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· 临床研究 ·

加速康复外科对胰头癌行胰十二指肠切除术患者术后恢复及营养状况的影响

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摘要

背景与目的: 胰头癌是胰腺癌中最常见的一种类型, 胰十二指肠切除术 (PD) 是治疗胰头癌的主要术式, 但其并发症多、患者恢复情况较差仍是普通外科领域中的难题。加速康复外科 (ERAS) 是近年来发展起来的外科围手术期处理创新理念, 可降低术后并发症, 促进术后恢复, 但 ERAS 在 PD 术中仍未广泛的应用, 因此, 本研究探讨 ERAS 理念的应用对胰头癌行 PD 术患者术后恢复及营养状况的影响, 评价其应用价值。
方法: 选择 2015 年 5 月—2019 年 5 月期间行 PD 术的胰头癌患者 62 例, 采用随机数字表法随机分为 ERAS 组与对照组, 每组 31 例。ERAS 组患者围手术期采用 ERAS 指导的干预措施, 对照组患者采用常规围手术期管理方案。比较两组患者术中指标、术后恢复指标、术后并发症发生率及营养状况指标变化。
结果: 两组患者术前一般资料及营养状况指标转铁蛋白 (TRE)、前清蛋白 (PAB) 和白蛋白 (ALB) 等均无统计学差异 (均 $P>0.05$)。两组患者术中失血量、术中输液量和手术时间差异均无统计学意义 (均 $P>0.05$)。ERAS 组首次肛门排气时间、首次肛门排便时间和下床活动时间均明显早于对照组 (均 $P<0.05$)。两组胰痿、感染、吻合口痿、胃排空延迟的发生率未见无统计学差异 (均 $P>0.05$) , 但 ERAS 组术后总并发症发生率明显低于对照组 (6.45% vs. 32.26%, $P<0.05$)。两组术后 3 d 血清 TRE、PAB 和 ALB 水平均较术前明显降低, ERAS 组的降低程度明显小于对照组 (均 $P<0.05$)。
结论: 对胰头癌行 PD 术患者采用 ERAS 策略效果良好, 可加快术后恢复, 改善患者营养状况, 减少术后并发症, 推荐临床开展应用。

关键词

胰腺肿瘤; 胰十二指肠切除术; 加速康复外科
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Effects of enhanced recovery after surgery on postoperative recovery and nutritional status in patients undergoing pancreatoduodenectomy for pancreatic head cancer

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Abstract

Background and Aims: Pancreatic head cancer is the most common type of pancreatic cancer, and pancreaticoduodenectomy (PD) is the main surgical procedure for the treatment of pancreatic head cancer. However, the high incidence of complications and poor postoperative recovery are still the difficult problems in the field of general surgery. Enhanced recovery after surgery (ERAS) is an innovative concept in perioperative management of surgery developed in recent years, it has been proven to reduce postoperative complications and speed up postoperative recovery. However, the ERAS concept has not been widely implemented in PD. Thus, this study was designated to investigate the effects of using ERAS protocol on postoperative recovery and nutritional status in patients undergoing PD for pancreatic head cancer, and evaluate its application value.

Methods: A total of 62 patients with pancreatic head cancer scheduled to undergo PD from May 2015 to May 2019 were enrolled. Using a random number table, the patients were randomly divided into ERAS group and control group, with 31 cases in each group. Patients in ERAS group received intervention measures guided by ERAS concept during perioperative period, while those in control group were treated with conventional perioperative management. The intraoperative variables, postoperative recovery parameters, incidence rates of postoperative complications, and changes in nutritional status indexes were compared between the two groups of patients.

Results: There were no significant differences in preoperative general data and nutritional status indexes that included transferrin (TRE), prealbumin (PAB) and albumin (ALB) between the two groups of patients (all $P>0.05$). There were no significant differences in intraoperative blood loss, amount of the intraoperative infusion and operative time between the two groups of patients (all $P>0.05$). The time to first postoperative passage of flatus, first defecation and time to ambulation in ERAS group were significantly earlier than those in control group (all $P<0.05$). No significant differences were noted in the incidence rates of pancreatic fistula, infection, anastomotic fistula and delayed gastric emptying (all $P>0.05$), but the overall incidence of postoperative complications in ERAS group was significantly lower than that in control group (6.45% vs. 32.26%, $P<0.05$). The serum levels of TRE, PAB and ALB were significantly decreased on the postoperative day 3 in both groups, but the decreasing amplitudes of them in ERAS group were significantly lower than those in control group (all $P<0.05$).

Conclusion: ERAS strategy offers a good effect in patients with undergoing PD for pancreatic head cancer. It can accelerate postoperative recovery, improve the nutritional status of patients and reduce postoperative complications. So, it is recommended to be widely used in clinical practice.

Key words

Pancreatic Neoplasms; Pancreaticoduodenectomy; Enhanced Recovery After Surgery

CLC number: R735.9

胰腺癌主要是原发于胰腺的一种恶性肿瘤，近年来其发病率呈不断上升趋势，严重威胁人类健康^[1-3]。胰头癌是最常见的一种胰头癌类型，占胰腺恶性肿瘤的70%~80%，具有不易早期发现、发展迅速及恶性程度高等特点，导致其预后不良^[4-5]。目前，手术仍为治疗胰头癌主要治疗手段，其中胰十二指肠切除术（pancreaticoduodenectomy, PD）是最有效的治疗方法。尽管近年来PD术的围手术期病死率已经显著降低，但术后并发症发生率高、患者恢复情况较差、术后住院时间长仍是困扰外科医生的重要问题^[6-8]。加速康复外科（enhanced recovery after surgery, ERAS）理

念近年来在多种外科领域应用，可降低术后并发症，促进术后恢复^[9-10]。因此，本文研究探讨ERAS对胰头癌行PD术患者术后恢复及效果的影响，从而评价其临床应用价值。

1 资料与方法

1.1 一般资料

选择我院于2015年5月—2019年5月期间行PD术的胰头癌患者62例。纳入标准：(1)术前经增强CT或MRI检查证实为胰头占位，且术后病理证实为胰头癌；(2)术前评估肿瘤可根治性切除

术,且患者均行PD;(3)术前未接受过放疗、化疗等手术治疗;(4)获得知情同意,签署知情同意书。排除标准:(1)肿瘤存在远处转移;(2)合并其他恶性肿瘤者;(3)严重营养不良者;(4)合并心肺、肝肾功能严重异常者;(5)精神疾病者;(6)手术或麻醉禁忌者。采用随机数字表法随机分为ERAS组31例与对照组31例。ERAS组31例中,男22例,女9例;年龄38~71岁,平均年龄(54.38±6.57)岁;平均肿瘤直径(3.51±0.65)cm;合并基础疾病:高血压4例,糖尿病2例,冠心病

2例。对照组31例中,男21例,女10例;年龄41~70岁,平均年龄(55.61±5.89)岁;平均肿瘤直径(3.48±0.51)cm;合并基础疾病:高血压5例,糖尿病3例,冠心病1例。两组患者一般资料比较差异无统计学意义(均 $P>0.05$)。

1.2 方法

两组患者均行PD治疗,ERAS组患者围手术期采用ERAS为指导的系统有序地干预措施,对照组患者则采用传统的围手术期管理方案。两组患者具体围术期处理方法见表1。

表1 ERAS组与对照组围术期处理方法

Table 1 Perioperative management methods in ERAS group and control group

处理方法	ERAS组	对照组
术前		
健康宣教	详细介绍疾病相关知识、手术的必要性、各阶段治疗经过及术后可能出现并发症等	常规健康教育
术前肠道准备	不常规进行机械肠道准备	术前1d口服肠道清洁剂,以及术前12h清洁灌肠
术前禁食	术前6h禁食、2h禁水;术前2h可口服10%葡萄糖400~500 mL	术前12h禁食、8h禁水,手术当天保持空腹状态
术中		
腹腔引流	减少放置,提前拔除	常规放置
术中保温	保温处理	不进行
术后		
术后镇痛	自控式静脉镇痛泵(PCA)+口服非甾体抗炎药,减少阿片类止痛药	PCA,使用阿片类止痛药
放置导尿管时间	术后24h	术后2~3d
术后早期禁食	术后6~8h开始少量饮水,于术后2~3d改为流质或半流质禁食,于术后4~5d推荐软固体食物,少量多餐。禁食期间多患者营养状况进行评估,监测胃肠道不适症状	禁食期间静脉输液补充营养,胃肠道正常蠕动且拔除胃管后少量流质禁食,若无胃肠道不适可逐渐增加进食量
术后早期康复	术后第1天下床或床边活动	术后3~4d下床活动
抗生素使用	术前30min和术后当天各使用1次	使用3~5d

1.3 观察指标

观察两组术中指标变化,包括术中失血量、术中输液量和手术时间;观察两组术后恢复指标变化,包括首次肛门排气时间、排便时间和下床活动时间;观察两组术后并发症发生情况;观察两组术前1d和术后3d营养状况指标变化,包括转铁蛋白(TRE)、前清蛋白(PAB)和白蛋白(ALB)(于术前1d和术后3d分别抽取肘静脉血,以离心半径10cm,离心10min,分离血清,于-20℃下保存待测,采用免疫比浊法测定TRE、PAB和ALB含量)。

1.4 统计学处理

应用SPSS 19.0统计软件处理。正态分布的计量资料采用均数±标准差($\bar{x}±s$)表示,组间比较采用 t 检验;计数资料采用例数(百分比)[n (%)]

表示,组间比较采用 χ^2 检验。 $P<0.05$ 为差异有统计学意义。

2 结果

2.1 两组术中指标比较

ERAS组术中失血量为(273.14±45.62)mL,术中输液量(1612.32±238.98)mL,手术时间(297.49±37.51)min;对照组术中失血量为(291.53±68.18)mL,术中输液量(1639.87±374.25)mL,手术时间(307.84±32.14)min。两组术中失血量、术中输液量和手术时间比较差异均无统计学意义(均 $P>0.05$)(表2)。

表2 两组术中指标比较 ($n=31, \bar{x} \pm s$)Table 2 Comparison of intraoperative index between the two groups ($n=31, \bar{x} \pm s$)

组别	术中失血量 (mL)	术中输血量 (mL)	手术时间 (min)
ERAS组	273.14 ± 45.62	1 612.32 ± 238.98	297.49 ± 37.51
对照组	291.53 ± 68.18	1 639.87 ± 374.25	307.84 ± 32.14
<i>t</i>	1.248	0.345	1.167
<i>P</i>	>0.05	>0.05	>0.05

2.2 两组术后恢复指标比较

ERAS组首次肛门排气时间 (2.93 ± 0.53) d, 首次肛门排便时间 (4.21 ± 0.89) d, 下床活动时间 (2.63 ± 0.65) d; 对照组首次肛门排气时间 (5.13 ± 1.29) d, 首次肛门排便时间 (6.10 ± 1.32) d, 下床活动时间 (5.78 ± 1.26) d。ERAS组首次肛门排气时间、首次肛门排便时间和下床活动时间均明显优于对照组 (均 <0.05) (表3)。

2.3 两组术后并发症比较

ERAS组术后出现胰漏1例, 吻合口瘘1例; 对照组术后出现胰漏4例, 感染2例, 吻合口瘘2例, 胃排空延迟2例。两组并发症的发生率均无统计学差异 (均 $P>0.05$), 但术后总并发症的发生率ERAS组低于对照组 (6.45% vs. 32.26%, $P<0.05$) (表4)。

表3 两组术后恢复指标比较 ($n=31, \bar{x} \pm s$)Table 3 Comparison of postoperative recovery parameters between the two groups ($n=31, \bar{x} \pm s$)

组别	首次肛门排气时间 (d)	首次肛门排便 时间 (d)	下床活动时间 (d)
ERAS组	2.93 ± 0.53	4.21 ± 0.89	2.63 ± 0.65
对照组	5.13 ± 1.29	6.10 ± 1.32	5.78 ± 1.26
<i>t</i>	8.783	6.610	12.370
<i>P</i>	<0.05	<0.05	<0.05

表4 两组术后并发症比较 [$n=31, n(\%)$]Table 4 Comparison of postoperative complications between the two groups [$n=31, n(\%)$]

组别	胰漏	感染	吻合口瘘	胃排空延迟	总并发症
ERAS组	1 (3.23)	0 (0.00)	1 (3.23)	0 (0.00)	2 (6.45)
对照组	4 (12.90)	2 (6.45)	2 (6.45)	2 (6.45)	10 (32.26)
χ^2	0.870	0.451	0.000	0.517	6.613
<i>P</i>	>0.05	>0.05	>0.05	>0.05	<0.05

2.4 两组营养状况指标变化比较

两组术前1 d血清TRE、PAB和ALB水平比较差异无统计学意义 (均 $P>0.05$); 两组术后3 d

血清TRE、PAB和ALB水平均较术前1 d降低 (均 $P<0.05$), 但ERAS组术后3 d血清TRE、PAB和ALB水平降低程度小于对照组 (均 $P<0.05$) (表5)。

表5 两组术前与术后营养状况指标变化比较 ($n=31, \bar{x} \pm s$)Table 5 Comparison of nutritional status indexes between the two groups before and after operation ($n=31, \bar{x} \pm s$)

组别	TRE (g/L)		PAB (g/L)		ALB (g/L)	
	术前1 d	术后3 d	术前1 d	术后3 d	术前1 d	术后3 d
ERAS组	2.26 ± 0.37	1.92 ± 0.25 ¹⁾	0.25 ± 0.04	0.19 ± 0.05 ¹⁾	38.71 ± 1.89	36.21 ± 1.42 ¹⁾
对照组	2.30 ± 0.41	1.46 ± 0.28 ¹⁾	0.26 ± 0.07	0.12 ± 0.03 ¹⁾	38.54 ± 1.56	33.27 ± 1.20 ¹⁾
<i>t</i>	0.403	6.823	0.691	6.684	0.386	8.805
<i>P</i>	>0.05	<0.05	>0.05	<0.05	>0.05	<0.05

注: 1) 与术前1 d比较, $P<0.05$

Note: 1) $P<0.05$ vs. preoperative value

3 讨论

PD是普通外科创伤最大、最复杂的一种手术, 并发症和病死率较高, 不仅要求医师具有精湛的手术技术, 且对围术期患者病情观察及康复具有较高要求^[11-16]。ERAS理念主要是指在循证医学证据支持下围术期采用一系列优化手段, 能够

最大限度地降低患者生理功能的干扰, 同时还可减少患者心理及生理的创伤, 减少并发症, 从而加快恢复机体生理机能的目的^[17-21]。ERAS理念主要提倡更充分术前准备, 包括术前沟通、胃肠道准备、良好的营养支持等, 通过加强术前宣教和交流减轻负性情绪及应激损伤; 常规置管可缓解腹胀, 降低吻合口瘘发生^[22-23]。ERAS理念强调精

准操作,减少术中出血和创伤,注意术中保温,采取术中保温可降低术后应激反应,从而有利于减少机体的分解代谢,进一步促进患者康复^[24-25]。ERAS理念术后早期进食和下床活动,可促进肠蠕动恢复,增加抵抗力,促进切口愈合;同时还可减少术后输液量,避免由于输液过多导致肺顺应性降低、肺间质水肿,影响胃肠功能恢复;此外ERAS理念还可减轻手术创伤造成的免疫抑制且减少术后并发症发生^[26-27]。刘力婕等^[28]报道显示,快速康复外科应用于胰腺癌术后患者,可明显减轻术后炎症反应,改善免疫抑制,从而加速术后康复。本研究表明,ERAS组首次肛门排气时间、首次肛门排便时间和下床活动时间快于对照组,提示ERAS可促进胃肠功能恢复;ERAS组术后并发症低于对照组,提示ERAS可减少术后并发症发生。

营养不良会影响免疫系统内的各个环节,同时还可影响细胞免疫功能的表达,从而降低细胞因子、补体和免疫球蛋白的合成,导致机体对肿瘤的免疫抑制减弱,以及术后微残留病灶较早出现的转移复发,进一步影响远期预后^[29]。此外,营养不良会引起术后切口愈合缓慢,甚至发生吻合口瘘等并发症,故而改善机体术后营养状况对胃癌患者具有重要意义^[30]。血清生化指标中,可用来评价患者营养状况主要包括TRE、PAB和ALB等。目前,临床上尚无有关快速康复外科应用于胰腺癌术后患者方面研究。而本文研究表明,ERAS组术后3 d血清TRE、PAB和ALB水平高于对照组,提示ERAS可改善患者营养状况。

综上所述,ERAS对胰头癌行PD术患者应用效果良好,可加快术后恢复,改善患者营养状况,减少术后并发症。本文研究仍存在一些局限之处,纳入样本量小,且术后观察时间存在缺陷,还需在后续中进一步补充术后相关指标的动态变化,以及增加样本量,进一步深入研究,提供可靠的临床参考价值。

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