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## 蒲地蓝配合揸针治疗小儿颈部淋巴结炎对 CRP 表达的影响 \*

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**摘要 目的:**探讨蒲地蓝配合揸针治疗小儿颈部淋巴结炎对 C-反应蛋白(C-reactive protein, CRP)表达的影响。**方法:**2017 年 8 月到 2019 年 6 月选择在本院诊治的小儿颈部淋巴结炎 84 例作为研究对象, 根据随机数字表法把患儿分为联合组与对照组各 42 例。对照组给予蒲地蓝治疗, 联合组给予蒲地蓝配合揸针治疗, 疗程都为 14 d, 记录治疗效果与 CRP 表达变化情况。**结果:**治疗后联合组的总有效率为 97.6%, 显著高于对照组的 85.7% ( $P<0.05$ )。联合组的局部消肿时间、局部压痛消退时间、发热消退时间都显著少于对照组 ( $P<0.05$ )。两组治疗后的血清 CRP 值低于治疗前, 联合组低于对照组, 对比差异都有统计学意义 ( $P<0.05$ )。两组治疗后的 CD4<sup>+</sup>T 淋巴细胞比例都高于治疗前, 联合组高于对照组, 对比差异都有统计学意义 ( $P<0.05$ ), 两组治疗前后 CD8<sup>+</sup>T 淋巴细胞比例对比差异无统计学意义 ( $P>0.05$ )。**结论:**蒲地蓝配合揸针治疗小儿颈部淋巴结炎能抑制 CRP 的释放, 提高小儿的免疫功能, 从而促进临床症状的消失, 提高总体治疗效果。

**关键词:**蒲地蓝; 揸针; 小儿颈部淋巴结炎; C-反应蛋白; 免疫功能

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## Effects of Pudilan Combined with Acupuncture on the Expression of CRP in Children with Cervical Lymphadenitis\*

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**ABSTRACT Objective:** To investigate the effect of Pudilan combined with acupuncture on cervical lymphadenitis in children on the expression of C-reactive protein (CRP). **Methods:** From August 2017 to June 2019, 84 cases children with cervical lymphadenitis diagnosed and treated in our hospital were selected as the research object. All the cases were divided into the combined group and control group of 42 cases in each groups accorded to the random number table method. The control group were given Pudilan treatment, and the combined group were given Pudilan combined with acupuncture treatment for 14 days. The treatment effects and CRP expression changes were recorded. **Results:** The total effective rates of the combined group were 97.6 % after treatment, which were significantly higher than 85.7 % of the control group ( $P<0.05$ ). The local swelling time, local tenderness remission time and fever remission time in the combined group were significantly shorter than those in the control group ( $P<0.05$ ). The serum CRP value of the two groups after treatment were lower than that before treatment, and the combined group were lower than that of the control group, compared the difference were statistically significant ( $P<0.05$ ). After treatment, the proportion of CD4<sup>+</sup>T lymphocytes in both groups were higher than before treatment, and the combined group were higher than the control group, compared the difference between the two groups were statistically significant ( $P<0.05$ ). There were no significant difference in the proportion of CD8<sup>+</sup>T lymphocytes between the two groups before and after treatment ( $P>0.05$ ). **Conclusion:** Pudilan combined with acupuncture in the treatment of cervical lymphadenitis in children can inhibit the release of CRP and improve the immune function of children, thereby promote the disappearance of clinical symptoms and improve the overall treatment effects.

**Key words:** Pudilan; Needle acupuncture; Cervical lymphadenitis; Children; C-reactive protein; Immune function

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## 前言

颈部淋巴结炎是好发于小儿的临床疾病,主要在于颈部有丰富的淋巴结,多种因素可引起颈部淋巴结炎发生炎性改变<sup>[1,2]</sup>。该病的发病季节为冬春季节,诱发病因包括肝胃火毒、龋齿、细菌感染、病毒感染等<sup>[3,4]</sup>。特别是小儿淋巴结小叶位置尚不清晰,身体各项机能尚未发育完全,长期的淋巴结感染可导致炎症持续扩散,严重影响下可对患儿的生命安全产生威胁<sup>[5,6]</sup>。中医认为颈部淋巴结炎是感受风邪或时行疫毒,引起功能失调导致的一种外感病症,根据证型的不同,治疗原则分别为宣肺解表、清热、散结<sup>[7]</sup>。蒲地蓝口服液属于中药制剂,主要成分包括黄芩、板蓝根、苦地丁、蒲公英等中草药,具有抗炎消肿、清热解毒等功效<sup>[8,9]</sup>。揲针全称为揲针型皮内针,具有通经止痛、行气活血等功效,且具有操作简单、安全性高、起效快等优势<sup>[10,11]</sup>。CRP 是一种主要由肝脏合成的蛋白质,正常人血清中含量极微,当机体有炎症、感染、创伤时 CRP 会升高<sup>[12,13]</sup>。其作为一种非特异性的组织损伤的产物,可对机体全身炎症反应进行评估,从而能够辅助

判断患儿的病情与预测预后<sup>[14]</sup>。本文具体探讨了蒲地蓝配合揲针治疗小儿颈部淋巴结炎对 CRP 表达的影响,以明确两者联合治疗的效果,为临床治疗提供参考。现总结报道如下。

## 1 资料与方法

### 1.1 研究对象

2017 年 8 月到 2019 年 6 月选择在本院诊治的颈部淋巴结炎小儿 84 例,纳入标准:年龄 3~8 岁;符合颈部淋巴结炎的诊断标准,超声显示颈部淋巴结存在包块与液性暗区;患儿家长知情同意本研究;入院前 2 w 内未使用过抗生素和 / 或抗病毒药物进行治疗。排除标准:临床资料缺乏者;合并免疫系统疾病和内分泌疾病等;伴发精神疾病的患儿;患儿存在肝肾功能不全;其他引起淋巴结肿大的疾病;其他研究者认为不适合入选本试验者。

根据随机数字表法把患儿分为联合组与对照组各 42 例,两组患儿的年龄、性别、包块直径、初诊体温、体重、身高等对比差异无统计学意义( $P>0.05$ ),见表 1。

表 1 两组一般资料对比

Table 1 Comparison of two sets of general information

| Groups        | n  | Average age (years) | Gender (M/F) | Mass diameter (cm) | Initial Temperature(°C) | BMI (kg)   | Height (cm)  |
|---------------|----|---------------------|--------------|--------------------|-------------------------|------------|--------------|
| Joint group   | 42 | 6.44±0.22           | 22/20        | 4.33±0.12          | 37.87±1.14              | 27.87±1.44 | 132.09±10.33 |
| Control group | 42 | 6.48±0.14           | 21/21        | 4.28±0.33          | 38.19±1.02              | 27.89±1.11 | 134.09±8.37  |

### 1.2 治疗方法

对照组:给予蒲地蓝治疗,口服蒲地蓝消炎口服液(国药准字 Z20030095,济川药业集团有限公司),蒲地蓝用量:3~5 岁 5 mL/次,3 次/d;5~8 岁,10 mL/次,2 次/d,疗程为 14 d。

联合组:在对照组治疗的基础上给予揲针治疗,揲针直径为 0.2 mm,长度为 0.6 mm;以双侧翳风、大椎、身柱、淋巴结压痛点作为进针穴位。采用 1%~2% 的碘伏消毒皮肤,75%酒精脱碘,待皮肤干燥后,将揲针拆下,针尖对准穴位垂直进针,向患儿穴位皮肤迅速轻巧插入并轻轻按压,保证圆环平整地粘附于施针穴位皮肤中。日间每间隔 2 h 进行 1 次按压,将每次按压时间控制在 60 s 以内,6~8 次/d,夜间睡眠时不进行按压,留针 2 d,然后再进行揲针治疗,疗程也为 14 d。

### 1.3 观察指标

(1)疗效标准:痊愈:外周血象恢复正常,颈部淋巴结肿大消失;显效:外周血象未完全恢复正常,但已接近正常,颈部淋巴结肿大明显好转;有效:颈部淋巴结肿大好转,外周血象改变不明显;无效:未达到上述标准甚或加重。(痊愈+显效+有效)/组内例数×100.0%=总有效率。(2)记录两组的局部消肿时间、

局部压痛消退时间、发热消退时间。(3)所有患儿在治疗前后抽取肘静脉血 3 mL,平分为两管,第一管不抗凝,静置 2 h 后 3000 rpm 离心 10 min 分离上层血清,-20℃冰箱内保存,采用快速免疫透射比浊法检测血清 CRP 含量。另外一个进行抗凝,静置 2 h 后 3000 rpm 离心 10 min 分离下层全血组织,采用流式细胞术分别检测 T 淋巴细胞亚群 -CD4<sup>+</sup>、CD8<sup>+</sup> 细胞比例。

### 1.4 统计学方法

选择 SPSS 20.00 软件进行分析,符合正态性的计量、计数资料用均数±标准差、%等表示,对比采用 t 检验、 $\chi^2$  检验等,相关性分析采用 Spearman 分析,多因素分析采用 Logistic 回归分析,检验水准为  $\alpha=0.05$ 。

## 2 结果

### 2.1 总有效率对比

治疗后联合组的总有效率为 97.6%(41/42),显著高于对照组的 85.7%(36/42),经过对比差异有统计学意义( $P<0.05$ ),见表 2。

表 2 两组总有效率对比(例,%)

Table 2 Comparison of total effective rate between two groups (n, %)

| Groups        | n  | Recovery | Marked effect | Effect | Invalid | Total efficiency |
|---------------|----|----------|---------------|--------|---------|------------------|
| Joint group   | 42 | 35       | 3             | 3      | 1       | 41(97.6)*        |
| Control group | 42 | 19       | 11            | 6      | 6       | 36(85.7)         |

Note: \* $P<0.05$  compared with the control group.

2.2 临床症状改善时间 间都显著短于对照组,经过对比差异有统计学意义( $P<0.05$ ),见联合组的局部消肿时间、局部压痛消退时间、发热消退时 表 3。

表 3 两组临床症状改善时间对比( $d, \bar{x} \pm s$ )

Table 3 Comparison of clinical symptom improvement time between the two groups ( $d, \bar{x} \pm s$ )

| Groups        | n  | Local detumescence time | Local tenderness regression time | Fever fade time |
|---------------|----|-------------------------|----------------------------------|-----------------|
| Joint group   | 42 | 4.22±0.18*              | 6.02±0.32*                       | 3.22±0.13*      |
| Control group | 42 | 5.49±0.22               | 6.98±0.15                        | 4.01±0.11       |

2.3 血清 CRP 值变化对比 组,对比差异都有统计学意义( $P<0.05$ ),见表 4。  
两组治疗后的血清 CRP 值低于治疗前,联合组低于对照

表 4 两组治疗前后血清 CRP 值变化对比( $mg/L, \bar{x} \pm s$ )

Table 4 Comparison of changes in serum CRP values between the two groups before and after treatment ( $mg/L, \bar{x} \pm s$ )

| Groups        | n  | Pre-treatment | After treatment        |
|---------------|----|---------------|------------------------|
| Joint group   | 42 | 14.66±1.49    | 4.09±0.22**            |
| Control group | 42 | 14.21±1.11    | 7.82±0.11 <sup>#</sup> |

Note: \* $P<0.05$  compared with the control group, <sup>#</sup> $P<0.05$  compare with the pre-treatment.

2.4 CD4<sup>+</sup>、CD8<sup>+</sup>T 淋巴细胞比例变化对比 组高于对照组,对比差异都有统计学意义( $P<0.05$ ),两组治疗前  
两组治疗后的 CD4<sup>+</sup>T 淋巴细胞比例都高于治疗前,联合 后 CD8<sup>+</sup>T 淋巴细胞比例对比差异无统计学意义( $P>0.05$ ),见表 5。

表 5 两组治疗前后 CD4<sup>+</sup>、CD8<sup>+</sup>T 淋巴细胞比例变化对比( $\%, \bar{x} \pm s$ )

Table 5 Comparison of changes in the proportion of CD4<sup>+</sup> and CD8<sup>+</sup>T lymphocytes between the two groups before and after treatment ( $\%, \bar{x} \pm s$ )

| Groups        | n  | CD4 <sup>+</sup> |                         | CD8 <sup>+</sup> |                 |
|---------------|----|------------------|-------------------------|------------------|-----------------|
|               |    | Pre-treatment    | After treatment         | Pre-treatment    | After treatment |
| Joint group   | 42 | 41.22±2.48       | 47.82±1.46**            | 35.02±2.16       | 34.87±1.58      |
| Control group | 42 | 41.88±2.11       | 44.01±1.28 <sup>#</sup> | 35.29±1.85       | 35.66±2.18      |

### 3 讨论

颈部淋巴结炎为儿科的常见疾病,其主要表现为发热、颈部肿块、触摸疼痛、咽痛、咳嗽等症状,病情严重可威胁患儿身体健康,也会使得患儿家庭的生活质量降低<sup>[15]</sup>。颈部淋巴结炎在中医上属于“颈项痰核”范畴,其病理机制为气血瘀滞、痰热郁结,在治疗上需要宣肺解表、清热、散结。蒲地蓝口服液具有清热解毒以及抗炎消肿等功效,具有广谱的抗菌与抗病毒作用<sup>[16,17]</sup>。其中板蓝根味苦性寒,具有凉血利咽、清热解毒功效;蒲公英味甘平无毒,具有解热凉血、消肿散结功效;黄芩味苦性寒,具有泻火解毒、清热燥湿之效<sup>[18]</sup>。现代研究表明蒲地蓝口服液具有提高小儿免疫功能的作用,可提高巨噬细胞、中性粒细胞对病毒与细菌的吞噬能力<sup>[19]</sup>。揠针又称皮内针、穴位埋针等,是将皮内针刺入并固定于腧穴皮下,进行针刺刺激达到治疗相关疾病的方法。而颈部淋巴结炎患儿年龄偏小,皮肤娇嫩,揠针针芯细短、外形小巧,为此在临床上的应用安全性高,且患儿接受度高<sup>[20,21]</sup>。本研究显示治疗后联合组的总有效率为 97.6%,显著高于对照组的 85.7%;联合组的局部消肿时间、局部压痛消退时间、发热消退时间都显著少于对照组,与崔华<sup>[22]</sup>的研究有一定的相似之处,该学者探究中西医结合治疗小儿急性颈淋巴结炎,结果显示中西医结合治疗的有效率显著高于西医治疗

(97.06% vs 82.35%),且局部消肿的时间、发热消退的时间、局部压痛消退时间均短于西医组。目前蒲地蓝配合揠针治疗小儿颈部淋巴结炎的研究十分有限,蒲地蓝主要是治疗小儿急性肠系膜淋巴结炎<sup>[23]</sup>,而揠针的应用广泛,如腰痛、颈椎痛、脑损伤后的功能障碍等<sup>[24]</sup>,本研究创新性的将二者联合应用,表明蒲地蓝配合揠针治疗小儿颈部淋巴结炎能促进缓解临床症状,提高治疗效果。

CRP 是肝脏在机体受刺激作用下产生和释放的一种急性期反应物,主要由肝脏合成,此外肺泡巨噬细胞、肾脏也能诱导表达合成 CRP<sup>[25,26]</sup>。在急性上呼吸道感染发病初期,CRP 表达水平就会显著升高;而随着病情的好转,其水平又可快速恢复至正常水平<sup>[27]</sup>。CRP 可通过与凋亡细胞膜磷脂或外源性炎症因子结合,促使配体物质的清除,激活补体,调理吞噬功能<sup>[28]</sup>。揠针是一种特殊类型的针灸针,刺激较为温和,一般可留针 2~3 d。揠针能够激发人体正气,促进经络气血运行,具有痛感小、操作简便、耐受性高等优点<sup>[29,30]</sup>。本研究显示两组治疗后的血清 CRP 值低于治疗前,联合组低于对照组,与洪练青<sup>[31]</sup>等学者的研究虽然采用的治疗方法不同,但是结果类似,发现颈淋巴结清扫术对颈淋巴结结核患者血清炎症因子 CRP 水平低于对照组。从机制上分析,揠针疗法辅助治疗急性面颈部淋巴结炎能使局部血管扩张,能增强网状内皮系统的功能,提高血管通透性,改

变钙离子和钾离子在血管内外的分布,有利于防止炎症的扩散,加速新陈代谢,有利于限制病理产物和病原微生物分泌毒素<sup>[32,33]</sup>。其与蒲地蓝口服液的联合使用可发挥协同作用,可实现消除肿核、避免淋巴结炎持续扩散的目的,从而抑制 CRP 的释放。

小儿群体免疫功能尚未发育完善,从而出现颈部淋巴结炎的概率较成人更高,不利于其生长和发育。"十二皮部理论"是揠针治疗疾病的理论基础,用揠针针刺皮部的腧穴,可通过浅刺皮肤来激发浮络经气振奋,也可通过留针以候气调气,改善与调节局部微循环<sup>[34]</sup>。本研究显示两组治疗后的 CD4<sup>+</sup>T 淋巴细胞比例都高于治疗前,联合组高于对照组两组治疗前后 CD8<sup>+</sup>T 淋巴细胞比例对比差异无统计学意义。罗小英<sup>[35]</sup>等探究 HIV/AIDS 合并颈淋巴结结核在 CD4<sup>+</sup>T 淋巴细胞计数不同阶段的超声表现,发现随着 CD4<sup>+</sup>T 淋巴细胞计数下降,II 型、III 型颈淋巴结结核多见,HIV/AIDS 合并颈部淋巴结结核随着 CD4<sup>+</sup>T 淋巴细胞数目的下降,病变累及双侧颈部。说明 CD4<sup>+</sup>T 淋巴细胞比例与小儿颈部淋巴结炎的发病程度有一定的关系。从机制上分析,揠针可长时间固定埋藏在皮内或皮下,可对腧穴产生持续而稳定的刺激,亦可调整脏腑气血。抑制炎性细胞在气道内聚集,改善病理变化,从而调节机体的免疫功能,维持免疫网络平衡<sup>[36]</sup>。本研究也有一定的不足,样本数量比较少,且影响患儿病情的指标也比较多,导致本次研究可能存在研究偏倚,将在后续研究中深入分析。

总之,蒲地蓝配合揠针治疗小儿颈部淋巴结炎能抑制 CRP 的释放,提高小儿的免疫功能,从而促进临床症状的消失,提高总体治疗效果。

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(上接第 4555 页)

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