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加速康复外科在腹部手术的研究进展

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摘 要

加速康复外科(enhanced recovery after surgery, ERAS)是丹麦的Kehlet教授在上世纪九十年代提出，2001年由费伦等研究小组最开始使用ERAS一词，其概念在许多外科学科中不断发展，ERAS路径包括术前、术中、术后三个重要组成部分，ERAS以循证医学为基础，寻找促进患者术后快速恢复的护理路径，采用ERAS可降低并发症发生率，缩短住院时间，降低了总体护理成本。本综述通过总结关于采用ERAS路径的研究，通过对于现存的预防以及治疗手段进行总结，并对未来进行展望。

关键词

ERAS，加速康复外科，进展

Research Progress of Enhanced Recovery after Surgery in Abdominal Surgery

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Abstract

Enhanced recovery after surgery (ERAS) was proposed by Professor Kehlet in Denmark in the 1990s. The term "ERAS" was first used by Phelan and other research groups in 2001. The concept

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of ERAS has been continuously developed in many surgical disciplines. ERAS path includes three important components before, during and after surgery. Based on evidence-based medicine, ERAS seeks nursing paths that promote patients' rapid recovery after surgery. Adopting ERAS can reduce the incidence of complications, shorten the length of hospital stay and reduce the overall cost of nursing. This review summarizes studies on the adoption of ERAS pathway, summarizes existing prevention and treatment options, and looks into the future.

Keywords

ERAS, Enhanced Recovery after Surgery, Progress

1. 背景及应用现状

ERAS 是加速康复外科的缩写，即加速康复外科(enhanced recovery after surgery, ERAS)，是丹麦的 Kehlet 教授在上世纪九十年代提出，2001 年由费伦等研究小组最开始使用 ERAS 一词，并成立了 ERAS 研究小组[1]。Kehlet 理论认为，通过减少机体的代谢压力、液体过载和胰岛素抵抗来缩短住院时间[2]。ERAS 研究小组的 ERAS 协议不断优化和完善，主要是通过整合各种有益于快速康复的方式方法来组合成最佳的围手术期护理路径，以便于为患者的外科治疗的整个过程提供最佳的护理方案，包括：减少活动、胃肠减压和术后缓慢恢复正常饮食等[1] [3] [4]。一般来说，这些路径方案，都是由不同研究者在不同的研究中，分别验证过这种护理方法的有效性，ERAS 研究小组通过对这些不同的护理方式方法进行整合综述，转换成 ERAS 路径中的方案，包含 20 多种项目，涵盖手术前的护理方案、手术中的护理方案以及手术术后的护理方案[1] [5] [6]。2010 年开始在世界各地纷纷成立了 ERAS 协会，他们主要由立一个由区域或者国家专家中心组成的国际网络，以便于促进 ERAS 协议的使用[2] [6]。据文献检索发现越来越多的研究都在不断地补充 ERAS，并且证实了 ERAS 路径的收益，研究表明 ERAS 在结肠直肠、胃、胰腺等腹部外科手术以及非胃肠外科手术都是有益的[3] [6] [7]。ERAS 发展到现在其路径内容包含范围更广，涉及面更广，不同科室以及不同手术其应用效果均不同，甚至不同医疗环境应用效果也不同。

2. ERAS 在手术的应用

术前宣教是进行手术前很重要的心理干预措施，手术是具有创伤性的操作，对于大多数患者都会产生焦虑以及害怕心理，特别是术前术后发生很明显的破坏性的手术，一项关于膀胱根治术后患者心理状态的研究表明大多数患者在最初的住院期间没有进行术前的宣教，当他们从手术后恢复时，焦虑以及抑郁情况明显重，对身体形象和性功能、造口周围疼痛以及造口器械的困惑是普遍存在的，生活习惯的改变可能会让他们不知所措[8] [9] [10]。很多研究已经揭示了术前宣教对即将进行外科手术患者的好处，如减轻焦虑、增加医患之间的信任度，增加患者和家属对手术过程的满意度等，制定一个有效的、能够及时完成的正式的术前宣教方式这一点很重要[11]。

据统计结肠直肠手术术后手术部位感染的发生率为 9%~26% [12]。对于术前肠准备的使用，无论是单独机械肠准备，单独口服抗生素肠准备，仍然存在争议。一项随机对照试验中，术前肠道准备与吻合口漏、腹内脓肿和腹膜炎等并发症发生率显著升高相关[13]。尽管 ERAS 指南一般建议在选择性结直肠

手术中不进行常规的肠道准备，会产成并发症如脱水和长时间的肠梗阻，但术前肠道准备对于腹腔镜手术的患者的仍存在争议，如多项研究表明术前护理包括单独机械肠准备和口服抗生素，能降低微创手术部位感染和术后败血症的发生率，减少手术部位感染可节省成本，减少再入院率[12] [14] [15] [16]。

体温管理主要是预防术中低体温，术中低体温可引起手术部位感染和心血管事件等多种并发症。在麻醉过程中，温度是常规调节的，ERAS 方案提出主要是通过使用外部加热装置包括暖风机等。最近研究发现，口服氨基酸摄入和静脉注射氨基酸或果糖，也防止在全身和区域麻醉术中的术中低体温，饮食(营养)诱导的产热被认为有助于防止术中体温过低[17] [18] [19]。

手术完成后患者最先出现的并发症就是疼痛，也是患者焦虑，惧怕手术的原因之一。过去的研究者普遍认为，疼痛会在改善预后之后得到有效缓解。然而，在过去的 40 年里，大量围手术期镇痛研究的结果仍不能取得满意效果[20] [21]，ERAS 已经把疼痛和镇痛作为一个加速术后康复的管理因素，术后疼痛管理是快速康复的必要条件，将镇痛在具体操作的基础上整合到完全实施的 ERAS 计划中[21] [22]。ERAS 项目大幅减少围手术期阿片类药物的使用，通过规定患者的疼痛预期和规范术后阿片类药物处方，潜在地减少术后短期和长期使用阿片类药物的重大问题[23]。对于开腹患者推荐使用病人自控镇痛(PCA)，它是一种经医护人员根据病人疼痛程度和身体情况，预先设置镇痛药物的剂量，再交由病人“自我管理”的一种疼痛处理技术。国内一项研究通过对 90 例妇科腹腔镜手术患者，分别接受常规镇痛治疗(常规组)或基于 ERAS 的 PCEA 治疗(ERAS 组)，PCEA 治疗组的患者 PCEA 的护理满意度(97.78%)高于常规镇痛管理(82.22%) [24]。对于一些胃肠功能不全以及出现并发症的患者可采用不同方案联合镇痛，如连续中胸段 PCEA 联合非甾体抗炎药等，以确保有效镇痛以及胃肠道的快速恢复等。

术后并发症通常发生在腹部手术后，导致术后住院时间增加，并增加医院费用，其中最常见的则是肺部疾病，据统计腹部手术术后高达 30%的患者发生肺部并发症，一些因素容易增加肺部并发症的风险，如长时间卧床，术后疼痛和麻醉引起的膈肌功能障碍等[25]-[30]。一项纳入 25 项研究涉及 2068 例患者的荟萃分析探讨了术后呼吸干预是否能预防腹部手术术后并发症，结果表明腹部手术术后使用呼吸阻力通气(呼气阻力模式、辅助吸气呼吸模式)可预防肺部并发症[30]。

营养不良是指由于能量供应不足而导致的体重损失，营养不良很容易被忽视，它对于患者术前术后的恢复至关重要，营养不良的筛查和必要时的营养治疗是 ERAS 理念的重要组成部分，尽早口服食物摄入是快速康复的关键一步，围手术期营养治疗尽量通过口服营养补充剂(ONS)和肠内营养补充主要口服饮食[31] [32] [33]。一项对 56 项随机对照研究的荟萃分析发现，围手术期补充葡萄糖、增加蛋白质摄入量和免疫营养可以减少术后并发症、术后感染和非感染并发症，同时住院时间减少 1.58 天[34]。如果围手术期禁食超过 5 天以上不能进食，应及时进行营养治疗，对于存在代谢障碍的患者，至少进行 7~10 天的口服营养治疗[31] [33]。重大急诊手术后早期首选肠内营养，但对于胆管癌和梗阻性黄疸患者有研究表明建议首选场外营养，对接受盆腔清除手术的患者通过营养性肠内喂养(20 mL/h)患者术后肠梗阻发生率明显较低[33] [35] [36] [37]。

3. 总结

越来越多的证据表明，基于 ERAS 理念的现代围手术期护理路径是安全、可行的。ERAS 减少了并发症，缩短了住院时间，增加了医患的信任度、治疗满意度，进而节约了医疗资源。然而，ERAS 路径是发展中的，它需要与各个学科达到完美融合还需要不同研究者加入其中，寻找并验证其效果，并扩展到一系列不同的外科专业中，在国内应用比较成熟的科室是胃肠以及麻醉科，其内容扩展到术前到术后随访的很多细节，其路径可能在任何类型的手术中都有效，另外 ERAS 路径的应用，不单单是一个科室的努力，它需要很多科室的协同。

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