改良复方消胀散熏洗结合针灸治疗 脑梗死后肩手综合征疗效观察

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摘要 目的:观察改良复方消胀散熏洗结合针灸治疗脑梗死后肩手综合征(SHS)患者临床疗效。**方法:**选取北京市怀柔区中医医院收治的脑梗死后肩手综合征患者80例,按照随机数字表法分为对照组和观察组,每组40例。对照组给予常规内科治疗和康复训练。康复训练20~30 min/次,1次/d,5次/周,连续治疗1个月。观察组在对照组基础上给予改良复方消胀散熏洗结合中医针灸治疗。①熏洗治疗:改良复方消胀散加水煎,留取中药汤剂1 500~2 000 mL,放入恒温桶内,待水温加热至40~50℃时,将偏瘫肿胀手浸泡于药液中,同时蘸药液从肘关节向腕关节方向边擦边按揉至各指间关节,20 min/次,2次/d,5 d/周,连续治疗1个月。②针刺治疗:采用醒脑开窍针法针刺极泉下穴、尺泽穴、内关穴,不留针;针刺肩髃穴、肩髃穴、曲池穴等,直刺0.5~1寸,施提插捻转补法1 min,留针20 min/次,1次/d,隔日1次,3次/周,连续治疗1个月。采用Fugl-Meyer运动功能评定量表上肢部分(FMA-U)评价上肢运动功能;采用日常生活能力评定量表(MBI)评价日常生活能力;采用疼痛视觉模拟评分法(VAS)评估患肢的疼痛程度;采用量角仪测量肩关节活动范围(ROM)评定肩关节活动度;采用排水法测量手部水肿程度。**结果:**与治疗前比较,2组治疗后1个月FMA-U、MBI、肩关节活动度均明显提高,VAS评分、水肿体积差均明显降低,差异具有统计学意义($P<0.05$);与对照组比较,观察组治疗后1个月FMA-U、MBI、肩关节活动度均明显更高,VAS评分、水肿体积差均明显更低,差异具有统计学意义($P<0.05$);观察组总有效率(92.5%)明显高于对照组(67.5%),差异具有统计学意义($P<0.05$)。**结论:**改良复方消胀散熏洗联合针刺可有效改善脑梗死后SHS患者手部肿胀程度,缓解疼痛;提高上肢运动功能、肩关节活动度和日常生活能力,疗效较好。

关键词 脑梗死;肩手综合征;改良复方消胀散;熏洗;针灸

肩手综合征(shoulder-hand syndrome, SHS)是脑血管疾病的常见并发症之一,多发生在脑卒中的恢复期(1~3个月),表现为突然出现的手部水肿、胀痛、发红发热,逐渐加重的掌指关节、腕关节乃至肩关节活动受限,严重者可以出现手部肌肉不可逆性的挛缩与畸形等^[1]。该病发病率高、致残率高,且

治疗难度大,对患者的日常生活造成严重影响,延缓了疾病的康复进程^[2]。目前,SHS尚无特效治疗方案,西医多运用激素治疗、口服止痛药物等减轻疼痛,缓解患者的临床症状。但是激素治疗、止痛药应用无法阻止疾病的进展,且药物治疗不良反应多,不能长期使用。有研究显示针灸治疗手部肿胀、疼

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痛具有良好疗效,其可消肿散瘀,活血行气止痛^[3];北京市名老中医李祥舒主任^[4]应用复方消胀散治疗脑卒中后手足肿胀取得较好疗效,不仅能消除肿胀,促进手足功能恢复,而且能有效降低致残率。本研究应用改良复方消胀散熏洗结合针刺治疗脑梗死后SHS,取得良好疗效,现报告如下。

1 临床资料

1.1 病例选择标准

1.1.1 诊断标准

1.1.1.1 脑卒中诊断标准 ①脑卒中中医诊断标准符合《中风病诊断与疗效评定标准(试行)》^[5]中有关中风病的诊断标准。②脑卒中西医诊断标准符合《中国急性缺血性脑卒中诊治指南 2018》^[6]中脑梗死的诊断标准。并经头颅CT或MRI检查确诊为脑梗死。

1.1.1.2 肩手综合征诊断标准 符合中华医学会神经病学分会神经康复学组等制定的《中国脑卒中康复治疗指南(2011完全版)》^[7]中有关肩手综合征的诊断标准。

1.1.2 纳入标准 ①符合上述诊断标准者;②脑梗死后SHS分期:I~II期;③年龄:40~70岁;④病程:7~120 d;⑤患者生命体征平稳,能够配合康复治疗者;⑥患者及家属知情同意并自愿签署知情同意书。

1.1.3 排除标准 ①认知障碍或患有精神疾病无法配合治疗;②合并有严重的心肝肾等重要脏器疾病;③皮肤过于敏感无法接受中药熏洗治疗;④重复脑梗死,SHS反复发作或病情加重者。

1.2 一般资料

选取2019年3月—2020年1月北京市怀柔区中医医院康复科收治的脑梗死后SHS患者80例。按照随机数字表法分为对照组和观察组,每组40例。本研究经北京市怀柔区中医医院伦理委员会审批通过。2组性别、年龄、病程、临床分期等一般资料比较,差异无统计学意义($P>0.05$),具有可比性。见表1。

表1 2组一般资料比较($\bar{x}\pm s$)
Table 1 Comparison of general data between two groups ($\bar{x}\pm s$)

组别	n	性别		年龄/岁	病程/月	临床分期	
		男	女			I期	II期
对照组	40	16	24	60.6±6.0	3.26±1.1	32	8
观察组	40	22	18	61.4±6.7	3.60±0.9	36	4

2 方法

2.1 治疗方法

2.1.1 对照组 在常规内科治疗和护理的基础上给予康复训练。

2.1.1.1 常规内科治疗 进行抗血小板聚集、降脂稳定斑块、改善微循环、促进神经功能恢复等治疗。

2.1.1.2 常规护理 监测血压和血糖等生命体征、良肢位摆放、适度饮食、规律作息、保持大小便通畅^[8]。

2.1.1.3 常规康复训练 由康复治疗师对患者进行一对一训练指导,所有患者按照肩关节、肘关节、腕关节、掌指关节、指间关节的顺序进行屈、伸、内收、外展、内旋、外旋及环转运动等主、被动运动训练,以维持与改善患肢关节活动。关节活动以不引起患者疼痛为宜,并逐渐加大患肢的活动度。此外,根据患者功能障碍情况给予进食、穿衣、洗澡等日常生活训练。康复训练20~30 min/次,1次/d,5次/周,连续治疗1个月。

2.1.2 观察组 在对照组基础上给予改良复方消胀散熏洗和针刺治疗。

2.1.2.1 改良复方消胀散熏洗治疗 参照《临床护理技术规范》的热疗技术^[9],改良复方消胀散(生黄芪10 g,当归6 g,川芎6 g,红花6 g,白芷3 g,豨莶草10 g,生大黄3 g,地龙10 g,蜈蚣1条,水蛭3 g)加水煎后滤除药渣,取中药汤剂1 500~2 000 mL,放入恒温桶内,待水温加热至40~50℃时(健手能耐受的溫度为准),将偏瘫肿胀手置于药液中,在浸泡同时,用小毛巾蘸药液从肘关节向腕关节边擦边按揉至各指间关节,20 min/次,2次/d,5 d/周,连续治疗1个月。

2.1.2.2 针刺治疗 患者平卧位,双上肢分别伸直置于身体两侧,暴露患侧上肢并注意保暖。选择患侧上肢极泉下穴(极泉下1寸)、尺泽穴、内关穴、肩髃穴、肩髃穴、臂臑穴、曲池穴、手三里穴、合谷穴、外关穴,局部皮肤常规消毒后,采用0.25 mm×40 mm的一次性针灸针(苏州医疗器械厂,东邦牌)针刺极泉下穴、尺泽穴、内关穴。①极泉下穴:采用醒脑开窍针法直刺0.5~0.8寸,施提插泻法,以患侧上肢抽动3次为度。②尺泽穴:屈肘120°,直刺1寸,施提插泻法,以患肢手指抽动3次为度。③内关穴:直刺0.5~1寸,采用提插捻转泻法1 min。以上操作均不留针。④其他穴位:患者掌心向下,针刺肩髃穴、肩髃穴、臂臑穴、曲池穴、手三里穴、外关穴、合谷穴,直刺0.5~1寸,施提插捻转补法1 min,留针

20 min/次,1次/d,隔日1次,3次/周,2周为1个疗程,持续治疗1个月。

2.2 观察指标

2.2.1 上肢运动功能评分 采用Fugl-Meyer运动功能评定量表上肢部分(Fugl-Meyer motor function sacale for upper limb, FMA-U)^[10]评价上肢运动功能。①0分:患肢不能引起任何反射活动;②1分:可引起部分反射活动;③2分:无停顿完成所有动作。该量表共有33项,各项评分为0~2分,总分为66分,分数越高表示上肢运动功能越强。

2.2.2 日常生活能力评估 采用日常生活能力评定量表(modified Barthel index, MBI)^[11]评价日常生活能力。①100分:生活能力自理;②≥60分:日常生活基本自理;③41~59分:日常生活能力中度障碍,需要他人帮助;④21~40分:日常生活能力重度障碍,需依赖他人;⑤<20分:生活需完全依赖他人。得分越高表示患者日常生活能力越强。

2.2.3 疼痛程度评分 采用疼痛视觉模拟评分法(visual analogue scale, VAS)^[12]评估患肢的疼痛程度。①0分:表示无任何痛感;②10分:表示疼痛剧烈;③1~9分:表示轻重不同程度疼痛。分数越高表示疼痛越严重。

2.2.4 肩关节活动度测量 采用量角仪测量肩关节活动范围评定(range of motion, ROM)^[13]。测量时,患者摆好体位,嘱其主动运动,根据量角器轴心、固定臂、移动臂测量出相应角度。包括肩关节的前屈、后伸、外展、内收、外旋、内旋角度。

2.2.5 肿胀程度评估 采用排水法^[14]测量手部水肿程度,将患侧手放入装满水的容器中,水面平腕关节骨隆突并测量排出水的体积,同法测量健侧手,水肿程度为两者排出水的体积差,重复测量3次,取其平均值。

2.2.6 疗效评价 参照《偏瘫的现代评价与治疗》^[15]相关内容进行疗效评定。①治愈:患肢无疼痛、水肿、肌肉萎缩表现,关节活动度正常;②显效:患肢疼痛、水肿减轻,肌肉萎缩改善,关节活动度增强;③有效:患肢疼痛、水肿、肌肉萎缩稍有减轻,活动范围稍好转;④无效:患肢疼痛、水肿、肌肉萎缩以及关节活动无明显变化。有效率=(治愈+显效+有效)/总例数×100%。

分别于治疗前、治疗1个月后进行以上项目的评价。

2.3 统计学方法

采用SPSS 21.0进行统计学分析。计量资料均

用($\bar{x} \pm s$)表示,数据符合正态分布,组内治疗前后比较采用配对样本 t 检验,组间比较采用两独立样本 t 检验;计数资料以率(%)表示,组间比较采用 χ^2 检验。 $P < 0.05$ 为差异有统计学意义。

3 结果

3.1 2组治疗前后FMA-U、MBI评分比较

见表2。

表2 2组治疗前后FMA-U、MBI评分比较($\bar{x} \pm s$)

Table 2 Comparison of FMA-U and MBI scores between two groups before and after treatment ($\bar{x} \pm s$)

组别	n	FMA-U 评分		MBI 评分	
		治疗前	治疗后	治疗前	治疗后
对照组	40	33.1±5.4	42.3±4.7 ¹⁾	45.7±8.8	51.6±2.4 ¹⁾
观察组	40	32.7±6.1	62.3±5.2 ¹⁾²⁾	44.5±7.7	68.4±3.7 ¹⁾²⁾

注:与治疗前比较,1) $P < 0.05$;与对照组比较,2) $P < 0.05$ 。

Note: Compared with before treatment, 1) $P < 0.05$; Compared with the control group, 2) $P < 0.05$.

3.2 2组治疗前后VAS评分及水肿程度比较

见表3。

表3 2组治疗前后VAS评分和水肿程度比较($\bar{x} \pm s$)

Table 3 Comparison of VAS scores and degree of edema between two groups before and after treatment ($\bar{x} \pm s$)

组别	n	VAS 评分		水肿体积差/cm ³	
		治疗前	治疗后	治疗前	治疗后
对照组	40	7.4±1.7	6.3±1.3 ¹⁾	6.2±1.2	4.8±1.1 ¹⁾
观察组	40	6.8±1.5	3.7±1.1 ¹⁾²⁾	6.3±0.9	2.7±0.8 ¹⁾²⁾

注:与治疗前比较,1) $P < 0.05$;与对照组比较,2) $P < 0.05$ 。

Note: Compared with before treatment, 1) $P < 0.05$; Compared with the control group, 2) $P < 0.05$.

3.3 2组患者治疗前后肩关节活动度比较

见表4。

3.4 2组临床疗效比较

见表5。

4 讨论

SHS是脑卒中后的常见并发症,脑卒中后其发病率可达12.5%~70%,有研究显示仅有20%的患者彻底被治愈,多数患者处于疾病的慢性进展中,发生关节的退行性改变^[16]。SHS患者早期仅出现手部的水肿与疼痛,关节活动轻度受限,容易被患者忽视而错过最佳的诊疗时机。随着疾病的不断发展,

表 4 2 组治疗前后肩关节活动度比较 ($\bar{x}\pm s$)
Table 4 Comparison of shoulder mobility between two groups before and after treatment ($\bar{x}\pm s$)

组 别	n	时间	前屈	后伸	外展	内收	外旋	内旋
对照组	40	治疗前	29.5±3.1	13.7±3.1	38.6±3.1	17.4±5.1	13.6±3.1	46.2±7.1
		治疗后	63.3±9.3 ¹⁾	29.3±3.3 ¹⁾	55.3±5.3 ¹⁾	30.7±6.1 ¹⁾	33.7±4.1 ¹⁾	65.3±8.3 ¹⁾
观察组	40	治疗前	30.4±2.5	14.2±2.5	39.2±2.5	16.8±4.5	14.2±2.5	45.8±6.5
		治疗后	85.7±8.4 ¹⁾²⁾	52.7±4.4 ¹⁾²⁾	67.7±6.4 ¹⁾²⁾	52.3±6.3 ¹⁾²⁾	50.3±4.9 ¹⁾²⁾	77.4±8.7 ¹⁾²⁾

注:与治疗前比较,1) $P<0.05$;与对照组比较,2) $P<0.05$ 。
Note: Compared with before treatment, 1) $P<0.05$; Compared with the control group, 2) $P<0.05$.

表 5 2 组临床疗效比较
Table 5 Comparison of clinical efficacy between two groups

组 别	n	治愈	显效	有效	无效	总有效率/%
对照组	40	6	20	11	3	67.5
观察组	40	3	19	15	13	92.5 ¹⁾

注:与对照组比较,1) $P<0.05$ 。
Note: Compared with the control group, 1) $P<0.05$.

可出现患肢活动严重受限,疼痛与肿胀愈加明显,最终患肢骨质发生变化,手部出现永久性的畸形,关节活动度永久丧失,导致患者残疾。而患者手功能障碍将严重影响日常生活自理能力,降低生活质量,给患者及其家庭带来沉重的负担。近年来,手功能康复治疗是神经康复领域关注的重点与难点之一^[17]。目前,对于 SHS 的发病机制尚不明确,交感神经功能的改变、末梢神经血管障碍、脑卒中后长期不活动引起的废用性萎缩、遗传因素、环境心理因素等均可能与 SHS 的发生与发展有关。因此,早期临床发现并积极进行康复治疗对于 SHS 的预后尤为重要。

4.1 改良复方消胀散可有效提高脑梗死后 SHS 患者日常生活能力

有研究显示物理疗法、药物疗法在一定程度上可缓解 SHS 患者肩手关节的肿胀与疼痛,但目前尚没有足够的证据证明这些疗法具有延缓疾病进展的作用^[18]。也有研究显示康复治疗、运动疗法可有效加快血液循环,缓解肌肉挛缩状态,增加关节活动度,防止关节粘连,改善疼痛及肿胀^[19],此外还能加快大脑的代偿能力,促进脑功能重塑,促进肢体运动功能的恢复。但康复训练和运动疗法的疗效受多重因素影响^[20],见效较慢,患者康复的自信心不足,康复治疗依从性不够,康复疗效受到较大影响。

本研究在常规康复治疗的基础上联合应用改良复方消胀散进行局部熏洗,结果显示,与治疗前

比较,观察组治疗 1 个月后 FMA-U 评分、MBI 评分明显升高,这提示改良复方消胀散熏洗可有效促进脑梗死后 SHS 患者上肢运动功能逐步恢复,从而提高日常生活活动能力。这与改良复方消胀散局部熏洗具有扩张血管、舒缓肌肉紧张,使药物经皮肤直抵病灶,改善局部血液循环,促进静脉和淋巴回流,消除肿胀,缓解疼痛和提高肢体功能的研究结果一致^[4]。中医学将脑梗死后 SHS 归为“中风”范畴,主要病机是脉络瘀滞、气血不通,因此治疗应以通经活络,化瘀止痛为主^[21]。改良复方消胀散方中生黄芪益气健脾,温经通络,利水消肿生肌;当归、川芎、红花、豨莶草、地龙、蜈蚣、水蛭活血通经,行气止痛;白芷解表散寒,祛风消肿止痛;生大黄逐瘀通经。全方共奏益气活血,温经通络、消肿止痛之功效。中药熏洗的温热作用与药物的特殊作用相结合,共同调节神经、肌肉、血管及结缔组织等,减轻疼痛,消除肿胀,改善神经肌肉状态,从而提高患者参与康复训练的积极性;患者手部水肿明显好转,上肢运动功能持续改善,有助于提高患者日常生活能力。

4.2 改良复方消胀散联合针刺可有效改善脑梗死后 SHS 患者上肢运动功能

脑梗死后 SHS 发病机制复杂,常规的单一疗法往往疗效不佳。有系统评价研究显示针刺具有疏经活络、通经止痛、调和气血阴阳之功,是治疗 SHS 的安全、有效方法之一^[22]。本研究在常规康复治疗基础上,采用改良复方消胀散联合针刺治疗脑梗死后 SHS 患者,研究结果显示,与对照组比较,观察组治疗 1 个月后 VAS 评分、水肿程度明显更低,肩关节活动度、临床有效率明显更高,这提示改良复方消胀散联合针刺可有效改善脑梗死后 SHS 患者上肢运动功能。本研究应用醒脑开窍针法针刺极泉下穴可活血通络;针刺尺泽穴可清热化湿;针刺内关穴可宁心安神,理气止痛;诸穴同刺,达醒脑开窍、通

经活络、安神定智之效。有研究显示,醒脑开窍针法可改善脑梗死缺血区域微血管系统的形态,保护脑细胞的功能,改善神经递质水平,并减轻氧自由基损伤及抑制钙离子超载,延缓神经元死亡,促进神经网络重建,从而改善肢体运动功能,提高日常生活活动能力^[23]。肩髃穴、肩髃穴、臂臑穴、曲池穴、手三里穴、合谷穴、外关穴等穴位,均属经络所过,主治所及,中医针灸寻经取穴,针刺经络腧穴,“制其神,令气易行”,最终气血运行通畅达到止痛的效果。此外,加之中药复方熏洗疗法的独特作用,能更好地促进患肢血液循环,更有利于针刺效果的发挥。

5 小 结

改良复方消胀散熏洗联合针刺治疗脑梗死后SHS患者,可有效改善患者手部肿胀程度,缓解疼痛;提高上肢运动功能、肩关节活动度和日常生活能力。该疗法操作简便、费用较为低廉、不良反应少,患者易于接受,值得临床推广。但本研究存在研究时间较短、样本量小、分组不够精细化等不足之处,在下一步研究中将开展大样本随机对照临床试验,并加强出院后随访工作使研究更加完整、可信,为脑卒中后肩手综合征的康复治疗提供可靠依据。

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Effect of Modified Compound Xiaozhang Powder for Patients with Shoulder-Hand Syndrome after Cerebral Infarction by Using Fumigation and Washing combined with Acupuncture

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ABSTRACT Objective: To observe the clinical efficacy of modified compound Xiaozhang powder by fumigation and washing combined with acupuncture in the treatment of shoulder-hand syndrome after cerebral infarction. **Methods:** Eighty patients with shoulder-hand syndrome after cerebral infarction were selected in Huairou District Hospital of Traditional Chinese Medicine. The patients were randomly divided into control group ($n=40$) and observation group ($n=40$). The control group was given routine medical treatment and rehabilitation training. Rehabilitation training 20-30 min a time, one time per day, five times per week, continuous treatment for one month. The observation group was treated with modified compound Xiaozhang powder by using fumigation and washing combined with acupuncture on the basis of the control group. Fumigation and washing treatment: modified compound Xiaozhang powder plus water decoction, leaving 1 500-2 000 mL of traditional Chinese medicine decoction, put into a constant temperature bucket, when the water temperature is reduced to 40-50°C, put the hemiplegic swollen hand in the medicine solution, while soaking, dipping liquid from the elbow to the wrist while rubbing to knead to the interphalangeal joint, 20 minutes a time, two times per day, five days per week, continuous treatment for one month. Acupuncture treatment: using Xingnaokaqiao acupuncture method to acupuncture at Jiquanxia, Chize, Neiguan acupoint, without leaving needle; acupuncture at Jianyu, Jianliao, Quchi acupoint, directly needling 0.5-1 inch, twisting and tonifying method for one minute, retaining needle 20 minutes a times, once a day, once every other day, three times a week, continuous treatment for one month. The upper limb motor function was evaluated by the Fugl-Meyer motor function rating scale (FMA-U), the activities of daily living was evaluated by the Modified barthel index (MBI), the pain degree of the affected limbs was evaluated by the pain visual analogue scale (VAS), the shoulder range of motion (ROM) was measured by protractor, and the degree of hand edema was measured by drainage method. **Results:** Compared with before treatment, FMA-U, MBI and shoulder range of motion in the two groups after treatment for one month increased significantly, while VAS score and the degree of hand edema difference decreased significantly, and the difference was statistically significant ($P<0.05$). Compared with the control group, the FMA-U, MBI, shoulder ROM of the observation group after treatment for one month were significantly higher, the VAS score and the degree of hand edema difference in the observation group were significantly lower, and the difference was statistically significant ($P<0.05$). The total effective rate in the observation group (92.5%) was significantly higher than that in the control group (67.5%), and the difference was statistically significant ($P<0.05$). **Conclusion:** Modified compound Xiaozhang powder by using fumigation and washing combined with acupuncture can effectively improve the degree of hand swelling and relieve pain of patients with shoulder-hand syndrome after cerebral infarction, improve upper limb motor function, shoulder ROM and activities of daily living, and it has a good curative effect.

KEY WORDS cerebral infarction; shoulder hand syndrome; modified compound Xiaozhang powder; fumigation and washing; acupuncture

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Effect of Extracorporeal Shock Wave combined with Rehabilitation Training on Patients with Chondromalacia Patellae

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ABSTRACT Objective: To observe the clinical effect of extracorporeal shock wave combined with rehabilitation training on patients with chondromalacia patellae (CP). **Methods:** Sixty patients with CP were treated in Weihaiwei People's Hospital were randomly divided into the control group ($n=20$), the shock wave group ($n=20$) and the combined group ($n=20$). The control group were given routine rehabilitation training, five times a week, continuous treatment for eight weeks. The shock wave group was treated with extracorporeal shock wave therapy. The D20 was probed to pulse the quadriceps femoris, iliotibial band, tibialis anterior muscle, hamstring muscle and triceps muscle of the leg with the frequency of 14 Hz and the intensity of 1.8-2.5 Bar. Each muscle was pulsed 800-1000 times to relax the muscles. According to the frequency of 15 Hz and the intensity of 1.5-2.5 Bar, the D15 was used to move the patella along the edge of the patella or the condyle of the femur. During the pulse, the patella was pushed to the opposite side, so that the shock wave could reach the cartilage surface of the patella as far as possible. The pulse at each point was 300 times, one time a week, continuous treatment for eight weeks. The combined group was given rehabilitation training and divergent extracorporeal shock wave therapy, and the specific treatment method and course of treatment were the same as those in the control group and shock wave group. Visual analogue score (VAS) was used to evaluate the pain improvement, Lysholm scale was used to evaluate knee joint function; Magnetic resonance imaging (MRI) was used to evaluate the staging of patellar osteomalacia according to Recht criteria; The curative effect was evaluated according to the curative effect evaluation standard of chondromalacia patellae. **Results:** Compared with before treatment, the VAS score decreased significantly and the Lysholm knee joint function score increased significantly in the three groups after treatment for eight weeks, and the difference was statistically significant ($P<0.05$). Compared with the control group after treatment for eight weeks, the VAS score in the combined group was significantly lower, and clinical effective rate in the combined group was significantly higher, Compared with the control group after treatment for eight weeks and follow up after discharge for three months, the Lysholm knee joint function score in the combined group were significantly higher, and the difference was statistically significant ($P<0.05$). Compared with the shock wave group, the VAS score in the combined group after follow up discharge for three months was significantly lower, and the Lysholm knee joint function score and clinical effective rate were significantly higher, and the difference was statistically significant ($P<0.05$). **Conclusion:** Extracorporeal shock wave combined with rehabilitation training for CP can effectively reduce the pain degree of patients and improve the function of knee joint. It is worthy of clinical application with the quick and long-term clinical effect.

KEY WORDS chondromalacia patellae; shock wave therapy; rehabilitation training; knee joint function

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