

慢性阻塞性肺疾病急性加重期肺康复的研究进展

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摘要

近年来, 肺康复在慢性阻塞性肺疾病稳定期患者中的获益已达成统一意见, 但其应用于急性加重期的研究较少, 并且全世界只有少数患者完成了肺康复计划, 未引起临床医生的足够重视。本文对慢阻肺急性加重期患者肺康复治疗应用的相关研究现状进行综述, 为临床管理及康复计划提供参考依据。

关键词

慢性阻塞性肺疾病, 急性加重, 肺康复

Advances in Pulmonary Rehabilitation during Acute Exacerbations of Chronic Obstructive Pulmonary Disease

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Abstract

In recent years, the benefits of pulmonary rehabilitation in patients with stable chronic obstructive pulmonary disease (COPD) have been unanimously agreed upon, but its application to acute exacerbations has been less well studied and only a small number of patients around the world

have completed a pulmonary rehabilitation program, which has not attracted sufficient attention from clinicians. This article reviews the current status of studies related to the application of pulmonary rehabilitation therapy in patients with acute exacerbations of chronic obstructive pulmonary disease (COPD) to provide a reference basis for clinical management and rehabilitation programs.

Keywords

Chronic Obstructive Pulmonary Disease, Acute Exacerbation, Pulmonary Rehabilitation

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1. 引言

GOLD 2023 [1]报告重新界定了慢性阻塞性肺疾病急性加重(AECOPD)定义: AECOPD 是一种急性事件,慢阻肺患者呼吸困难和/或咳嗽、咳痰症状加重,症状恶化发生在 14 天之内,可能伴有呼吸急促和/或心动过速,通常是因为呼吸道感染、空气污染造成局部或全身炎症反应加重、或者因损伤气道的其他原因所致。慢阻肺患者随疾病进展会出现体质量减轻、营养不良、预后差、肺功能下降、住院次数增加、运动耐力差、生活质量下降和病死率增加[2]。肺康复(PR)在整个慢性呼吸系统疾病中占有重要地位,尤其是对于慢阻肺患者来说,其广泛的国际概念得到了美国胸科学会和欧洲呼吸学会的认可,指的是“基于全面患者的全面干预评估,然后针对患者量身定制疗法,包括但不限于运动训练,教育和行为改变,旨在改善慢性呼吸道疾病患者的身心状况,促进长期坚持增强健康行为” [3]。

2. 肺康复内容

2.1. 教育干预

在慢阻肺中常见的教育主题包括疾病病理生理学、药物应用、心理支持、呼吸困难的对策、运动的作用和对疾病急性加重期的认识[4],肺康复教育应侧重于优化疾病自我管理和促进健康的行为改变,包括戒烟、正确使用吸入药物和氧气、健康营养和体重管理、体育活动和日常锻炼,以及早期识别和管理疾病恶化[5]。一项随机对照研究表明[6],向患者强调促进协作性自我管理,这可以减少医疗利用率和后续成本,但指南[7]建议不应仅通过教育来预防 COPD 的急性加重。一项针对呼吸内科收治的 180 例 COPD 患者的调查显示,超过 70%的患者渴望接受有关合理休息、均衡饮食和适当运动的各种健康教育[8]。目前,我国对于教育干预的研究较少,但通过教育能够让患者迅速识别疾病加重或急性发作时的症状或迹象,从而得到及时的治疗;同时患者自我效能得到提高,可以更好地执行肺康复处方,长期坚持肺康复,提高依从性。目前,最受欢迎的健康教育形式是医院提供的信息手册和医务人员提供的相应解释相结合 [9]。

2.2. 呼吸训练

呼吸训练是慢阻肺患者较为常用的方法,常见的呼吸训练主要包括:缩唇呼吸、腹式呼吸、前倾呼吸、呼吸操,其他广义的呼吸训练还包括瑜伽、太极拳、唱歌或口琴演奏等。缩唇呼吸,吸气与呼气之比为 1:2, 10~15 min/次, 2~3 次/日;腹式呼吸,吸气与呼气之比为 1:2, 10~15 min/次, 2~3 次/日;呼吸

操：结合缩唇呼吸，每周 4 次。握拳上举 → 握拳外展 → 抱头外展 → 手掌向上 → 手臂上举 → 抱膝下蹲。研究表明，缩唇呼吸(PLB)和横膈膜呼吸(DB)等呼吸训练可有效改善这些患者的呼吸能力和活动水平[10]。呼吸练习不仅增加呼吸肌的力量，使肺内气体可以更好地排空，改善胸腹的运动模式，增强气体交换，而且可以改善肺部的功能，控制症状，从而减少对药物的需求[11]。

2.3. 运动训练

对急性加重期慢阻肺患者来说，最常用的处方方式是地面行走(94%)、从坐到站(89%)和非基于设备的下肢强化(79%) [12]。可使用单腿站立(OLS)测试在静态位置评估平衡，运动能力通过 30 秒坐立(STS)测试进行评估，能够识别老年人的外周肌无力，已成为老年人普遍接受的功能状态指标。研究表明，在住院期间通过锻炼计划可以改善下肢力量和平衡，可改善身体机能，包括 STS 表现、平衡、敏捷性和行走能力[13]，并且运动训练与阻力训练与更好的生活质量相关[14]。一项运动干预(n^{1/4} 49)由深呼吸和肢体运动的多模式程序(30~45 分钟)组成，并当场进行(20~30 分钟)，研究表明在 AECOPD 期间进行不同类型的运动训练可以改善患者的预后[15]。

2.4. 气道清洁排痰技术

慢性阻塞性肺病加重的特征是呼吸困难、咳嗽和咳痰等症状增加，并在 2 周内恶化[16]，且急性加重的死亡率预计位居全球前五，死因与痰液过多、引流不力有关[17] [18]，越来越多的研究表明，呼吸道微生物的菌群失衡与慢阻肺患者的恶化、死亡率的频率有关[19]。物理疗法最广泛地用于改善呼吸道症状和肺容量，并缩短恢复时间。高频胸壁振荡(HFCWO)和侧卧位声门开放呼气(ELTGOL)作为两种常用的肺部物理疗法，均能有效改善 AECOPD 患者的肺功能和血气指标[20]。部分研究显示 HFCWO 效果更好，可显著提高痰液引流效率，增加雾化干预效果，较好改善 AECOPD 患者的临床症状[21]，同时，系统具有生物反馈等相关配置，有利于增强机体的痰液排泄能力，减少咳嗽次数[20]。

2.5. 营养干预

营养不良在 COPD 患者中相对常见[15]。在病情加重期间，食欲不振和饮食摄入减少、缺乏运动、炎症、低氧血症和使用全身性皮质类固醇等因素可能会导致或加速体重减轻和肌肉萎缩。欧洲呼吸学会推荐在 COPD 恶化期间进行营养评估和治疗，COPD 患者存在维生素 D 缺乏和具有抗氧化能力的维生素(维生素 A、C 和 E)摄入不足的报道[22]。维生素 D 在骨骼和钙稳态中起着重要作用，同时具有抗炎、抗感染和抗肿瘤以及神经肌肉改善作用[23]，摄入更多的膳食纤维与 COPD 风险降低、肺功能改善和呼吸道症状减轻有关[24]。有证据表明，饮食在阻塞性肺疾病(包括 COPD)中起着至关重要的作用[25] [26]。例如，地中海式饮食(以大量摄入家禽、蛋类、鱼类、蔬菜、豆类、土豆、乳制品甜点、水果、坚果和干果为特征)可能保护肺功能[27]，而摄入腌制肉类和加工红肉可能会增加 COPD 再入院的风险[28] [29]。

3. 肺康复干预时间

对于慢阻肺急性加重期患者，肺康复开始的时间较有争议，有研究表明出院后 3 个月内开始肺康复与 1 年内死亡率降低显著相关[30]。澳大利亚和新西兰指南建议在 COPD 加重后，出院 2 周内提供肺康复治疗[10]。ERS/ATS 建议对于因 COPD 恶化住院的患者，在出院后 3 周内开始肺康复[31]。同样肺康复持续时间也尚未达成共识，加拿大指南建议为 COPD 患者提供更长的 PR 计划，持续时间超过 6 至 8 周[32]，目前缺乏证据评估持续时间较长的方案是否比标准的 8 周方案更有效[10]。关于肺康复计划的最短或最佳持续时间、基本组成部分、地点、患者类型等的明确指导基本上是缺失的[33]。

4. 肺康复在慢阻肺急性加重期间的安全性和有效性

目前对于慢阻肺患者急性加重期康复的安全性仍存在一些争议[34], 并且 ERS(欧洲呼吸学会)建议在住院期间暂停肺康复[31]。该建议是基于 Greening 及其同事的研究[35], 该研究报告称康复组 12 个月时的死亡率有所增加。急性加重期肺康复干预出院后死亡率较高的原因尚不清楚, 但人们对门诊阶段提供的康复性质表示担忧[36] [37], 包括出院后的运动部分不受监督, 没有以准确的运动处方为基础, 没有按照公认的肺康复标准进行进展, 并且参与者的依从性较差。但是, 有研究表明[38]在 AECOPD 患者住院期间提供 PR 是安全有效的, 并且院内 PR 可提高功能锻炼能力、生活质量和下肢力量, 而无需延长住院时间。确实, 15 项研究(n = 797)报告了不良事件, 仅报告了一项与干预相关的严重但暂时的不良事件[39]。

5. 总结与展望

近年来, AECOPD 期间的早期康复领域正在引起人们极大的兴趣, 2015 年后的系统回顾[40], 5 项 RCTs [41] [42] [43] [44] [45]和一个观察性研究已经使用了不同的运动干预, 综合型康复[46], 神经肌肉刺激, 对股四头肌抵抗力的训练在 AECOPD 期间患有中度至重度 COPD 的人均有效, COPD 加重后出院后早期肺康复与降低再入院风险和增强身体机能有关。这些结果补充了我们对慢性阻塞性肺病加重后不久肺康复的积极作用的了解, 但是多达 50%的转诊康复患者从未参加过一次治疗[47], 英国一项关于早期肺康复的审计报告称, 只有 48%的转诊患者完成了康复计划, 在其他试验中也发现了类似的结果[48] [49]。研究发现影响肺康复出勤率的因素可能是环境因素, 例如长途旅行和交通问题, 社会因素(例如缺乏家人和朋友的支持)或缺乏康复带来的益处[50]; 与康复依从性较差相关的其他因素包括当前吸烟、生活质量低下、焦虑和抑郁[51]。据推测, 出勤率低可能对 COPD 早期肺康复的效果产生负面影响, 这些发现是探索性的, 需要在未来的前瞻性研究中得到证实, 为患者提供全面有效肺康复干预措施。

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