·指南与共识·

炎症性肠病营养治疗专家共识(第三版)

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【摘要】 炎症性肠病(IBD)营养不良的风险及发生率较普通人群显著升高,影响IBD的治疗效果及预后。临床营养在IBD的治疗中有重要地位,近年来国内外在IBD营养治疗的临床实践中均有较多研究,更新IBD营养治疗专家共识、为临床工作提供最新诊治指导成为必要。本共识是由中华医学会消化病学分会炎症性肠病学组、中华医学会肠外肠内营养学分会胃肠病与营养协作组、中华医学会消化病学分会营养支持与治疗协作组的专家结合国外共识,在《炎症性肠病营养支持治疗专家共识(第二版)》基础上进行修订,旨在反映最新理念和研究成果,为IBD的营养治疗提供规范化指导意见。为与国际权威临床营养学术组织的专业术语保持一致,尤其考虑到临床营养在IBD治疗中的独特作用,因此本共识特更名为"炎症性肠病营养治疗专家共识"。

【关键词】 炎症性肠病; 营养治疗; 共识; 全球领导人发起的营养不良评定(诊断)标准; 德尔菲法
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Expert consensus on nutrition therapy for inflammatory bowel disease(the third edition)

Inflammatory Bowel Disease Group, Chinese Society of Gastroenterology, Chinese Medical Association; Gastroenterology and Nutrition Cooperative Group, Chinese Society of Parenteral and Enteral Nutrition, Chinese Medical Association; Nutrition Support and Treatment Collaboration Group, Chinese Society of Gastroenterology, Chinese Medical Association
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【**Abstract**】 The risk and incidence of malnutrition among patients with inflammatory bowel disease (IBD) are significantly higher than the general population, which affects the therapeutic effect and prognosis of patients with IBD. Clinical nutrition plays an important role in the treatment of IBD, and with the fact that there have been many studies in the clinical practice of nutrition therapy in IBD both domestically and abroad in recent years, it is necessary to update the expert consensus on nutrition therapy for IBD and provide the latest guidance for clinical practice. This consensus is drafted and revised by experts from the Inflammatory Bowel Disease Group of Chinese Society of Gastroenterology, the Gastroenterology and Nutrition Cooperative Group of Chinese Society of Parenteral and Enteral Nutrition, and the Nutrition Support and Treatment Collaboration Group of Chinese Society of Gastroenterology. It combines both expert consensus abroad and "Chinese expert consensus on nutrition support therapy in inflammatory bowel disease (the second edition)", aiming to reflect the latest concepts and research progress, and provide standardized guidance for nutrition therapy of IBD. In order to be consistent with the professional terminology adopted by international authoritative nutrition academic organizations, especially considering the unique role of clinical nutrition in the treatment of IBD, this consensus is hereby renamed as "Expert consensus on nutrition therapy for inflammatory bowel disease".

【**Key words**】 Inflammatory bowel disease; Nutrition therapy; Consensus; Global leadership initiative on malnutrition; Delphi technique
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自《炎症性肠病营养支持治疗专家共识(2013·深圳)》和《炎症性肠病营养支持治疗专家共识(第二版)》发表以来,营养治疗在炎症性肠病(inflammatory bowel disease,IBD)中

的作用已得到广泛重视。近年来,关于IBD营养治疗的机制、适应证和实施方法等方面均有较多研究。为及时反映国内外最新认识和研究进展、规范诊疗,中华医学会消化病学分会炎症性肠病学组、中华医学会肠外肠内营养学分会胃肠病与营养协作组和中华医学会消化病学分会营养支持与治疗协作组的专家联合对第二版专家共识进行更新。为与国际权威临床营养学术组织的专业术语保持一致[1],尤其考虑到临床营养在IBD治疗中的独特作用,本共识特更名为"炎症性肠病营养治疗专家共识"。本共识在既往两版共识的基础上进行了精简,将推荐意见集中于营养不良诊断,营养治疗的实施及实施过程中的监测、调整及管理,饮食的作用推荐等内容,并将CD合并肠衰竭情况下的营养治疗实施作为单独部分进行阐述推荐。

一、方法

1.共识范围目标用户和适用人群:本共识由中华医学会消化病学分会炎症性肠病学组、中华医学会肠外肠内营养学分会胃肠病与营养协作组、中华医学会消化病学分会营养支持与治疗协作组发起制定,共识的目标用户是从事IBD诊疗工作的临床医师、营养师及护士,共识的适用人群为中国IBD患者。

2.共识工作组:共识工作组成员来自中华医学会消化病学分会炎症性肠病学组、中华医学会肠外肠内营养学分会胃肠病与营养协作组、中华医学会消化病学分会营养支持与治疗协作组,分为3个小组,分别为起草小组、投票专家组以及秘书组。

3.利益冲突声明与资金资助:共识专家组成员要求所有专家填写利益冲突表,声明利益冲突。所有专家均声明不存在利益冲突。

4.推荐意见的确定:本共识推荐意见由临床专家组结合IBD营养治疗的临床需求,通过共识会议法筛选和确定。

5.推荐意见的等级判定:本共识采用德尔菲法进行制定[2]。共识工作组专家在PubMed、Embase、Cochrane Library、中国知网等数据库进行文献检索、筛选、评价,确定共识需阐明的问题及推荐方案,再经讨论修改,进行投票并由第三方计票。投票等级分为:a完全赞成(必不可少);b部分赞成,但有一定保留;c赞成,但有较大保留;d不赞成,但有一定保留;e完全不赞成。根据证据级别高低及专家投票结果,本共识将推荐等级分为"强烈推荐"、"推荐"和"建议"3个等级。其中A级指标(强烈推荐),即a得票数为80%及以上;B级指标(推荐),即a和b得票数相加为80%及以上;C级指标(建议),即a、b和c得票数相加为80%及以上;未达C级指标则删去。最终由专家审阅定稿形成本共识意见。

二、IBD营养不良及诊断

营养不良是指由于营养物质摄入不足、过量或比例异常,营养供给与机体的营养需求不协调,从而对细胞、组织、器官的形态、组成、功能及临床结局造成不良影响的综合征,分为营养不足、营养过剩、营养不均衡三大类。IBD患者多数存在营养不良发生风险,我国IBD患者伴营养不良多表现为营养不足,因此本共识中营养不良特指营养不足。营养不足指由于营养物质摄入不足和(或)吸收障碍导致机体组成和细胞成分改变,影响机体的生理功能,导致临床不良结局[3]。

近年来,由全球领导人发起的营养不良评定(诊断)标准(global leadership initiative on malnutrition, GLIM)得到普遍认可,GLIM标准的诊断流程分为营养风险筛查和营养状况评定两个阶段。先对患者进行营养风险筛查,筛查阳性者根据表型标准[非自主性体质量下降、低体质量指数(body mass index, BMI)、肌肉量减少]和病因学标准(食物摄入或吸收不足、疾病负担或炎症)进一步评定营养状况。符合至少1项表型标准和至少1项病因学标准的患者可被诊断为营养不良。确诊营养不良者可根据表型指标对严重程度进一步分级[4]。

推荐意见1:IBD患者营养不良的发生比例高,营养不良会影响内外科治疗效果和疾病预后,增加病死率,降低生活质量,需要积极干预。(推荐等级:强烈推荐)

据文献报道,IBD患者营养不良的发生风险从6%到70%不等[5-10],高于普通人群。根据美国2018年IBD住院患者的流行病学数据,克罗恩病(Crohn's disease, CD)和溃疡性结肠炎(ulcerative colitis, UC)患者蛋白质-能量营养不良的患病率分别为14.6%和15.6%[11]。中国尚缺乏IBD营养不良的大规模流行病学数据,一项纳入1 013例患者的横断面调查提示CD和UC患者的营养不良发生率分别为57.0%和38.8%[12]。

IBD发生营养不良的风险水平与疾病亚型和活动度等因素相关。小肠是消化和吸收营养的主要部位,CD常累及小肠,而UC大多数情况下仅累及结直肠,因此CD患者发生营养不良的风险较UC更高[13]。CD患者即使在疾病缓解期仍存在营养不良发生风险,微量营养素缺乏也更常见[14-15]。CD活动期患者尤其是合并肠道狭窄或穿透病变的患者,更易因疾病本身或药物的影响出现营养素摄入减少、消化吸收不良、经肠道丢失增多,且常伴有高代谢状态,营养不良风险更高[16-17]。一项回顾性研究发现,蒙特利尔分型为L4(上消化道)型的CD患者营养不良发生率最高(75.7%),L2(结肠)型患者发生率最低(48.8%);疾病行为为B2(狭窄)、B3(穿透)型是CD患者发生营养不良的独立危险因素[18]。处于生长发育阶段的儿童和青少年往往营养需求更高,疾病状态下更易出现营养不良,需引起重视[19-20]。

营养不良影响IBD的治疗效果和预后。IBD患者合并营养不良易导致住院率增加、住院时间延长和生活质量降低[21-22]。儿童和青少年患者合并营养不良将导致生长发育迟滞[6,21,23-24]。营养不良状态可能降低药物的疗效[25-26],增加手术并发症发生率和病死率[27-28]。同时,营养不良还是IBD患者急诊手术和发生静脉血栓事件的独立危险因素[24,29-30]。及时纠正营养不良有利于改善IBD疾病状态,提高治疗效果。

推荐意见2:对IBD患者要常规进行营养风险筛查和营养状况评定,并在整个病程中定期评估。(推荐等级:强烈推荐)

营养风险(nutritional risk)是指现存或潜在的与营养相关的导致患者出现不良临床结局的风险,对具有营养风险的患者进行营养治疗能够改善临床结局[31]。建议IBD患者在初诊时常规进行营养风险筛查,有营养风险的患者应进一步进行营养状况评定,并给予营养治疗[13]。常用的营养风险筛查工具有营养风险筛查2002(nutritional risk screening 2002, NRS2002)、营养不良通用筛查工具(MUST)和营养不良筛查工具(MST)等,目前尚无专用于IBD患者的营养风险筛查工具[32-33]。NRS2002内容简单,应用广泛,可用于IBD患者的营养风险筛查(表1)[34-36]。

表1 营养风险筛查2002(NRS2022)[35]

评分	内容
营养状态受损评分(取最高分)	
1分(任一项)	近3个月体质量下降>5%,或近1周内进食量减少1/4~1/2
2分(任一项)	近2个月体质量下降>5%,或近1周内进食量减少1/2~3/4,或体质量指数18.5~20.5 kg/m^{2}及一般情况差
3分(任一项)	近1个月体质量下降>5%,或近1周内进食量减少>3/4,或体质量指数<18.5 kg/m^{2}及一般情况差
疾病严重程度评分(取最高分)	
1分(任一项)	一般恶性肿瘤、髋部骨折、长期血液透析、糖尿病、慢性疾病(如肝硬化、慢性阻塞性肺疾病)
2分(任一项)	血液系统恶性肿瘤、重症肺炎、腹部大型手术、脑卒中
3分(任一项)	重症颅脑损伤、骨髓移植、重症监护、急性生理与慢性健康评分>10分
年龄评分	
1分	年龄≥70岁

注:营养风险筛查评分=营养状态受损评分+疾病严重程度评分+年龄评分,总评分≥3分者则提示存在营养风险

IBD患者的营养状况评定指标包括客观与主观两个部分。客观评估包括静态和动态两类指标。静态指标指人体测量指标,包括身高、BMI、三头肌皮褶厚度、上臂肌围、机体组成、体脂量等;动态测定指标包括氮平衡和半衰期较短的内脏蛋白如前白蛋白、转铁蛋白、纤维连接蛋白、视黄醇结合蛋白等。主观评估推荐使用患者主观整体营养评估量表(scored patient-generated subjective global assessment, PG-SGA)[37-38]。PG-SGA由患者自我评分和医务人员评分两部分组成,根据体质量丢失情况、疾病状态、代谢应激情况和体格检查进行评估。

推荐使用GLIM标准(表2)进行营养不良的诊断。对于诊断有营养不良者,可依据表型标准进行严重程度分级[4]。符合以下任一标准者可诊断中度营养不良(moderate malnutrition):(1)近6个月内体质量丢失5%~10%或近6个月及以上体质量丢失10%~20%;(2)BMI<20 kg/m^2(<70岁)或BMI<22 kg/m^2(≥70岁);(3)肌肉质量轻-中度减少。符合以下任一标准者可诊断重度营养不良(severe malnutrition):(1)近6个月内体质量丢失>10%或近6个月及以上体质量丢失>20%;(2)BMI<18.5 kg/m^2(<70岁)或BMI<20 kg/m^2(≥70岁);(3)肌肉质量重度减少。

表2 全球领导人发起的营养不良评定(诊断)标准(GLIM)[4]

项目	具体内容
表型标准	
非自主性体质量下降	近6个月内体质量丢失5%~10%或近6个月及以上体质量丢失>10%
体质量指数(BMI)降低	亚洲人群:BMI<18.5 kg/m^2(<70岁)或BMI<20 kg/m^2(≥70岁);非亚洲人群:BMI<20 kg/m^2(<70岁)或BMI<22 kg/m^2(≥70岁)
肌肉质量减少	采用经过验证的身体成分测量技术进行测量和评估
病因学标准	
食物摄入或吸收不足	超过1周进食量≤能量需求量的50%或超过2周的影响消化或吸收功能的慢性胃肠道疾病
疾病负担或炎症	急性疾病/损伤或慢性疾病相关

注:符合至少1项表型标准和至少1项病因学标准者可诊断营养不良

营养风险和营养状况在IBD患者的不同病程阶段呈动态变化,疾病活动、合并感染、使用糖皮质激素、肠梗阻或肠瘘等均可能增加营养风险[39-41],需要在病程中定期复查、评估。营养不良的IBD患者更容易出现疾病活动或并发感染[24,42-44]。因此,建议对IBD患者常规进行营养风险筛查和营养状况评定,并在病程中定期复查、评估,根据监测结果调整营养治疗方案。此外,营养风险筛查在拟行择期手术的IBD患者中亦颇为重要,术前实施营养评估并予以相应营养治疗能有效减少术后并发症的发生,促进康复。

推荐意见3:IBD患者能量及蛋白质需求通常与健康人类似,但重症患者需要根据病情采取个体化计算能量需求的策略。(推荐等级:强烈推荐)

多数研究认为,成人IBD患者的静息能量消耗与健康人相似,或略高于健康人群[45-47]。因此,IBD患者进行营养治疗时所需能量推荐为30~35 kcal/(kg·d)(1 kcal=4.184 0 kJ)。但在疾病的不同阶段,这一需求可能会发生变化:重症IBD患者的总体能量消耗较缓解期IBD患者有所增加[48-50];急性炎症或高代谢状态也会增加IBD患者的能量代谢需求,但患者体力活动减少可能会部分抵消这一需求[51],而饮食摄入减

少会加重能量负平衡[52]。不同于成人患者,儿童IBD患者在缓解期的能量消耗低于健康对照,可能与其体力活动水平降低有关[53]。对于复杂病例,建议采用间接测热法测定患者静息能量消耗,再结合体力活动程度确定患者的总能量消耗,用于制定个体化的营养治疗方案[54]。

IBD患者尤其是活动期CD患者,常面临肌肉减少性肥胖的问题[55],这可能与蛋白质代谢加速、营养吸收障碍、治疗相关不良反应和不良饮食习惯相关[56-57]。推荐IBD患者通过人体测量或生物电阻抗分析监测去脂体质量变化,指导营养治疗[58-60]。IBD患者的日常蛋白质需求与健康人群可能有显著不同,尽管这一观点缺乏高质量证据,但考虑到患者常受食欲不振和饮食限制影响[61],推荐活动期患者蛋白质摄入量增加至1.2~1.5 g/(kg·d),并适当添加要素饮食或聚合物饮食等特定膳食,改善去脂体质量[62-65]。缓解期IBD患者推荐的蛋白质摄入量与普通人群相似[约1 g/(kg·d)],必要时根据病情制定个体化营养治疗方案。

推荐意见4:IBD患者需要筛查并监测维生素和微量元素,特别是B族和D族维生素、叶酸、铁等,必要时予以补充。(推荐等级:推荐)

人体所需营养物质包括宏量营养素和微量营养素,宏量营养素包括水、电解质、碳水化合物、蛋白质和脂肪,微量营养素包括维生素和微量元素。IBD患者即使处于疾病缓解阶段,仍可能存在维生素和微量元素缺乏[66-67]。IBD患者常出现维生素B_{12}、叶酸和铁缺乏并导致贫血,其主要原因包括回肠病变(病变累及长度超过30~60 cm)、末段回肠切除(切除肠段超过20 cm)、IBD治疗药物导致的肠道吸收减少、肠道溃疡引起的铁流失等[68-70]。约22%CD患者和25%行结肠切除的UC患者存在维生素B_{12}缺乏,80%IBD患者存在叶酸缺乏[71-72]。糖皮质激素的使用、日照时间、活动量、生活习惯、吸烟等因素均可影响IBD患者维生素D水平[73],并导致骨量减少和骨质疏松[74]。研究显示,结肠切除术后的UC患者近70%血清25-(OH)维生素D_3水平低于31 ng/ml(77.5 nmol/L)[75]。此外,IBD患者常因吸收障碍、腹泻、饮食受限等原因导致微量元素缺乏,约78%IBD患者在病程早期至少有1种微量元素缺乏[5,76],约10%CD患者会出现锌缺乏[77],而锌缺乏与不良预后相关[78-79]。

建议对IBD患者定期进行维生素和微量元素检测。对于合并维生素或微量元素缺乏者,应及时予以个体化治疗。建议活动期IBD患者每3个月进行1次贫血筛查和维生素D检测[80]。对存在回肠病变、回肠切除等营养不良高危因素的患者,应每3~6个月行维生素B_{12}、叶酸检测,并结合临床情况进行锌、硒等微量元素检测,必要时予预防性补充[81-82]。末段回肠切除(或合并回盲部切除)超过20 cm者,应每月预防性补充1 mg维生素B_{12};如果此类患者已存在维生素B_{12}缺乏,应每天或隔天肌注维生素B_{12} 1 mg,7 d后改为每周肌注1 mg,持续4~8周,而后每月注射1 mg或每天口服1~2 mg,并终生补充[82]。对于使用柳氮磺吡啶或甲氨蝶呤的IBD患者,建议预防性补充叶酸。使用甲氨蝶呤的患者从用药24~72 h开始,应每周1次、顿服叶酸5 mg,或每周连续5 d服用叶酸1 mg/d[83]。在孕期,由于叶酸缺乏可导致贫血和胎儿神经管缺陷,影响胎儿发育,因此,IBD孕妇应更加重视叶酸的监测与补充,推荐从可能怀孕或者孕前至少3个月开始,每天摄入0.4~0.8 mg,直至妊娠满3个月[84-86]。存在维生素D不足的患者,建议保证每天30 min日光照射并摄入富含维生素D的食物预防维生素D缺乏。对于特殊人群如婴儿、孕妇和老年人,应视情况予以400~800 U/d维生素D制剂补充。对于维生素D缺乏的患者,建议给予4 000~5 000 U/d维生素D制剂,连续服用2个月,使血液25-(OH)维生素D浓度达到40~60 ng/ml[87]。

出现缺铁性贫血的IBD患者均应予以补铁治疗[88]。应根据贫血的严重程度、疾病活动状态及患者的耐受性等因素个性化制定治疗方案。轻度贫血、疾病缓解期、既往无口服铁剂不耐受的患者,首选富含铁的食物如动物血或者肝脏,或者口服铁剂;中度贫血、疾病活动期、既往对口服铁剂不耐受或正在使用促红细胞生成素的患者,首选静脉补铁[89]。对于慢性病贫血患者,可考虑在补铁治疗的基础上联合使用促红细胞生成素。出现重度贫血时,可以考虑输注红细胞,并采用静脉补铁[89]。铁剂治疗期间应注意监测外周血网织红细胞、血红蛋白、血浆铁、铁蛋白、转铁蛋白饱和度等指标,并需要避免出现铁过载。过量铁(尤其是硫酸亚铁)可能造成肠上皮氧化应激损伤,从而加重肠道炎症[90]。

三、IBD患者营养治疗的实施

IBD营养治疗的主要目的包括纠正营养不良,与药物治疗协同诱导疾病缓解,术前预康复及促进术后康复等。营养治疗的方案需结合患者的治疗目的、疾病活动程度、肠道功能等多因素综合考虑。营养治疗需要由营养支持小组实施。

推荐意见5:IBD患者营养治疗的目的包括纠正营养不良,补充营养摄入不足,单独或者与药物治疗协同诱导CD缓解,术前预康复及促进术后康复。(推荐等级:强烈推荐)

IBD患者营养不良发生率高,营养不良与诸多不良预后相关[27-28],及时纠正营养不良有利于改善IBD疾病状态,提高治疗效果。因此,IBD患者营养治疗的重要目的是纠正营养不良状态、补充营养摄入不足及改善预后。

全肠内营养(exclusive enteral nutrition, EEN)即患者所需营养要素全由肠内营养(enteral nutrition, EN)提供,无其他营养源;EEN可有效诱导CD疾病缓解,特别是儿童CD患者[91-94]。EEN治疗达到黏膜愈合至少需要8周[95],8周的完全黏膜愈合率为33%,接近完全黏膜愈合率达19%[96-97],12周的黏膜愈合率可达到47%[98]。黏膜愈合是EEN治疗后CD长期维持缓解的重要原因,通过EEN达到完全黏膜愈合的患者3年复发率显著低于没有达到完全黏膜愈合者[96]。

对于已经启动生物制剂治疗的CD患者,EN有助于提高生物制剂疗效。一项前瞻性研究发现,营养不良状态可能影响CD患者对英夫利西单克隆抗体(infliximab, IFX)的治疗应答[26],而IFX联合EN(包括氨基酸型EN和标准聚合物型EN)可能有助于CD患者获得持续的药物应答[99];对接受生

物制剂治疗的CD患者,优化药物治疗方案(如剂量升级或联合治疗)后仍失应答者,营养治疗有潜力成功诱导疾病缓解[100];对难治性CD患者,当存在药物失应答时,营养治疗联合药物升级有益于临床缓解及黏膜愈合[101]。

在UC患者中,营养治疗对于疾病诱导或维持缓解的疗效有限,仅用于纠正UC营养不良或降低营养风险[48]。

在外科领域,EN在预康复及术后康复中也起关键作用。营养不良是手术并发症的独立危险因素[102],术前进行充分的营养风险筛查以及积极营养治疗,改善患者营养不良状态,同时通过EN促进肠道炎症的缓解,可改善手术预后,减少术后并发症[103-104]。在术后康复中,早期启动EN可促进肠道功能恢复,维护肠黏膜屏障功能,降低感染发生率并缩短术后住院时间。

推荐意见6:对处于活动期的儿童、青少年和部分成人CD患者,推荐EEN作为诱导缓解的一线治疗方案。(推荐等级:强烈推荐)

多项研究表明,EEN对CD诱导和维持缓解有一定作用。对儿童、青少年CD患者,营养治疗可在短期内有效诱导疾病缓解,且在减少预后不良事件(生长发育迟缓、激素依赖以及对IFX失应答等)方面均优于糖皮质激素[105-106]。但如果这类患者合并肛周瘘管或CD并发症风险较高(病变范围广泛、生长发育迟缓、内镜下结肠深凿样溃疡、严重骨质疏松、诊断时有肠狭窄或穿透性疾病),目前的指南建议将抗肿瘤坏死因子抗体作为一线治疗[107]。最近一项针对新发中度至重度儿童CD的随机对照试验中,一线使用IFX在诱导缓解和维持治疗效果方面均优于EEN或糖皮质激素[108]。

EEN在成人轻度活动性CD患者中能有效诱导缓解,但效果相比免疫调节剂或生物制剂较差[109-111],不推荐作为一线治疗,只在某些特定情况下(不耐受、不适合或拒绝药物治疗的患者)可使用EEN。

EEN诱导CD缓解的机制不明,可能与EN组成(如碳水化合物、脂肪酸、维生素和微量元素)合理、抗原负荷少、有助于短链脂肪酸产生以及调整肠道微生态平衡(如拟杆菌/普雷沃菌比例)、改善菌群结构、保护肠黏膜屏障等机制有关[112-119]。同时,EEN能够减轻内脏脂肪堆积,改变系膜脂肪结构,或许与诱导CD缓解作用机制有关[120-121]。

推荐意见7:EN有助于维持CD缓解,但不建议作为维持缓解的主要手段。(推荐等级:强烈推荐)

对于疾病处于缓解期的患者,适当补充EN或有助于维持CD缓解[122-123]。有少量纳入小样本的研究发现EN对CD术后预防复发有一定效果[124],但管饲依从性不佳会影响EEN的治疗效果[125]。用于维持CD缓解的EN使用量、疗程及联合用药方案等缺乏一致性意见。在EN用于维持CD缓解的研究报告中,以部分肠内营养(partial enteral nutrition, PEN)居多。PEN方案要求患者每天需求总能量的50%以上由EN提供[126-129]。系统性回顾结果显示,与普通饮食相比,PEN可以有效减少CD复发,其作用优于某些药物(如糖皮质激素和5-氨基水杨酸制剂)[130]。Nguyen等[129]发表的一项荟萃分析显示,IFX和EN联合治疗比IFX单药更有效地诱导和维持CD临床缓解。

2019年加拿大儿科指南建议,对于缓解期的肠道CD,如果使用PEN,应与其他药物联合使用以维持临床缓解[131]。由于目前尚无研究评估PEN作为主要治疗方法维持CD缓解的临床疗效,因此,不推荐EN作为维持CD缓解的主要治疗方法。

推荐意见8:有手术指征的CD患者需评估营养风险及肠道病变程度。术前存在营养不良或肠道病变重的CD患者,推荐实施营养预康复。(推荐等级:强烈推荐)

营养不良是手术并发症的独立危险因素[132],因此IBD患者在择期手术前建议进行营养风险筛查和营养状况评定。对有营养风险或营养不良的患者先进行营养治疗,待营养风险降低、营养状况纠正后再手术,这能够提高手术安全性,减少手术并发症[103,133]。对合并感染或使用糖皮质激素的患者,EEN在改善营养状况的同时,能够促进感染局限或消散、诱导CD缓解,有助于糖皮质激素撤退并消除糖皮质激素对手术的不利影响[134],上述理念也称营养预康复[135]。

需要手术的CD患者常合并复杂肠瘘、腹腔脓肿、不全性肠梗阻或病变范围广等情况,此类患者不但进食受限,部分患者甚至不能耐受口服EN,因此建议管饲EEN。不同研究采用的EEN治疗时间各不相同(1~12周),目前仍在探索CD不同疾病类型术前需要EEN治疗的时间,有研究显示小于2周的EEN无法达到治疗效果[136-138],一般建议6~8周。如EN治疗3~5 d仍无法达到有效剂量(60%以上能量及蛋白质需求),建议给予补充性肠外营养(supplementary parenteral nutrition, SPN)[48]。对有EN禁忌的患者,推荐在1~2 d内开始全肠外营养(total parenteral nutrition, TPN)。部分病情严重的患者需要尽快手术,没有充分的时间进行营养预康复,但如果存在重度营养不良,必要时也应推迟手术7~14 d以充分进行营养治疗[132,139-140]。

营养预康复的治疗目标包括C-反应蛋白恢复正常(≤8 mg/L)、营养状况改善(血清白蛋白>35 g/L)和停用可能增加手术并发症的药物等[103,141]。糖皮质激素(连续使用20 mg/d或以上等效剂量泼尼松>6周)术前至少需要停用4周[142-143],生物制剂(如IFX)术前是否停用尚存在争议。为维持停药期间CD病情相对稳定,通常予以禁食和EEN治疗[134,144]。

推荐意见9:IBD术后建议尽早启动EN,促进患者康复。(推荐等级:强烈推荐)

IBD患者术后恢复与营养状况密切相关。根据加速康复外科(ERAS)理念,胃肠道术后早期进食或EN能够促进肠功能恢复,不增加吻合口瘘的发生,而过度的静脉补液可增加肠吻合口瘘的风险[145]。术后第1天或第2天开始进食流质饮食或EN,能够促进患者康复,缩短术后住院时间[146-147]。术后开始进食或EN的具体时间应结合IBD手术类型、手术复杂程度、术后残余病灶等相关情况而定。对于重度营养不良患者,如果不能及时开始EN,需要早期启动肠外营养(parenteral nutrition, PN)治疗。

推荐意见10:活动期UC患者营养治疗的目的主要在于改善营养状况,不推荐将营养治疗作为儿童及青少年UC患者诱导缓解的常规治疗选择。(推荐等级:推荐)

营养治疗没有诱导或维持UC缓解的作用,但能够纠正UC患者营养不良或降低营养风险[148-151]。UC营养治疗首选EN,仅在EN失败或UC合并肠衰竭时实施TPN[148,152-154]。UC患者需要TPN治疗大多提示病情严重[155]。

推荐意见11:UC患者围手术期是否需要营养治疗,需结合患者营养状况及疾病严重程度而定,但重症UC患者不应因营养原因而推迟手术。(推荐等级:强烈推荐)

需要手术的UC患者营养不良的比例较高,营养不良一定程度上会影响UC的术后临床结局。因此,UC患者围手术期是否进行营养治疗取决于患者营养状况及疾病活动情况,有营养治疗适应证者,建议术前积极优化营养状况[156]。EN和PN均可作为营养治疗的方案,首选EN,如EN无法实施,则选择PN。与CD不同,营养治疗对于急性重症溃疡性结肠炎(ASUC)没有诱导缓解效果,如药物治疗效果不佳、需手术治疗时,由于病情凶险,不建议术前尝试营养治疗缓解病情,而应立即手术。关于UC围手术期营养治疗的研究有限,需要大样本量及前瞻性多中心临床研究进一步明确营养治疗在UC围手术期中的作用。

推荐意见12:建议组建包含有IBD治疗经验的临床医师、营养师、护士等在内的营养支持小组执行营养治疗方案。(推荐等级:强烈推荐)

营养支持小组包括有IBD治疗经验的临床医师、营养师、护理人员、药剂师等。营养支持小组的主要职责是:(1)开展营养风险筛查及评定;(2)制定营养治疗方案;(3)营养方案的实施和监测;(4)家庭营养治疗指导和随访等。营养咨询的可及性对IBD患者十分重要,在没有营养支持小组指导下实施的自我饮食限制可能对IBD患者疾病的控制产生不利影响,尤其是对IBD缓解期患者[157]。营养支持小组可为患者提供个体化的营养治疗方案[61,158]。营养支持小组介入营养治疗实施的循证医学证据有限,部分研究表明,由营养支持小组实施的TPN治疗对住院患者有一定的经济获益[159]。除营养师外,国外多个指南及共识也强调了护理的重要性,护士可及时识别营养不良相关症状如疼痛、乏力、体质量下降,开展营养治疗依从性的评估和并发症早期识别等,提高IBD患者营养治疗的质量[60,157]。

推荐意见13:建议结合营养治疗的目的、疾病活动度和肠功能状态等因素选择合适的营养途径,肠道能安全使用者首选肠内途径。(推荐等级:强烈推荐)

IBD患者营养治疗的途径需综合多个因素进行选择,包括营养治疗目的、患者的营养状况、炎症活动状态、是否可经口进食以及肠道吸收功能等。原则上肠道有功能者需首选肠内途径。

口服营养补充通常作为可经口进食患者在日常饮食摄入以外的营养补充途径[160],其优点是可接受性和依从性高[161]。若患者存在吞咽障碍或经口进食无法满足营养需求,可通过管饲方式实施EN[48,162]。在进食的同时补充EN称为PEN,而以诱导疾病缓解为目的或患者继发肠衰竭时实施营养治疗,应选择EEN,见"四、营养治疗在CD合并肠衰竭情况下的实施"。在EN基础上,如通过肠道自身的吸收功能无法达到总能量需求的60%,并且预计这种情况持续超过1周,则应联合使用PN[163-164]。当无法实施EN时,需启动TPN,TPN实施的常见临床场景包括短肠综合征急性期、高流量小肠内外瘘且EN无法维持水电解质平衡、肠瘘继发腹腔感染未得到控制、因肠梗阻无法实施EN、不耐受EN或无法建立EN通路等[164]。

推荐意见14:推荐根据患者肠功能状态选择肠内营养制剂。(推荐等级:推荐)

肠内营养制剂的分类方式有多种,最常用的是根据氮源组成方式进行分类,包括整蛋白型、氨基酸型和短肽型,整蛋白型为标准聚合物型(非要素型),氨基酸型和短肽型均为要素型。整蛋白型制剂大多由完整的营养素成分组成,渗透压接近等渗,适用于胃肠道功能相对正常而需实施EN者。要素型制剂(氨基酸型、短肽型)以单体物质如氨基酸或2~3个氨基酸形成的短肽为氮源,与葡萄糖、脂肪、矿物质和维生素组成混合物,其特点在于无需消化即可直接或接近直接吸收,对于存在消化吸收功能不全者(如肠道吸收面积减少、各类原因引起的消化吸收功能减退)较为适宜。在通过EEN诱导CD疾病缓解方面,标准聚合物型、短肽型及氨基酸型制剂均有证据证实其有效性[91-94]。

推荐意见15:当口服或管饲EN无法满足患者需求或存在禁忌时,推荐使用PN;推荐采用"全合一"方式进行PN;如果预计PN时间超过1周,建议通过中心静脉途径(经外周静脉穿刺中心静脉置管术或中心静脉置管术)输注。(推荐等级:推荐)

当患者肠道功能不能满足通过口服或管饲达到营养摄入需要时,则需启动PN。中心静脉管径粗、血流量大,不易产生静脉炎,适用于需长时间(超过1周)PN或需高浓度TPN者[165]。输注PN时建议采用"全合一"方式,即避免将碳水化合物、脂肪乳、氨基酸等营养物质分别输入,而应将所有营养成分放在同一容器里同时输注,以提高机体对营养物质的利用效率,降低管路和营养液污染发生率。通常情况下,PN配方中碳水化合物占非蛋白质热量的50%~70%,余30%~50%由脂肪乳供给,蛋白质按1.0~1.5 g/kg供给。目前尚无证据支持PN配方中加入特定底物如谷氨酰胺。一项系统回顾研究对比了口服、肠内或肠外方式给予谷氨酰胺对IBD患者的影响,发现3种方式对疾病活动、肠道症状、生化指标等反映病情变化的指标均无改善作用[166]。

四、营养治疗在CD合并肠衰竭情况下的实施

肠衰竭是指肠功能的损害导致消化、吸收和黏膜屏障功能产生障碍,不能满足机体对营养物质、水电解质吸收的最低需求量,需要静脉补充以维持健康和生长。肠衰竭分3型:Ⅰ型为腹部手术后短期内的自限性肠道功能变化;Ⅱ型常见于急腹症手术后相关并发症(如吻合口漏、肠道损伤

等),需要行数周或数月PN;Ⅲ型是慢性、代谢稳定的肠衰竭,通常为进行性的胃肠道或系统性良性疾病的结果,需要长期PN。CD肠衰竭常继发于腹腔感染、多次肠切除、疾病活动和近端肠造口[167]。

推荐意见16:CD合并肠狭窄或不全性肠梗阻时,营养治疗方式首选EN。如EN无法实施或不能满足营养需求,建议选择PN。(推荐等级:强烈推荐)

炎性或纤维性狭窄是CD的常见并发症,可能导致肠梗阻,从而继发肠衰竭[168]。肠狭窄或慢性不全性梗阻不是EN的禁忌证。EN消化吸收途径更符合生理状态,EN供能超过20%即可增加门静脉血流量、维护消化道生理功能和肠黏膜屏障[169],因此,CD合并肠衰竭患者应当建立有效的EN管饲途径,尽可能充分利用剩余的胃肠道,根据患者耐受程度适当进行EN。

对于合并肠狭窄的CD患者,EN制剂中应减少膳食纤维的摄入[170],选择低渣甚至无渣的EN制剂。实施EN过程中需要严密监测,对已出现完全梗阻等并发症的肠道进行EN可能进一步恶化肠功能和加重临床症状。一旦患者出现恶心呕吐、腹痛腹胀或梗阻急性发作等表现,需要及时停用EN并转为TPN[171]。若48~72 h内EN无法满足机体所需能量及蛋白质的60%,建议给予SPN[172]。

推荐意见17:CD合并肠瘘的营养治疗方式首选EN,从高位瘘口丢失的消化液建议收集回输,无法回输时建议补充PN。(推荐等级:强烈推荐)

根据肠瘘的位置和解剖学特征,应采取管饲和肠液回输等方式充分利用胃肠道,争取做到EEN以改善营养状况,减少或摆脱PN,使低流量瘘口逐渐愈合[98,173]。高位肠瘘者可将营养管放置到瘘口远端进行EN和肠液回输,充分利用远端肠管。对于高流量造口(>2 000 ml/d)和高流量瘘口(>500 ml/d),如经口或管饲摄入的能量及蛋白质无法达到每天需求量的60%且超过3 d,则需要给予SPN[170]。

推荐意见18:针对小肠造口的IBD患者,建议关注造口高流量导致的水电解质失衡,并及时纠正。(推荐等级:强烈推荐)

小肠造口术是IBD手术方式之一,一般肠造口24 h正常排出量为0.6~1.2 L,当排出量超过1.5~2.0 L时,称为造口高流量[174]。30%回肠造口术可能出现造口高流量现象。肠造口高流量会导致营养不良、电解质紊乱、微量元素和维生素缺乏、肾损伤等[175]。对于肠造口患者,需重视造口高流量问题,关注尿量并积极纠正水电解质失衡。首先,需要寻找造口高流量的病因,如术后腹腔感染、肠道细菌感染(如难辨梭状芽孢杆菌感染)、药物相关性腹泻、原发疾病(小肠CD)等,根据病因,积极对症治疗[176];其次,针对造口高流量,需进行饮食或营养成分调整,限制低渗饮食,减少纯水、低渗液体或高糖高渗液体摄入,口服电解质溶液或补充高盐高脂饮食,必要时给予禁食、静脉补充电解质或PN治疗[177];同时使用抑酸剂等药物抑制胃肠道分泌胃酸,在排除肠道感染后还可加用止泻药(如洛哌丁胺、阿托品、可待因等)[178]。如饮食和药物调整仍然无法控制造口高流量,需评估造口还纳的可能性。高位小肠病变尽可能行一期吻合,对于术中预判确需行高位造口和预计造口排量较高的患者,建议术中留置远端肠管插管以备术后经远端造口肠液回输或EN治疗。

推荐意见19:营养治疗联合经皮脓肿置管引流或抗生素治疗有利于控制CD合并腹腔或腹膜后感染。(推荐等级:强烈推荐)

10%~30%穿透性CD患者可合并腹腔或腹膜后感染[179]。腹腔感染的处理方式与其大小密切相关,对于直径小于30 mm的腹腔脓肿或蜂窝织炎,可给予抗生素治疗;对于直径大于30 mm的腹腔脓肿,经皮穿刺引流或手术引流具有更大优势[180]。

大多数腹腔脓肿合并肠道穿透性病变,如患者无弥漫性腹膜炎(内瘘、向系膜方向的包裹性穿透),可在脓肿穿刺引流后,逐步启动EN至EEN,以改善炎症和营养指标[181],促进脓肿局限和消散,待脓肿退缩后再评估确定性手术时机[182]。部分患者可在严密监测下采用生物制剂治疗[183]。

推荐意见20:对于CD并发短肠综合征的患者,在肠功能代偿期积极采用EN治疗不但能够纠正营养不良,而且有利于肠功能代偿,诱导和维持CD缓解。(推荐等级:强烈推荐)

CD是导致短肠综合征(short bowel syndrome,SBS)的常见病因[184]。SBS合并急性肠衰竭的患者,多无法经口服或肠内途径吸收足够的营养,TPN是其唯一选择[185-186]。TPN虽然能够满足患者对营养的需求,减轻短肠患者腹泻症状,但不利于肠功能代偿[187]。

对于CD合并SBS患者,应尽可能从长期PN过渡到EN,以降低发生远期并发症的风险[170]。胰高血糖素样肽-2(GLP-2)激动剂治疗或有助于促进这种过渡[170,188]。在肠功能代偿期,根据保留的小肠长度、功能和患者的耐受情况适量管饲EN,不但有利于改善患者营养状况,促进肠功能代偿,而且有助于诱导和维持CD缓解,延迟复发[167,170,189]。对于无法耐受EEN的SBS患者,可以采用PEN联合SPN的方式满足营养需求,当肠道完全无法使用时再考虑选择TPN[190-191]。EN的制剂类型首选氨基酸型或短肽型,后续根据肠道耐受情况逐渐向整蛋白型过渡,此过程中需维持水电解质及酸碱平衡,监测和维护主要脏器功能。

推荐意见21:在营养治疗中,建议密切监测营养和代谢相关并发症。重度营养不良患者在开始营养治疗时建议采取措施预防再喂养综合征的发生。(推荐等级:强烈推荐)

开展营养治疗过程中需要密切监测营养和代谢相关并发症,并积极处理。

EN并发症如下:(1)胃肠道不耐受:如腹泻、腹胀、恶心、呕吐等,可能与输注速度过快、营养制剂温度低、渗透压高、CD病情严重等相关,可考虑从低速度(10~15 ml/h)开始、适度加温营养制剂、调整制剂配方等提高肠道耐受性[192-194]。(2)导管相关并发症:鼻窦炎、鼻咽部黏膜损伤、营养管堵塞/移位/打折等。经皮胃/空肠置管可能存在插管口周围及深部器官损伤/出血/穿孔、置管部位渗漏等风险[195]。插鼻胃管时

操作要轻柔,平时应注意观察置管部位皮肤黏膜情况。注意有效冲管,维护管路清洁及畅通[196-198]。(3)代谢并发症:包括水电解质紊乱、血糖波动、血脂异常等,需合理使用EN,按时监测相关指标。(4)感染并发症:如吸入性肺炎、营养液污染、经皮置管所致的伤口感染等。(5)反流误吸:为减少误吸,建议管饲时避免平卧位。对合并胃排空障碍或高误吸风险(如幽门、十二指肠、高位空肠的狭窄或瘘)的患者,推荐将导管放置到狭窄或瘘口远端进行管饲,并从较低速度开始输注,根据耐受情况逐渐增加至目标量。误吸高风险患者建议输注时抬高床头(至少30°),并定期监测胃排空情况[199]。

PN并发症如下:(1)导管相关并发症:如穿刺损伤周围器官、导管移位/堵塞/打折/功能障碍、空气栓塞、血栓形成等,需规范操作,定期观察穿刺部位情况,做好导管护理[194]。(2)代谢并发症:包括血糖波动、血脂异常、水电解质紊乱、微量元素和维生素紊乱、高氨血症、代谢性骨病等,需个体化计算营养物质需要量,定期监测相关指标。(3)感染并发症:如导管相关局部或血流感染、营养液污染等。(4)脏器功能损害:如PN相关性肝损害、肠黏膜屏障功能损害等。需定期监测脏器功能,必要时优化PN配方。部分并发症可以通过严格遵循相关规范及定期监测随访加以预防,肠道功能允许时尽早使用EN有助于减少PN相关并发症[200-202]。

再喂养综合征(refeeding syndrome,RFS)是指长期饥饿或重度营养不良的患者在开启营养治疗时引起的与代谢紊乱相关的一系列症候群,表现为电解质紊乱(低磷血症、低钾血症、低镁血症等)、糖代谢异常和维生素B_1缺乏等。RFS可影响消化、循环、呼吸、神经肌肉等多系统,病死率高[203-204]。RFS重在预防,对于高危患者应逐步推进营养供给,密切监测水电解质及维生素水平,尤其是血磷、血钾、血镁及维生素B_1等,必要时及时进行纠正[194,205-206]。

推荐意见22:病情稳定的IBD患者,如需要长期营养治疗,推荐居家实施。(推荐等级:强烈推荐)

病情相对稳定且需要长期营养治疗的患者可以实施家庭营养治疗。家庭营养治疗可以让患者回归家庭,提高生活质量,减少医源性感染和医疗费用,提高医疗资源的使用效率。为减少营养治疗相关并发症,提高疗效,家庭营养治疗需要在营养支持小组的监督指导下进行。

家庭营养治疗分为家庭肠外营养(home parenteral nutrition,HPN)和家庭肠内营养(home enteral nutrition,HEN)[194]。HPN是慢性肠衰竭患者维持生命的重要手段,对技术和设施的要求较高。“全合一”肠外营养液配制应在设施完备的肠外营养配制室进行,接受HPN的患者及家属均需要经过严格的培训,包括营养液输注、管路护理等。HPN过程中需密切监测PN相关并发症并及时处理[194,200,207-208]。

国内家庭营养治疗以HEN为主。HEN多采用管饲,包括鼻胃管及经皮胃/空肠造口途径等[209-210]。HEN过程中需关注耐受情况,并注意管路维护、避免感染、定期监测感染和生化指标,预防导管相关并发症。对于肠道耐受程度较好、使用PEN的患者可以尝试采用口服营养补充的方式,其优点是简便易行,符合生理需求,患者依从性好。

五、IBD营养治疗实施过程中的监测、调整和管理

IBD营养治疗中应动态监测疾病活动程度和营养状态,及时评估治疗效果,个体化调整管理方案。不同患者对营养治疗的认知程度和耐受情况存在差异,应加强宣教,提高依从性,改善营养治疗效果。

推荐意见23:营养治疗中推荐动态评估治疗效果并及时调整,重视宣教。提高患者依从性有助于改善疗效。(推荐等级:强烈推荐)

在IBD营养治疗过程中,推荐根据营养治疗目标动态评估治疗效果,如克罗恩病活动指数(CDAI)、炎症指标和营养指标等。治疗效果的动态评估有利于明确营养治疗的终点,及时调整治疗方案[211-212],准确把握手术时机[27,213]。由于不同患者的营养摄入途径不同,对EN的依从性和肠道耐受性不同,营养治疗效果会有所差别,动态评估有助于及时发现问题,调整营养治疗方案,提高疗效。

依从性欠佳是IBD患者实施营养治疗过程中的常见问题。营养治疗时间越长,患者依从性对疗效的影响越大。EEN诱导CD缓解的疗效与依从性密切相关[214]。患者对管饲的恐惧和对长期禁食的抵触是EEN难以执行的主要原因。对于因工作等客观因素无法管饲EEN者,可以改为口服EEN。医护人员对营养重要性认识不足、对治疗过程缺乏耐心、对疗效缺乏信心也是导致患者依从性差的原因[12]。因此,加强对医护人员和患者的相关宣教,促进医患及患者之间的相互交流,制定并严格执行标准化的营养治疗流程,有利于提高患者对营养治疗的依从性[12]。

六、IBD营养治疗中饮食的作用

饮食对IBD发病及临床症状的影响一直是关注的重点,即使是孪生兄弟或姐妹,膳食结构的差异也会影响IBD的发生[215]。某些特定食物成分可能与IBD的发病风险相关,但受到食物的多样性、食物成分相互作用等多方面因素的影响,目前大规模的临床研究仍较少,还需要更高质量研究证据支持。营养治疗过程中饮食组分的选择、组分比例的界定、饮食干预的时机均应受到重视。

推荐意见24:部分水果、蔬菜、富含n-3脂肪酸和低n-6脂肪酸的食物可能对IBD有保护作用;熏制的红肉、膨化食品、精制甜味食品等过度加工的食物和碳酸饮料等含有较多添加剂的食物可能是IBD的危险因素。(推荐等级:强烈推荐)

大部分新鲜水果蔬菜(如香蕉、西兰花等)含有较多可溶性膳食纤维,可在结肠内发酵产生短链脂肪酸,对缓解结肠炎症反应有一定作用[216]。荟萃分析提示,蔬菜、水果的摄入量不足可能增加IBD的发病风险[217-218]。但是,合并肠道狭窄的患者,应注意避免摄入过多含不可溶性纤维的食物[219-220]。富含n-3(又称ω-3)多不饱和脂肪酸(polyunsaturated fatty acid,PUFA)的食物(如三文鱼、沙丁鱼、鲭鱼等深海鱼类和亚麻籽油等)对IBD可能有保护作

用[219-220]。n-6(又称ω-6)PUFA是必需脂肪酸的重要来源,主要存在于植物油和种子类食物中,如玉米油、葵花籽油、大豆油等,因其代谢产物具有促炎作用,长期摄入可能增加IBD的患病风险[101]。研究表明,适当增加富含n-3 PUFA食物的摄入,调高膳食中n-3/n-6 PUFA的比例可能降低IBD的患病风险和疾病活动度[221-225]。然而,目前该领域仍缺乏高质量临床研究的支持,长期口服补充n-3 PUFA维持IBD缓解的研究也未得到预想的结果,因此关于饮食中不同脂肪含量和成份对IBD的影响尚无结论[226-228]。

过度加工的食物如熏制的红肉、膨化食品、精制甜味食品(糖果、巧克力、果酱、果冻、布丁、冰淇淋)和含有较多添加剂的肉制品、碳酸饮料、风味酸奶等可能是IBD的危险因素[229-230]。一项平均随访10年的多中心饮食问卷调查提示,超加工食品的摄入量较高与IBD风险呈正相关[230]。可能与超加工食物在肠道较难吸收,进入结肠后迅速被细菌发酵,刺激肠道分泌黏液,促进致炎细菌生长有关。部分添加剂可能会增加硫的摄入,经肠腔内硫酸盐还原菌代谢后产生硫化氢,加重肠黏膜炎症反应[231]。

饮食干预疗法如特殊碳水化合物饮食(SCD)、限制可酵解的寡聚糖、双糖、单糖和多元醇(FODMAP)饮食、排除可能加重CD症状的特定食物成分(如小麦、乳制品、动物脂肪、添加剂、加工食品和熏制的红肉)的排除性饮食(CDED)等可能在维持疾病缓解中起一定作用[232-234]。一项开放标签的随机研究发现,无论是否联合EN,CDED都可诱导轻中度CD患者疾病缓解和维持缓解,并且有可能促进黏膜愈合[232]。但需要注意的是,目前没有专门的IBD饮食可促进活动期IBD的疾病缓解,这一领域仍需要更高质量临床研究进一步证实[232,235-236]。并且,减少摄入特定食物可能会带来营养风险,需要注意监测营养指标。

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·读者·作者·编者·

本刊文稿中容易出现的错别字及不规范用语

箭头后为正确用字

粘膜→黏膜
粘液→黏液
指证→指征
禁忌症→禁忌证
海棉→海绵
合并症→并发症
机理→机制
机率→概率
机能→功能
节段性肠炎→局限性肠炎
瘀血→淤血
综合症→综合征
适应症→适应证
成份→成分
大肠→结直肠
发烧→发热
瘘道→瘘管
水份→水分
体重→体质量
图象→图像
胃食管返流→胃食管反流
愈合期→恢复期
5-羟色氨→5-羟色胺
份量→分量
浮肿→水肿
幅射→辐射
腹泄→腹泻
无须→无需
血色素→血红蛋白
血象→血常规
已往→以往
影象→影像
愈后→预后