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自身免疫性溶血性贫血(AIHA)患者的不同输血方法与效果 *

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摘要 目的：探讨不同输血方法治疗自身免疫性溶血性贫血(autoimmune hemolytic anemia，AIHA)的效果。**方法：**2017 年 1 月 -2018 年 12 月选择在本院血液科诊治的 64 例自身免疫性溶血性贫血患儿，根据输血方法的不同分为观察组与对照组，各 32 例。观察组给予洗涤红细胞输注治疗，对照组给予非洗涤红细胞(悬浮红细胞)输注治疗，记录两组输血效果。**结果：**治疗后 4 w 观察组的总有效率显著高于对照组(100.0 % vs.87.5 %，*P*<0.05)。两组治疗后 4 w 的红细胞计数与血红蛋白都显著高于治疗前，且观察组显著高于对照组(*P*<0.05)。观察组的吸氧、机械通气、住院时间都显著少于对照组(*P*<0.05)。观察组治疗过程的过敏反应、发热反应、紫癜等不良反应发生率显著低于对照组(3.1 % vs. 21.9 %，*P*<0.05)。**结论：**洗涤红细胞输注治疗自身免疫性溶血性贫血患儿能促进机体红细胞计数与血红蛋白恢复正常，减少不良反应的发生，提高治疗效果与促进患儿康复。

关键词：输血；洗涤红细胞；自身免疫性溶血性贫血；红细胞计数；血红蛋白

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Different Transfusion Methods and Effects in Patients with Autoimmune Hemolytic Anemia (AIHA)*

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ABSTRACT Objective: To explore the effects of different blood transfusion methods on autoimmune hemolytic anemia (AIHA). **Methods:** 64 cases of children with autoimmune hemolytic anemia diagnosed and treated in the hematology department from January 2017 to December 2018 of our hospital were selected as the research subjects and were divided into observation group and control group with 32 cases in each groups accorded to the different blood transfusion methods. The observation group were given washed erythrocyte infusion treatment, and the control group were given non-wash erythrocyte (suspended red blood cell) infusion treatment, and the transfusion effects were recorded in the both groups. **Results:** 4 weeks post-treatment, the total effective rate in the observation group was significantly higher than that in the control group (100.0% vs. 87.5%, *P*<0.05). The red blood cell count and hemoglobin at 4 weeks post-treatment in two groups were significantly higher than pretherapy, and the observation group was significantly higher than the control group (*P*<0.05). The oxygen intake, mechanical ventilation, and hospital stay of the observation group were significantly shorter than those of the control group (*P*<0.05). The incidence of allergic reactions, fever reactions, and purpura in the observation group was significantly lower than that in the control group (3.1 % vs. 21.9 %, *P*<0.05). **Conclusion:** The washing red blood cell infusion for children with autoimmune hemolytic anemia can promote the body's red blood cell count and hemoglobin to return to normal, reduce the occurrence of adverse reactions, improve the treatment effect and promote the rehabilitation of children.

Key words: Blood transfusion; Washed red blood cells; Autoimmune hemolytic anemia; Red blood cell count; Hemoglobin

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前言

自身免疫性溶血性贫血(autoimmune hemolytic anemia，AIHA)是自身抗体和 / 或补体吸附于红细胞表面，破坏红细胞而引起[1,2]。该病在儿童与成人中都可发生，其中多发生于儿童[3]。该病在临床上主要表现为持续性或间歇性溶血，伴随有黄疸、脾大等，虽然有一定的自限性，但是容易复发，长时间患病会造成患儿出现肝功能损伤、病毒感染等症状，从而对患儿身心造成严重负面影响[4,5]。输血是目前临床上 AIHA 患儿的主要治疗方法，通过输注血液以纠正贫血，为患儿顺利度过危险期提供直接帮助[6]。不过该病患儿血型鉴定和交叉配血常有困难，并且也有特殊的血清免疫学特点，如果输血不当，可出现危及生命的溶血性输血反应 [7,8]。同时输血的血液也包含有一定的有害成分，即血液毒素，输注不当也会给患儿生命安全带来威胁[9,10]。同

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时当前我国尚未出现统一有关的推荐指南，部分地区更倾向于保守的输血模式[11,12]。因此，本文探讨了不同输血方法治疗AIHA的效果，为临床上合理选择输血方法提供参考。

1 资料与方法

1.1 研究对象

2017年1月-2018年12月选择在本院血液科诊治的64例自身免疫性溶血性贫血患儿，纳入标准：年龄3个月-3岁；患儿家长知情同意本研究；符合自身免疫性溶血性贫血的诊断标准；非病理性因素所致贫血者；交叉配血试验均未发现血清学相合的红细胞成分；具有输血指征；本院伦理委员会批准了此次研究。排除标准：先天性心脏疾病患儿；精神异常患儿；患儿家长不同意此次研究者；合并其他自身免疫性疾病或淋巴增殖性疾病者。

根据输血方法的不同分为两组，各32例，两组的一般资料对比无差异(P>0.05)。见表1。

表1 一般资料对比

Table 1 Comparison of general information

Groups	n	Degree of anemia (mild / moderate / severe)	Gender (Male/ Female)	Age (year)	Height (cm)	Body weight (kg)
Observation group	32	21/5/6	17/15	1.43± 0.11	54.10± 2.55	13.09± 1.11
Control group	32	20/7/5	16/16	1.46± 0.09	54.63± 3.10	13.92± 0.77

1.2 治疗方法

观察组：给予洗涤红细胞输注治疗。对照组：给予非洗涤红细胞(悬浮红细胞)输注治疗。所有患儿输血前监测患者血型，进行血型配对，并进行三查八对，积极监测患者输血过程中的生命体征变化。两组患儿都接受口服泼尼松治疗，剂量为0.1 mg·kg^{-1}·d^{-1}，并积极给予吸氧与机械通气治疗。

1.3 观察指标

(1)疗效标准[2]：治疗后4 w进行判定，显效：血清胆红素、红细胞数、血红蛋白量、网织红细胞百分率均恢复正常，抗球蛋白试验转为阴性；有效：血红蛋白>80 g/L，网织红细胞<5 %，部分缓解临床症状基本消失，血清胆红素测定≤ 34 pmol/L；无效：无达到上述标准甚或恶化。(2)记录治疗前、治疗后4 w的红细胞计数与血红蛋白值。(3)记录患儿的吸氧、机械通气、住院时间。(4)记录治疗过程中出现的过敏反应、发热反应、紫癜等。

1.4 统计方法

采用SPSS 22.0，计量资料采用($\bar{x}\pm s$)表示，以t检验；计数资料采用率(%)表示，以x^2检验及秩和检验等，检验水准为α=0.05。

2 结果

2.1 疗效对比

治疗后4 w观察组的总有效率为100.0 % (32/32)，显著高于对照组87.5 % (28/32) (P<0.05)。见表2。

表2 疗效对比(例，%)

Table 2 Comparison of efficacy(n,%)

Groups	n	Significant	Effective	Ineffective	The total effective
Observation group	32	30	2	0	32 (100.0)*
Control group	32	22	6	4	28 (87.5)

Note: Compared with the control group, *P<0.05.

2.2 红细胞计数与血红蛋白对比

治疗前，两组的红细胞计数与血红蛋白对比无统计学意义(P>0.05)，治疗后4 w两组的红细胞计数与血红蛋白都显著高于治疗前，且观察组高于对照组(P<0.05)。见表3。

表3 红细胞计数与血红蛋白对比($\bar{x}\pm s$)

Table 3 Comparison of red blood cell count and hemoglobin($\bar{x}\pm s$)

Groups	n	Red blood cell count (× 10^{12}/L)		Hemoglobin (g/L)	
		Pretherapy	Post-treatment	Pretherapy	Post-treatment
Observation group	32	5.13± 0.14	6.53± 0.13*#	73.14± 1.48	145.92± 2.58*#
Control group	32	5.10± 0.14	5.87± 0.15#	73.67± 2.19	130.98± 3.14#

Note: Compared with the control group, *P<0.05; compared with pretherapy, #P<0.05.

2.3 吸氧、机械通气、住院时间对比

观察组的吸氧、机械通气、住院时间都显著少于对照组，对比有统计学意义(P<0.05)。见表4。

2.4 不良反应情况对比

观察组治疗过程的过敏反应、发热反应、紫癜等不良反应发生率为3.1 % (1/32)，显著低于对照组的21.9 % (7/32) (P<0.05)。见表5。

表 4 吸氧、机械通气、住院时间对比 (d,$\bar{x}\pm s$)

Table 4 Comparison of oxygen inhalation, mechanical ventilation, and hospital stay (d, $\bar{x}\pm s$)

Groups	n	Oxygen inhalation time	Mechanical ventilation time	Length of stay
Observation group	32	14.22± 1.20*	8.34± 0.44*	23.98± 1.40*
Control group	32	19.32± 1.39	11.09± 0.87	30.87± 2.15

表 5 不良反应情况对比(例,%)

Table 5 Comparison of adverse reactions (n,%)

Groups	n	Allergic reaction	Fever reaction	Purpura	Total
Observation group	32	0	1	0	1 (3.1)*
Control group	32	1	4	2	7 (21.9)

3 讨论

AIHA 患者免疫系统功能发生紊乱,能够产生抵抗自身的抗体,致使红细胞表面被不断破坏,能够与红细胞表面抗原进行有效的结合,而不能正确地识别外来的抗原物质和自我信息因子,最终快速破坏红细胞,导致患者严重贫血[13,14]。该病具体的发病机制还不明确,在小儿中的发病多为原发性自身免疫性溶血性贫血,及时对患儿进行输血治疗,能快速恢复患儿的血氧水平,提升患儿自身的机体机能,从而对患儿贫血症状进行明显的改善[15,16]。

红细胞输注的目的在于使溶血进程减慢或停止,虽然持续时间比较长,但是应用的安全性比较好[17]。本研究显示治疗后 4w 观察组的总有效率为 100.0 %, 显著高于对照组的 87.5 %;观察组治疗过程的过敏反应、发热反应、紫癜等不良反应发生率为 3.1 %,显著低于对照组的 21.9 %。从机制上分析,洗涤红细胞输注是指在无菌环境中利用生理盐水冲洗浓缩红细胞,并在采集全血工作以后除去血浆成分,最终获取成分血,可提升输血的安全性[18]。并且洗涤红细胞可将血浆当中的免疫成分尤其是补体去除,从而降低患儿产生的免疫反应,提高输血治疗的效果[19]。不过在输血前,需要根据试验结果选择适合的交叉配血方法,应检测患儿血液中有无自身抗体以及因反复输血而产生的不规则抗体,建立完整的输血前检查试验方法,保障临床输血的安全性[20]。

自身免疫性溶血性贫血是一组自身免疫性疾病[21],在儿童中的发病率高于成人,容易合并有各种并发症,严重情况下可危及患儿生命安全[22]。输血疗法是通过补充外源性血液能够迅速发挥出改善机体血液循环、提高血容量及血压、增强血液携氧能力与血红蛋白含量等作用[23]。输血可明显减轻贫血患儿的贫血症状,但是由于患儿之间个体化差异比较明显,一些患儿在输血治疗中的效果比较差[24]。本研究显示两组治疗后 4 w 的红细胞计数与血红蛋白都显著高于治疗前,观察组也显著高于对照组。从机制上分析,洗涤红细胞可减少由于补体进入患儿体内而加重的溶血,去除了绝大部分的补体、血浆蛋白和白细胞,并可降低非溶血性输血反应,从而促进机体红细胞计数与血红蛋白恢复正常[25,26]。

自身免疫性溶血性贫血的产生是由于免疫调节、免疫耐受及抗体后调节异常导致的,患儿输入与自身的配血类型不一致的血液,不会加重红细胞吸附破坏,但是可显著减轻患儿贫血的临床症状[27,28]。本研究显示观察组的吸氧、机械通气、住院时间都显著少于对照组。从机制上分析,洗涤红细胞能提高机体的血液循环效果及机体免疫抵抗能力,增加血容量及血红蛋白含量,促进患儿自身骨髓造血系统发挥正常运转功能,从而促进患儿康复[29,30]。本研究也存在一定的不足,患儿数量较少,且没有进行深入的机制分析,随访时间比较短,将在后续研究中深入探讨。

总之,洗涤红细胞输注治疗自身免疫性溶血性贫血患儿能促进机体红细胞计数与血红蛋白恢复正常,减少不良反应的发生,提高治疗效果与促进患儿康复。

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