁;病程 2~10 年,平均(4.51±0.86)年;CRS 分型情况:I 型 26 例,II 型

28 例,III 型 26 例;体质指数 21.6~25.8 kg/m²,平均(22.52±0.87)kg/m²。两组一般资料对比无统计学差异($P>0.05$)。

1.2 方法

两组患者均给予功能性内窥镜术治疗,术后给予鼻内镜下鼻腔清理、口服克拉霉素分散片等常规治疗。随后对照组给予鼻腔生理盐水雾化吸入治疗,取生理盐水 40 mL,置入德国百瑞公司生产的 BoySx 型雾化器内完成雾化,30 min/次,2 次/d。研究组则给予鼻腔金莲花液雾化吸入治疗,金莲花液成分:辛夷、金莲花各 20 g,薄荷 6 g,上述药材加水煎汁取 40 mL。置入雾化器内完成雾化,30 min/次,2 次/d。两组患者均连续治疗 10 d。

1.3 观察指标

(1)于治疗前、治疗 10 d 后采用健康调查量表简表(36-item short form health survey, SF-36)^[11]评价患者生活质量,其中 SF-36 量表包括情感职能、躯体疼痛、社会功能、生理功能、精神健康、活力、生理职能、总体健康八个维度,每个维度均为 100 分,得分越高,表示生活质量越好。(2)抽取患者治疗前、治疗 10 d 后的空腹肘静脉血 2 mL,离心半径设置为 8 cm,经 4200 r/min 离心 10 min,分离上清液,置于低温冰箱中待测。参考美国爱德士生物科技公司生产的试剂盒的说明书进行常规操作,采用酶联免疫吸附法检测白介素-5(Interleukin-5, IL-5)、肿瘤坏死因子- α (Tumor necrosis factor- α , TNF- α)、降钙素原(Procalcitonin, PCT)水平。(3)于治疗前、治疗 10 d 后采用前鼻压测压器(美国 Master PF-10 型)检测所有患者鼻腔通气功能指标:鼻腔最小截面积(Minimum cross-sectional area of nasal cavity, NMCSA)、鼻腔容积(Nasal volume, NV)。(4)记录两组患者治疗 10 d 后的术腔清洁时间、上皮化时间、鼻黏膜纤毛传输速度等预后指标。

1.4 统计学方法

采用 SPSS20.0 统计学软件进行分析。计量资料采用($\bar{x}\pm s$)表示,行 t 检验。计数资料以百分比表示,行 χ^2 检验, $P<0.05$ 则表示差异具有统计学意义。

2 结果

2.1 鼻腔通气功能指标比较

两组治疗前 NMCSA、NV 比较无差异($P>0.05$);两组治疗 10 d 后 NMCSA、NV 均升高,且研究组高于对照组($P<0.05$);详见表 1。

表 1 鼻腔通气功能指标比较($\bar{x}\pm s$)

Table 1 Comparison of nasal ventilation function between the two groups($\bar{x}\pm s$)

Groups	NMCSA(cm ²)		NV(mL)	
	Before treatment	10 days after treatment	Before treatment	10 days after treatment
Control group (n=80)	1.87±0.24	2.17±0.47*	16.27±2.26	20.73±2.46*
Study group(n=80)	1.92±0.32	2.39±0.34*	16.81±3.25	25.14±2.35*
t	1.118	3.392	1.220	11.594
P	0.265	0.001	0.224	0.000

Note: compared with before treatment, * $P<0.05$.

2.2 两组患者生活质量比较

两组患者治疗前情感职能、躯体疼痛、社会功能、生理功能、精神健康、活力、生理职能、总体健康的维度评分比较无统

计学差异($P>0.05$);两组患者治疗 10 d 后情感职能、躯体疼痛、社会功能、生理功能、精神健康、活力、生理职能、总体健康的维度评分均升高,且研究组高于对照组($P<0.05$);详见表 2。

表 2 两组患者生活质量比较($\bar{x} \pm s$, 分)

Table 2 Comparison of quality of life between the two groups($\bar{x} \pm s$, score)

Groups	Time	Emotional function	Physical pain	Social function	Physiological function	Mental health	Vitality	Physiological function	Overall health
Control group (n=80)	Before treatment	55.58± 9.36	60.87± 11.24	56.39± 8.31	58.93± 9.17	59.23± 8.45	57.62± 9.22	64.57± 10.52	59.10± 9.92
	10 days after treatment	63.69± 10.48*	67.19± 9.18*	68.41± 8.36*	70.30± 11.85*	71.84± 9.03*	71.73± 9.84*	76.59± 8.49*	73.27± 10.26*
	Before treatment	54.28± 10.59	61.28± 8.57	55.64± 9.19	59.85± 8.26	58.12± 9.23	58.42± 10.25	65.89± 9.30	60.27± 11.24
Study group (n=80)	10 days after treatment	81.33± 8.62*#	84.72± 8.48*#	79.67± 9.28*#	84.12± 10.22*#	82.16± 9.37*#	82.93± 9.32*#	84.52± 11.28*#	81.05± 8.72*#

Note: compared with before treatment, * $P<0.05$; compared with the control group, # $P<0.05$.

2.3 炎症因子水平比较

两组治疗前血清 IL-5、TNF- α 、PCT 水平比较无差异($P>0$).

05); 两组治疗 10 d 后血清 IL-5、TNF- α 、PCT 水平均较治疗前下降,且研究组低于对照组($P<0.05$);详见表 3。

表 3 两组患者炎症因子水平比较($\bar{x} \pm s$)

Table 3 Comparison of inflammatory factors between the two groups($\bar{x} \pm s$)

Groups	IL-5(pg/mL)		TNF- α (ng/mL)		PCT(ng/mL)	
	Before treatment	10 days after treatment	Before treatment	10 days after treatment	Before treatment	10 days after treatment
Control group (n=80)	18.24± 2.52	14.39± 2.24*	1.86± 0.22	1.32± 0.17*	1.69± 0.46	1.17± 0.24*
Study group(n=80)	18.47± 3.75	9.61± 2.13*	1.81± 0.23	0.91± 0.11*	1.62± 0.37	0.79± 0.15*
t	0.455	13.831	1.415	18.111	1.061	12.009
P	0.650	0.000	0.612	0.000	0.291	0.000

Note: compared with before treatment, * $P<0.05$.

2.4 两组预后指标比较

研究组术腔清洁时间、上皮化时间均短于对照组($P<0.05$);

研究组鼻黏膜纤毛传输速度高于对照组($P<0.05$);详见表 4。

表 4 两组预后指标比较($\bar{x} \pm s$)

Table 4 Comparison of prognostic indicators between the two groups($\bar{x} \pm s$)

Groups	Cleaning time of the operation cavity(d)	Epithelialization time(d)	Nasal mucociliary transport speed (mm/min)
Control group (n=80)	26.04± 2.52	57.79± 4.74	6.35± 0.93
Study group(n=80)	20.47± 3.75	49.81± 3.63	8.86± 1.52
t	11.027	11.955	12.599
P	0.000	0.000	0.000

3 讨论

CRS 是耳鼻咽喉科的常见病及多发病,具有难治性、易复发的特点^[12]。手术是治疗 CRS 的有效方式,主要通过纠正鼻腔解剖学的异常、清除不可逆病变,为鼻腔和鼻窦黏膜形态与功能的恢复创造良好的局部环境^[13,14]。由于手术结束后就是上皮恢复和再生阶段的开始阶段,常需给予合理和有效的术后综合治疗以获取最佳的预后^[15]。以往常规的对症支持治疗虽可获

得一定疗效,但仍不十分理想。中医药在 CRS 的治疗过程中具有一定的疗效,但有关于其用于 CRS 功能性内窥镜术后的综合治疗的相关报道尚不十分多见。中医学对 CRS 的认识由来已久,《素问·气厥论》中提出"胆移热于脑,则辛颊鼻渊,鼻渊者,浊涕下不止也",认为本病的病机为湿热虚火、邪毒入体^[16],治疗应以祛风散寒、清热解毒、通利鼻窦为主。金莲花液的主要成分为辛夷、金莲花、薄荷,可发挥祛风散寒、清热解毒之效^[17]。

本次研究结果中,研究组治疗后的生活质量、鼻通气功能、

预后相关指标改善均优于对照组,可见 CRS 功能性内窥镜术后应用金莲花液雾化吸入,疗效显著。分析其原因,金莲花味苦性凉,归胃、肺经,可发挥宣肺通气、清热解毒之效;辛夷性温味辛、归肺、胃经,可发挥祛风通窍之效;薄荷辛凉,可发挥清热解毒、疏风散热之效;三药合用,可有效改善鼻部血液微循环、促进受损鼻黏膜修复再生、提高创口愈合修复能力,于患者预后改善有利,进一步提高患者生活质量^[18-20]。此外,金莲花液经雾化吸入至人体,可将药液由液态转变为雾态,进入人体的药液可直接作用于鼻部病灶,吸收效果更理想,利于患者早日恢复^[21-23]。目前临床有关 CRS 的发病机制尚不十分明确,但不少学者认为 CRS 的主要病理学改变以及病理生理学机制为局部的炎症反应,其炎症反应主要由嗜酸性粒细胞和中性粒细胞所主导^[24,25]。IL-5、TNF- α 、PCT 均是临床常见的炎症因子,其中 IL-5 是一种重要的细胞因子,可激活与趋化嗜酸性粒细胞,可促使嗜酸性粒细胞向鼻黏膜局部聚集而加重炎症反应^[26]; TNF- α 属于初级炎症因子,可增加血管通透性,同时还可刺激嗜酸性粒细胞的细胞毒功能,从而损伤鼻粘膜上皮^[27]; PCT 是一种早期的对细菌感染敏感的炎症指标,也是一种新的炎症指标,对各种炎症细胞进行活化^[28]。本研究中 CRS 功能性内窥镜术后患者给予金莲花液雾化吸入治疗,可有效抑制体内炎症反应。现代药理学研究结果显示^[29,30],金莲花主要成分为黄酮糖苷类化合物,具有较强的抗炎、抗病毒效果;辛夷中有效成分可降低毛细血管的通透性,抑制炎症性肿胀,减少炎症因子的分泌。由于条件所限,本研究仅采用了统一剂型,未能辨证加减治疗,今后将开展对 CRS 的中医分型及辨证加减治疗,以使中医药在 CRS 功能性内窥镜术后发挥更好的治疗效果。

综上所述,金莲花液雾化吸入治疗 CRS 功能性内窥镜术后患者,可有效改善其鼻通气功能及生活质量,抑制炎症反应,促进患者恢复。

参考文献(References)

- [1] Gao Y, Zheng M, Cui L, et al. IgG4-related disease: association between chronic rhino-sinusitis and systemic symptoms[J]. Eur Arch Otorhinolaryngol, 2018, 275(8): 2013-2019
- [2] Yao Y, Sun H. Reply to the letter "Nasal nitric oxide as biomarker in the evaluation and management of chronic rhino-sinusitis with nasal polyposis"[J]. Eur Arch Otorhinolaryngol, 2017, 274(10): 3819-3820
- [3] Maniscalco M. Nasal nitric oxide as biomarker in the evaluation and management of chronic rhino-sinusitis with nasal polyposis [J]. Eur Arch Otorhinolaryngol, 2017, 274(10): 3817-3818
- [4] 武颖异,包亚军,周雯娟,等. IL-17 和 VEGF 在慢性鼻-鼻窦炎患者鼻息肉组织中的表达及相关性研究 [J]. 现代生物医学进展, 2018, 18(10): 1901-1904
- [5] Herrmann IF, Gadebusch Bondio M, Domagk D, et al. New possibilities with retroflexed functional endoscopy [J]. HNO, 2018, 66(7): 527-533
- [6] Bakshi SS. Comment on: Effect of topical ofloxacin on bacterial biofilms in refractory post-sinus surgery rhino-sinusitis [J]. Eur Arch Otorhinolaryngol, 2016, 273(9): 2853-2854
- [7] 熊子云. 不同中医辨证分型慢性鼻-鼻窦炎患者鼻内窥镜术后中医药治疗效果分析[J]. 检验医学与临床, 2019, 16(12): 1732-1734
- [8] 顾章明,金玥. 金莲花颗粒联合头孢克肟颗粒治疗小儿急性呼吸道感染的效果观察[J]. 实用临床医药杂志, 2019, 23(12): 79-82
- [9] 中华耳鼻咽喉头颈外科杂志编辑委员会鼻科组, 中华医学会耳鼻咽喉头颈外科学分会鼻科学组. 中国慢性鼻窦炎诊断和治疗指南(2018)[J]. 中华耳鼻咽喉头颈外科杂志, 2019, 54(2): 81-100
- [10] 郑筱萸. 中药新药临床研究指导原则(试行)[M]. 北京: 中国医药科技出版社, 2002: 324
- [11] 王安琪,王士礼,蔡昌桦. 修正性鼻内镜鼻窦手术与初次鼻内镜鼻窦手术治疗慢性鼻-鼻窦炎疗效比较[J]. 上海交通大学学报(医学版), 2014, 34(3): 361-364
- [12] Cohen NA. The spectrum of chronic rhinosinusitis therapy: from irrigation to the off-target effects of biologics[J]. Int Forum Allergy Rhinol, 2020, 10(1): 5-6
- [13] Marino MJ, Garcia JO, Zarka MA, et al. Inflammatory cell predominance and patterns in chronic rhinosinusitis with and without nasal polyposis patients[J]. Laryngoscope Invest Otolaryngol, 2019, 4(6): 573-577
- [14] Xia CX, Kao YW, Qin L, et al. Cancer risk in chronic rhinosinusitis: a propensity score matched case-control cohort study[J]. Am J Transl Res, 2019, 11(11): 7146-7156
- [15] 王盈盈,江琳艳,杨徐静,等. 鼻内镜手术治疗慢性鼻-鼻窦炎的临床效果及相关影响因素分析 [J]. 中国医刊, 2019, 54(11): 1234-1237
- [16] 王翔,谭业农,谢柳,等. 不同药物辅助治疗对老年慢性鼻-鼻窦炎伴鼻息肉患者术后血清 β -防御素水平和远期主观量化指标的影响[J]. 中国老年学杂志, 2019, 39(16): 4019-4022
- [17] 江燕. 金莲花液雾化吸入对慢性鼻-鼻窦炎 FESS 术后患者鼻黏膜的影响[J]. 新中医, 2015, 47(11): 160-161
- [18] 江燕,王辉,左文涛,等. 雾化吸入金莲花液对慢性鼻-鼻窦炎患者术腔黏膜中炎症细胞及白细胞介素-5 的影响 [J]. 西部中医药, 2016, 29(2): 119-120
- [19] 江丽. 金莲花颗粒联合利巴韦林治疗小儿急性上呼吸道感染的临床疗效及其对血清炎症标记物的影响[J]. 中国基层医药, 2018, 25(15): 2004-2006
- [20] 苏立芬,蔡龙旭,汪金林. 金莲花颗粒治疗上呼吸道感染患者临床疗效研究[J]. 海峡药学, 2019, 31(7): 227-228
- [21] Manji J, Singh G, Okpaleke C, et al. Safety of long-term intranasal budesonide delivered via the mucosal atomization device for chronic rhinosinusitis[J]. Int Forum Allergy Rhinol, 2017, 7(5): 488-493
- [22] Thamboo A, Manji J, Szeitz A, et al. The safety and efficacy of short-term budesonide delivered via mucosal atomization device for chronic rhinosinusitis without nasal polyposis [J]. Int Forum Allergy Rhinol, 2014, 4(5): 397-402
- [23] Wojas O, Krzych-Falta E, Furmańczyk K, et al. The use of nasal over-the-counter agents in the evaluated Polish population. The underrated role of the pharmacist in patient education on medical treatment in patients with allergic rhinitis [J]. Postepy Dermatol Alergol, 2019, 36(5): 524-530
- [24] Shirkani A, Mansouri A, Farid Hosseini R, et al. The Role of Interleukin-4 and 13 Gene Polymorphisms in Allergic Rhinitis: A Case Control Study[J]. Rep Biochem Mol Biol, 2019, 8(2): 111-118
- [25] Okubo K, Kurono Y, Ichimura K, et al. Japanese guidelines for allergic rhinitis 2017[J]. Allergol Int, 2017, 66(2): 205-219

- to preoperative surgical patients: a systematic review and meta-analysis of randomised controlled trials[J]. *BMJ Open*, 2019, 9(5): 729-736
- [16] Gan TJ, Diemunsch P, Habib AS, et al. Consensus guidelines for the management of postoperative nausea and vomiting[J]. *Anesth Analg*, 2014, 118(1): 85-113
- [17] Alireza Bameshki, Mohammad Hasan Namaiee, Ali Jangjoo, et al. Effect of oral ginger on prevention of nausea and vomiting after laparoscopic cholecystectomy: a double-blind, randomized, placebo-controlled trial[J]. *Electronic Physician*, 2018, 10(2): 6354-6362
- [18] Rusch D, Eberhart LH, Wallenborn J, et al. Nausea and vomiting after surgery under general anesthesia: an evidence-based review concerning risk assessment, prevention, and treatment [J]. *Dtsch Arztebl Int*, 2010, 107(42): 733-741
- [19] Cangemi DJ, Kuo B. Practical Perspectives in the Treatment of Nausea and Vomiting[J]. *J Clinical Gastroenterology*, 2019, 53(3): 1-7
- [20] Kazuki Tanaka, Naoki Inui, Masato Karayama, et al. Olanzapine-containing antiemetic therapy for the prevention of carboplatin-induced nausea and vomiting [J]. *Cancer Chemotherapy and Pharmacology*, 2019, 84(Suppl 5): 386-341
- [21] Wang JJ, Wang PC, Liu YH, et al. Low-dose dexamethasone reduces nausea and vomiting after tympanomastoid surgery: a comparison of tropisetron with saline[J]. *Am J Otolaryngol*, 2002, 23(5): 267-271
- [22] Liu YH, Li MJ, Wang PC, et al. Use of dexamethasone on the prophylaxis of nausea and vomiting after tympanomastoid surgery[J]. *Laryngoscope*, 2001, 111(7): 1271-1274
- [23] Karlsson HK, Tuominen L, Tuulari JJ, et al. Obesity is associated with decreased mu-opioid but unaltered dopamine D2 receptor availability in the brain[J]. *J Neurosci*, 2015, 35(9): 3959-3965
- [24] Han Eol Park, Min Ki Kim, Won-Kyung Kang. Efficacy and Safety of Ramosetron Injection for Nausea and Vomiting in Colorectal-Cancer Patients Undergoing a Laparoscopic Colectomy: A Randomized, Double-Blind, Comparative Study [J]. *Annals of Coloproctology*, 2018, 34(1): 36-43
- [25] Joutsa J, Karlsson HK, Majuri J, et al. Binge eating disorder and morbid obesity are associated with lowered mu-opioid receptor availability in the brain[J]. *Psychiatry Res Neuroimaging*, 2018, 15(3): 276-282
- [26] Song JW, Shim JK, Song Y, et al. Effect of ketamine as an adjunct to intravenous patient-controlled analgesia, in patients at high risk of postoperative nausea and vomiting undergoing lumbar spinal surgery [J]. *Br J Anaesth*, 2013, 111(4): 630-635
- [27] Apfel CC, Bacher A, Biedler A, et al. A factorial trial of six interventions for the prevention of postoperative nausea and vomiting [J]. *Anaesthesist*, 2005, 54(3): 201-209
- [28] Jebaraj B, Ramachandran R, Rewari V, et al. Feasibility of dexmedetomidine as sole analgesic agent during robotic urological surgery: A pilot study[J]. *J Anaesthesiol Clin Pharmacol*, 2017, 33(2): 187-192
- [29] Gao YT, Deng XM, Yuan HB, et al. Patient-controlled Intravenous Analgesia With Combination of Dexmedetomidine and Sufentanil on Patients After Abdominal Operation: A Prospective, Randomized, Controlled, Blinded, Multicenter Clinical Study [J]. *Clinical J Pain*, 2018, 34(5): 155-161
- [30] Tariq Malik. Acute Delirium After Ketamine Infusion for Chronic Pain [M]// Challenging Cases and Complication Management in Pain Medicine, 2018

(上接第 319 页)

- [26] Kim DK, Choi SA, Eun KM, et al. Tumour necrosis factor alpha and interleukin-5 inhibit olfactory regeneration via apoptosis of olfactory sphere cells in mice models of allergic rhinitis [J]. *Clin Exp Allergy*, 2019, 49(8): 1139-1149
- [27] Lee HJ, Kim B, Im NR, et al. Decreased expression of E-cadherin and ZO-1 in the nasal mucosa of patients with allergic rhinitis: Altered regulation of E-cadherin by IL-4, IL-5, and TNF-alpha[J]. *Am J Rhinol Allergy*, 2016, 30(3): 173-178
- [28] Wojas O, Krzych-Fałta E, Furmańczyk K, et al. The use of nasal over-the-counter agents in the evaluated Polish population. The underrated role of the pharmacist in patient education on medical treatment in patients with allergic rhinitis [J]. *Postepy Dermatol Alergol*, 2019, 36(5): 524-530
- [29] 房涛, 张天, 赵晓蕊, 等. 过表达 TFF3 基因抵抗金莲花总黄酮对人甲状腺乳头癌 K1 细胞的凋亡作用 [J]. *河北医药*, 2019, 41(17): 2571-2575
- [30] 余静, 付青青. 金莲花颗粒联合利巴韦林治疗小儿手足口病的临床研究[J]. *现代药物与临床*, 2019, 34(4): 1050-1053