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滑膜炎颗粒联合中药熏蒸治疗膝关节创伤性滑膜炎患者的 临床疗效及机制*

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摘要 目的:研究滑膜炎颗粒联合中药熏蒸对膝关节创伤性滑膜炎患者临床疗效及其可能机制。**方法:**选取2014年7月至2015年7月我院接诊的膝关节创伤性滑膜炎患者80例作为本次研究对象并将其随机分为两组。对照组采用滑膜炎颗粒治疗,观察组采用滑膜炎颗粒联合中药熏蒸治疗,观察两组患者治疗前后视觉模拟疼痛(VAS)、膝关节功能(HSS)评分,症状体征积分,血清肿瘤坏死因子- α (TNF- α)、白介素-1 β (IL-1 β)、白介素-6(IL-6)水平的变化及治疗疗效。**结果:**治疗后,观察组VAS评分显著低于对照组[(2.30 $\pm$ 0.40)分 vs (4.69 $\pm$ 0.42)分]($P < 0.05$),HSS评分显著高于对照组[(90.28 $\pm$ 6.97)分 vs (69.47 $\pm$ 5.83)分]($P < 0.05$),疼痛、肿胀、活动度、临床症状积分均显著低于对照组($P < 0.05$),血清TNF- α 、IL-1 β 、IL-6水平均显著低于对照组($P < 0.05$),总有效率明显高于对照组[90.00%(36/40) vs 70.00%(28/40)]($P < 0.05$)。**结论:**滑膜炎颗粒联合中药熏蒸治疗膝关节创伤性滑膜炎临床效果显著优于单用滑膜炎颗粒治疗,可能与其有效抑制TNF- α 、IL-1 β 、IL-6的表达有关。

关键词:滑膜炎颗粒; 中药熏蒸; 膝关节创伤性滑膜炎; 白细胞介素-1 β ; 肿瘤坏死因子- α ; 白介素-6

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Efficacy and Mechanism of Huamoyan Granules Combined with Chinese Medicine Fumigation in Treatment of Traumatic Synovitis of Knee Joint*

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ABSTRACT Objective: To study the efficacy and mechanism of huamoyan granules combined with chinese medicine fumigation in the treatment of traumatic synovitis of knee Joint. **Methods:** 80 patients of traumatic synovitis of knee joint who were treated from March 2014 to March 2015 in our hospital were selected as research objects and randomly divided into two groups. The control group was treated with huamoyan granules, while the observation group was treated with huamoyan granules combined with chinese medicine fumigation. Then the visual analogue pain(VAS), knee joint function (HSS) score, symptom and sign score, serum tumor necrosis factor- α (TNF- α), interleukin-1 β (IL-1 β), interleukin-6(IL-6) levels, therapeutic efficacy before and after treatment were compared between two groups. **Results:** After treatment, the VAS score in the observation group was significantly lower than that of the control group[(2.30 $\pm$ 0.40)score vs (4.69 $\pm$ 0.42)score]($P < 0.05$); HSS score was significantly higher than that of the control group [(90.28 $\pm$ 6.97) score vs (69.47 $\pm$ 5.83) score]($P < 0.05$). The pain, swelling, activity, clinical symptom score were lower than those of the control group ($P < 0.05$), the serum TNF- α , IL-1 β , IL-6 were lower than those of the control group ($P < 0.05$). the total effective rate of observation group was statistically higher than that of the control group[90.00%(36/40) vs 70.00%(28/40)]($P < 0.05$). **Conclusions:** Huamoyan granule combined with Herbal Fumigation was better than single Huamoyan granule in the treatment of traumatic synovitis of knee joint, which might be related to decrease the TNF- α , IL-1 β , IL-6 levels.

Key words: Huamoyan granules; Chinese medicine fumigation; Traumatic synovitis of knee joint; Inter-leukin-1 β ; Tumor necrosis factor- α ; Interleukin-6

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引言

滑膜炎为非感染性炎症反应,多发生于膝关节内部损伤后,是临床上常见的骨科疾病。患者膝关节创伤后若未得到及

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时的有效治疗,可导致滑膜炎发生,会出现滑膜水肿渗出,粘连和肥厚,软骨发生萎缩,反复出现膝关节积液,对关节功能造成影响,降低患者的生活质量^[12]。有研究表明炎症因子参与了该病的发展过程,会破坏人体组织,形成水肿,可加重膝关节创伤性滑膜炎患者病情的发展,IL-1 β 是一种致炎细胞因子,在机体正常情况下含量较低,但当机体处于病理状态下时会异常升高,可加剧患者的病情,在膝关节创伤性滑膜炎的发生、发展中起促进作用^[3]。近年来研究认为,中医在治疗该病上有一定的优势,滑膜炎颗粒为多种中药制成的方剂,能够活血祛瘀,可有效的改善患者的病况;中药熏蒸能够通过局部直接用药,借助热力来达到消肿的功效。因此,本研究探讨了滑膜炎颗粒联合中药熏蒸对膝关节创伤性滑膜炎患者临床疗效及其可能机制。

1 资料与方法

1.1 一般资料

选取2014年7月至2015年7月我院接诊的膝关节创伤性滑膜炎患者80例作为本次研究对象。纳入标准^[4]:①均符合膝关节创伤性滑膜炎诊断标准,中医辨证为"气滞血瘀证";②20~70岁;③无心、肝、肾功能疾病;④近期内关节腔未注射激素;排除标准:①妊娠期或哺乳期;②患有代谢性骨病患者;③患有韧带损伤、脱位;④患有精神疾病。按照随机数表法分为观察组和对照组,观察组40例,男23例,女17例,年龄21~70岁,平均年龄(52.48 $\pm$ 3.02)岁,其中左膝26例,右膝14例;急性挫伤6例,暴力打击15例,有劳损史19例;对照组40例,男24例,女16例,年龄20~70岁,平均年龄(51.76 $\pm$ 3.10)岁,其中左膝24例,右膝16例;急性挫伤7例,暴力打击13例,有劳损史20例。两组患者性别、年龄、病因构成比较差异均无统计学意义($P>0.05$),具有可比性。

1.2 治疗方法

对照组患者采用滑膜炎颗粒(规格:12 g/袋;生产厂家:神

威药业(张家口)有限公司;批号:20140610)进行治疗,每次1袋,每天3次,治疗疗程为4周。观察组患者在对照组的基础上,加用中药熏蒸进行治疗,15 g桑寄生、10 g枳壳、10 g红花、20 g丹参、10 g川乌、10 g牛膝、12 g桑枝、10 g桂枝、10 g瓜络、10 g苏木、15 g伸筋草、15 g透骨草、15 g威灵仙,将以上药物装入纱布袋中进行煎煮10分钟,等待备用,在使用前需将其在锅中你蒸10分钟,准备3~4个药袋替换使用,将药袋放置于患者的膝关节处,在熏蒸治疗时每30~40分钟适当保温一次,每天1次,药袋3~4天更换一次,治疗疗程为4周。

1.3 观察指标

观察两组患者治疗后VAS、HSS评分,症状体征积分,TNF- α 、IL-1 β 、IL-6水平,治疗疗效。VAS(视觉模拟疼痛)评分标准:以0~10分表示,分值越低,疼痛约轻。HSS(膝关节功能)评分:满分100分,分值越高越好。症状体征积分:分值越低,病情越轻。TNF- α 、IL-1 β 、IL-6检测方法:酶联免疫吸附法。

1.4 疗效评价

临床症状完全消失,关节功能活动正常为治愈;临床症状明显改善,关节功能活动正常,劳累后仍疼痛,自行缓解为显效;临床症状有所改善,肿胀、疼痛减轻为有效;临床症状无变化或反复发作,疼痛肿胀未减轻为无效。

1.5 统计学分析

采用SPSS11.0软件统计分析处理,计数资料采用 χ^2 检验,计量资料采用t检验,以 $P<0.05$ 为差异有统计学意义。

2 结果

2.1 两组患者治疗前后VAS、HSS评分比较

治疗前,两组患者的VAS、HSS评分比较差异无统计学意义($P>0.05$);治疗后,两组患者VAS评分较治疗前显著降低,HSS评分均较治疗前明显升高($P<0.05$),且观察组VAS评分显著低于对照组,HSS评分显著高于对照组($P<0.05$),见表1。

表1 两组患者治疗前后VAS、HSS评分比较($\bar{x}\pm s$,分)

Table 1 Comparison of the VAS and HSS scores between the two groups before and after treatment($\bar{x}\pm s$, score)

Groups	Time	VAS	HSS
Observation group(n=40)	Before treatment	6.24 $\pm$ 1.23	57.03 $\pm$ 4.82
	After treatment	2.30 $\pm$ 0.40**	90.28 $\pm$ 6.97**
Control group(n=40)	Before treatment	6.30 $\pm$ 1.26	58.21 $\pm$ 4.96
	After treatment	4.69 $\pm$ 0.42*	69.47 $\pm$ 5.83*

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

2.2 两组患者治疗前后症状体征积分比较

治疗前,两组患者各症状体征积分比较差异无统计学意义($P>0.05$)。治疗后,两组患者各症状体征积分均较治疗前显著降低($P<0.05$),且观察组疼痛、肿胀、活动度、临床症状积分均明显低于对照组($P<0.05$),见表2。

2.3 两组患者治疗前后血清TNF- α 、IL-1 β 、IL-6水平比较

治疗前,两组患者血清TNF- α 、IL-1 β 、IL-6水平比较差异无统计学意义($P>0.05$)。治疗后,两组患者血清TNF- α 、IL-1 β 、IL-6水平均较治疗前显著降低($P<0.05$),且观察组TNF- α 、IL-1 β 、IL-6水平均明显低于对照组($P<0.05$),见表3。

2.4 两组患者的治疗疗效比较

观察组总有效率为90%,显著高于对照组(70%, $P<0.05$),见表4。

3 讨论

创伤性膝关节滑膜炎主要发病季节在夏秋,患者膝关节逐渐出现肿胀,关节周围压痛,膝关节屈曲不适或受限^[9]。病发原因有外伤和慢性劳损,外伤主要是由于创伤、挫伤所致,滑膜受到刺激后,白细胞和巨噬细胞浸润,血管扩张,从而导致白细胞及血浆外渗,滑膜也分泌失调后,会产大量的粘蛋白,引起患者滑膜腔堆积积液,导致滑膜损伤破裂,发生出血,患者关节腔内压升高,导致代谢物堆积^[7]。而慢性劳损主要是由于急性治疗

失败而形成^[8]。临床上西医治疗创伤性膝关节滑膜炎的方法主要为抽取积液,给患者膝关节进行局部注射,采取抗生素控制病情,但若炎症未彻底消除,其积液会越抽越多。随着病情的变化,最终可形成关节退行性病变^[9]。

表 2 两组患者治疗前后症状体征积分比较($\bar{x} \pm s$, 分)

Table 2 Comparison of the scores of symptoms and signs between two groups of patients before and after treatment($\bar{x} \pm s$, score)

Groups	Time	Pain	Swelling	Activity	Clinical symptom
Observation group (N=40)	Before treatment	9.37± 2.10	8.72± 2.03	7.50± 2.36	26.75± 4.03
	After treatment	2.43± 0.71* [#]	2.19± 0.62* [#]	1.27± 0.30* [#]	5.48± 0.82* [#]
Control group(N=40)	Before treatment	9.42± 2.12	8.70± 2.01	7.45± 2.31	27.07± 4.10
	After treatment	5.06± 0.80*	4.97± 0.73*	4.28± 1.05*	13.62± 2.97*

Note: Compared with before treatment, *P<0.05; Compared with the control group, [#]P<0.05.

表 3 两组患者治疗前后血清 TNF-α、IL-1β、IL-6 水平比较($\bar{x} \pm s$)

Table 3 Comparison of the serum TNF- alpha, IL-1 beta and IL-6 levels between two groups of patients before and after treatment($\bar{x} \pm s$)

Groups	Time	TNF-α(ng/mL)	IL-1β(pg/mL)	IL-6(pg/mL)
Observation group(n=40)	Before treatment	2.89± 0.81	6.69± 1.29	29.04± 7.83
	After treatment	0.60± 0.12* [#]	2.16± 0.56* [#]	10.21± 3.02* [#]
Control group(n=40)	Before treatment	2.90± 0.83	7.02± 1.34	28.96± 7.80
	After treatment	2.04± 0.60 [#]	5.79± 1.80*	17.02± 4.68*

Note: Compared with before treatment, *P<0.05; Compared with the control group, [#]P<0.05.

表 4 两组患者治疗疗效比较[例(%)]

Table 4 Comparison of the therapeutic effects between two groups of patients[n(%)]

Groups	Cure	Partially cured	Effective	Invalid	Total effective rate
Observation group(n=40)	30(75.00)	5(12.50)	3(7.50)	4(10.00)	36(90.00) [#]
Control group(n=40)	19(47.50)	4(10.00)	7(17.50)	12(30.00)	28(70.00)

Note: Compared with the control group, [#]P<0.05.

在中医的范畴中,该病属于"痹病"、"伤筋病",主要是由于跌打所致损伤,导致患者气血紊乱,膝关节淤血阻碍,新血不生,使得风寒湿邪趁虚而入,从而使膝关节气血阻滞情况越发严重^[10,11],治疗应以祛寒除湿、温经通络为主^[12]。滑膜炎颗粒中夏枯草清肝、散结、利尿的功效;女贞子能够补益肝肾;清虚热;功劳叶能够清虚热、益肝肾、祛风湿;黄芪具有益气固表、利水消肿的作用;防己可利湿,除风;薏苡仁具有清热,利湿的功效;土茯苓可除湿,解毒,通利关节;丝瓜络能够通经活络,清热解毒,利尿消肿;泽兰可活血,行水;丹参能够祛瘀止痛,活血通经;当归具有补血、活血的作用;川牛膝能够活血通经,祛风除湿,通利关节;希莖草可消肿,散结^[13]。诸药合用可清热利湿,活血通络,降低炎症因子的表达,减轻白细胞的浸润,降低滑液内粘蛋白含量,对患者关节腔内组织进行调节,有利于膝关节恢复^[14]。

在患者膝关节受到创伤后,由于风寒湿邪趁虚而入,膝关节血气无法正常运行,从而导致局部疼痛无法改善^[15]。中药熏蒸是临床上一种传统疗法,其桑寄生可祛风湿,通经络,益血;枳壳能够破气、消积;川乌可祛风除湿,温经止痛;红花具有活血通经,去瘀止痛的作用;桑枝可祛风湿,利关节,行水气;牛膝能够强筋骨、活血通经;桂枝可温经通脉;瓜络能够通经活络,清热解毒,利尿消肿;丹参能够活血、祛瘀止痛;苏木可行血、破瘀、消肿、止痛;威灵可仙祛风除湿;通络止痛;伸筋草具有祛风散寒。除湿消肿,舒筋活络的功效;透骨草可祛风胜湿、活血止痛^[16]。将其诸药煎煮后直接作用于患者的膝关节有利于局部直

接吸收,借助热力直达病灶,能够恢复患者的滑膜损伤,改善关节功能,具有温经通络,消肿止痛的效果,且可长期进行大面积治疗^[17]。有研究表明联合治疗疗效较单一治疗效果更佳。在本研究中,采用滑膜炎颗粒联合中药熏蒸治疗的患者 VAS 评分、症状体征积分小于采用滑膜炎颗粒治疗的患者, HSS 评分大于采用滑膜炎颗粒治疗的患者,总有效率为 90.00%,也显著高于滑膜炎颗粒治疗的患者(70.00%),提示联合用药较单一用药改善临床症状效果更显著。

IL-1β 由巨噬细胞产生,低浓度 IL-1β 能够促进 B 细胞增殖和分泌抗体,具有免疫调节的作用,高浓度 IL-1β 会诱导肝脏急性期蛋白合成,可加速病情的发展^[18]。总体来说,破坏大于防御^[19]。IL-6 是常见且多功能的炎症细胞,可促进多种炎症细胞生长并抑制正常细胞生长,直接对内皮细胞造成损害,增加内皮细胞的通透性^[19]。TNF-α 是一种单核因子,可刺激患者内皮细胞增生以及内皮细胞粘附分子表达^[20]。本研究中,采用滑膜炎颗粒联合中药熏蒸治疗的患者血清 TNF-α、IL-1β、IL-6 水平平均显著低于单一滑膜炎颗粒治疗的患者,提示其可能通过有效抑制炎症反应改善膝关节创伤性滑膜炎患者的疗效。

综上所述,滑膜炎颗粒联合中药熏蒸治疗膝关节创伤性滑膜炎临床效果显著优于单一滑膜炎颗粒治疗,可能与其有效抑制 TNF-α、IL-1β、IL-6 的表达有关。

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