The Value of Folic Acid Combined with Low Molecular Weight Heparin in the Treatment of Recurrent Abortion

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Abstract: **Objective:** To retrospectively analyze the effect of folic acid combined with low molecular weight heparin regimen on recurrent abortion in hospital. **Methods:** The inclusion period was from February 2022 to February 2023. During this period, patients with recurrent abortion in the hospital were studied and discussed, including 70 patients. They were randomly assigned to a control group (35 patients were treated with low molecular weight heparin calcium and aspirin) and an observation group (35 patients were treated with folic acid on the basis of the control group). Relevant data were collected and sorted out, and finally processed using statistics. **Results:** The data of treatment results were processed by the statistical system, and the results ($P<0.05$) showed that the observation group had better information on various data such as hormone indicators, pregnancy outcome, and immune function indicators after treatment. **Conclusion:** The application of folic acid combined with low molecular weight heparin regimen is conducive to the smooth development of the treatment of recurrent abortion, can help patients control hormone indicators within a reasonable range, improve immune function and pregnancy outcomes, and has important significance in improving treatment effectiveness.

Keywords: Folic Acid; Low Molecular Weight Heparin; Recurrent Abortion

Introduction

Recurrent abortion is a common disease in obstetrics and gynecology, which is mainly caused by multiple factors such as chromosomal abnormalities, maternal endocrine disorders, maternal reproductive tract abnormalities, reproductive tract infections, immune dysfunction, and genetic thrombotic predisposition. Patients may experience three or more consecutive spontaneous abortions. It is necessary to attach importance to and strengthen research on the treatment of recurrent abortion, continuously improve the treatment effect, and provide a certain guarantee for the healthy development of the fetus. Clinically, drugs such as low molecular weight heparin calcium and aspirin are mainly used for treatment. Although the disease can be controlled, the treatment effect cannot be guaranteed to the maximum extent [1]. Influenced by the continuous development of modern medical and health undertakings, researchers have found that the application of folic acid in the treatment of recurrent abortion has a good effect, which provides a new direction for research on the treatment of recurrent abortion [2].

1. Data and Methods

1.1 General information

The inclusion period was from February 2022 to February 2023. Patients with recurrent abortion in the hospital during this period were studied and discussed, including 70 patients. They were randomly assigned to two groups. The control group and the observation group included 35 patients, respectively. In the control group, 25 years of age was the minimum

patient age, and 38 years of age was the maximum patient age, with an average of (32.02 ± 1.16) years; In the observation group, 25 years old was the minimum patient age, and 38 years old was the maximum patient age, with an average value of (32.06 ± 1.11) years. Selection requirements: All patients with recurrent abortion; Cognition meets conventional standards and consciousness is normal; Are willing to participate. Rejection requirements: low compliance and low compatibility; Concomitant with other serious diseases. The hospital ethics committee approved the research activity. The general data of patients were statistically processed and the results obtained did not have statistical significance (P>0.05).

1.2 Method

1.2.1 Control group

Implement the treatment plan of low molecular weight heparin calcium (low molecular weight heparin calcium injection, from Shenzhen Saibao Er Biological Pharmaceutical Co., Ltd., with the national drug approval number of H20060191, and the specification of 0.5ml: 5000AXa), and aspirin (from Jiangxi Pharmaceutical Co., Ltd., with the national drug approval number of H36020723). The use method of low molecular weight heparin calcium injection: subcutaneous injection, 5000 IU each time, once a day; Aspirin Usage: Take orally with warm water, 80mg each time, once a day.

1.2.2 Observation group

Based on the control group, folic acid (folic acid for injection, from Shandong Luoxin Pharmaceutical Group Co., Ltd., with the national drug approval number of H20050739 and the specification of 15mg) was used. The method of use of folic acid: intramuscular injection, 5mg each time, once a day.

1.3 Judgment criteria

Collect and organize relevant data and information, and finally use statistics for processing.

(1) The changes of hormone indexes, including serum human chorionic gonadotropin (HCG), progesterone (P), and estradiol (E1) levels, were measured and compared between the two groups before and after treatment.

(2) The pregnancy outcomes of both groups were observed and recorded, including full term delivery, premature survival, premature death, and miscarriage.

(3) Detect and observe two groups of immune function indicators, including CD3+/CD8+, CD4+/CD8+.

1.4 Statistical methods

Enter various data information into the SPSS 20.0 system, where ($\bar{x} \pm s$) is displayed as measurement data, while (n,%) is displayed as counting data. During testing, it is used, with a limit of 0.05. A P value higher than this value indicates no statistical significance, while a value lower than this value indicates statistical significance.

2. Results

2.1 Sex hormone indicators

The treatment result data were processed by the statistical system, and the results (P<0.05) showed that the observation group had better data information on hormone indicators after treatment. See Table 1.

Table 1 Comparison of hormone indicators between the two groups before and after treatment ($\bar{x} \pm s$)

Groups	HCG（IU/L）		P（ng/ml）		E1（ng/ml）	
（n=35）	Before	After treatment	Before	After	Before	After

	treatment		treatment	treatment	treatment	treatment
Observation group	983.23±92.52	7011.52±519.63	33.45±12.63	105.63±19.63	410.51±15.85	946.52±64.53
Control group	983.64±91.99	6166.16±415.36	33.50±12.69	87.52±15.33	411.01±15.54	645.17±34.11
t	0.018	6.840	0.016	4.301	0.133	24.425
P	0.985	0.001	0.986	0.001	0.894	0.001

2.2 Pregnancy outcome

The treatment result data were processed by the statistical system, and the results (P<0.05) showed that the observation group had better data information on pregnancy outcomes. See Table 2.

Table 2 Comparison of pregnancy outcomes between the two groups after treatment (n,%)

Groups（n=35）	Full term delivery	Premature survival	Premature death	Abortion
Observation group	20（57.14）	13（37.14）	1（2.85）	1（2.85）
Control group	15（42.85）	8（22.85）	6（17.14）	6（17.14）
X^2	4.084	4.862	11.349	11.349
P	0.043	0.027	0.001	0.001

3.3 Immune function indicators

The treatment result data were processed by the statistical system, and the results (P<0.05) showed that the observation group had better data information on immune function indicators. See Table 3.

Table 3 Comparison of immune function indicators between the two groups after treatment ($\bar{x} \pm s$)

Groups	Number of cases	CD3+/CD8+（%）	CD4+/CD8+（%）
Observation group	35	27.02±2.85	1.52±0.16
Control group	35	22.31±1.79	1.23±0.29
t		8.279	5.180
P		0.001	0.001

3. Discussion

3.1 Pathological characteristics of recurrent abortion

Compared with healthy pregnant women, patients with recurrent abortion have a higher risk of early miscarriage, and abnormal changes in the patient's embryonic chromosomes, luteal function, prolactin, hormones, immune function indicators, thyroid function, and cervical function can occur. As the number of abortions increases, the safety risk of pregnant women will increase. The specific cause is relatively complex, and during treatment, the patient's immune function will be improved Control of relevant hormone levels, improvement of pregnancy outcomes, and other treatment priorities [3].

3.2 Treatment of recurrent abortion

Aspirin is a commonly used drug in the treatment of recurrent abortion. In addition to its antipyretic, analgesic, anti-inflammatory, and anti rheumatic effects, aspirin also has significant advantages in inhibiting platelet aggregation. When administered to patients, it can have an impact on the pathophysiological changes in the blood of the patient's body, improve

the hypercoagulable state of the blood, reduce the risk of thrombosis, promote the restoration of normal blood supply to placental tissue, and maintain normal blood and oxygen supply to the embryo, Thereby improving pregnancy outcomes [4]. However, in actual treatment, the use of a single drug cannot effectively improve the treatment effect. With the continuous development of research, low molecular weight heparin (LMWH) has been gradually applied to clinical practice. This drug is mainly derived from antithrombotic and anticoagulant effects of ordinary heparin. The drug contains potent anticoagulant factor active substances and lower anticoagulant factor IIa (antithrombin activity) components, which can not only produce antithrombotic effects, but also reduce the risk of bleeding and, to a certain extent, have a positive impact on uterine microcirculation, Effectively regulate immune function, thereby effectively inhibiting natural killer cell function, promoting trophoblast proliferation, regulating trophoblast invasion ability, and reducing trophoblast apoptosis [5]. In addition, from the perspective of clinical practical development, an intermediate product, homocysteine, is produced during the metabolism of amino acids in the human body. In this reaction process, it mainly relies on folic acid and vitamin B12 to participate. Once the human body is deficient in folic acid and vitamin B12, it will lead to excessive secretion of homocysteine, causing damage to the human vascular endothelial function, especially in pregnant women, Vascular smooth muscle cell proliferation is extremely prone to occur, which has adverse effects on the normal blood coagulation system and fibrinolytic system, forming a hypercoagulable state of blood, causing thrombosis, blocking blood vessels, leading to restrictions on fetal growth and development, thereby increasing the risk of miscarriage [6]. Therefore, while giving aspirin and low molecular weight heparin calcium to patients with recurrent abortion, supplementing folic acid can maintain the normal progress of DNA synthesis, nucleic acid synthesis, cell growth, tissue repair, and other reaction processes during embryonic development, reduce the risk of neonatal birth defects and hyperhomocysteinemia, enhance treatment effectiveness, help patients control hormone levels in the body, and improve treatment safety [7]. Based on the research results in this article, the statistical system processed the treatment result data, and the result showed that the P value was less than 0.05. After treatment, the observation group had better data information on hormone indicators, pregnancy outcome, immune function indicators, and other aspects.

It can be seen that the application of folic acid combined with low molecular weight heparin can help the treatment of recurrent abortion to proceed smoothly, help patients control hormones within a reasonable range, improve immune function and pregnancy outcomes, and have important significance in improving treatment effectiveness.

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