LOW MOLECULAR WEIGHT HEPARIN CALIUM COMBINED WITH SHENYANKANGFU TABLET FOR THE TREATMENT OF PRIMARY NEPHROTIC SYNDROME

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ABSTRACT

Objective: To study the clinical effects of Shenyankangfu tablet combined with low molecular weight heparin calium for primary nephrotic syndrome (PNS).

Methods: 90 PNS patients treated from May 2013 to May 2014 in our hospital were selected and randomly divided into experimental group and control group, 45 cases each group. The experimental group patients were treated with Shenyankangfu tablet combined with low molecular weight heparin calium while the control group patients were just treated with low molecular weight heparin calium, two groups patients were treated for 2 months. The clinical effects and clinical index like triglyceride, total cholesterol, serum creatinine, serum albumin, urine protein quantification in the two groups were compared before and after surgery, as well as the coagulation indicators of two groups were observed.

Result: The effective rate of experimental group (88.9%) was significantly higher than that of control group (66.7%) (P < 0.05); the index like triglyceride, total cholesterol, serum creatinine, serum albumin, urine protein quantification of experimental group was significantly better than that of control group (P <0.05); the coagulation indicators like D-dimer (D-D), fibrinogen (Fib), prothrombin time (PT), activated partial thromboplastin time (APTT) of experimental group was significantly better than that of control group (P <0.05).

Conclusion: For PNS patients, Shenyankangfu tablet combined with low molecular weight heparin calium has an obvious clinical effect and can significantly improve the hypercoagulable state and renal functions. It is worthy of clinical promotion.

Keywords: Hypercoagulable State, Primary nephrotic syndrome, Shenyankangfu tablet, Low molecular weight heparin calium.

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Introduction

Primary nephrotic syndrome is a renal disease syndrome caused by a variety of factors, such as endocrine disease, systemic systemic disease, drug poisoning, a variety of bacterial infections. primary nephrotic syndrome patients usually with renal coagulation abnormalities, blood with a and hypercoagulable state, and may cause disease deterioration16. There are literatures showed that primary nephrotic syndrome patients treated with Shenyankangfu tablet combined with low molecular weight heparin calium treatment, can significantly improve the patient's blood hypercoagulability and renal function indicators, the clinical effect is accurate, and it is of great clinical value to investigate the clinical treatment of primary nephrotic syndrome17. Therefore, Shenyankangfu tablet combined with low molecular weight heparin calium were applied to the patients with primary nephrotic syndrome in our hospital from May 2013 to May 2014.

Patients and methods

General information

90 patients with primary nephrotic syndrome were selected in our hospital from May 2013 to May 2014, including 52 males and 38 females, aged 22 to 74 years, mean age (43.7 ± 3.4) years.
Criteria: patients met the diagnostic criteria for primary nephrotic syndrome that formulated Chinese Medical Association of Nephrology Society; patients diagnosed with primary nephrotic syndrome by clinical features, imaging studies, and laboratory tests; serum creatinine (SCr) of patients were lower than 265.2 μmol/L; total cholesterol (TC) was more than 10 mmol/L; patients were not given lipid-lowering therapy, and informed consent was signed by all patients. According to the random number table method, 45 cases were divided into the experimental group and the control group, respectively. Experimental group had 27 males and 18 females, the age were 22-74, mean age was (43.7 ± 3.3); the control group had 25 males and 20 cases, the age were 22-74, mean age was (43.6 ± 3.4).

All patients were without lactating, pregnant women, allergic purpura nephritis caused by secondary nephrotic syndrome patients, hepatitis B virus associated glomerulonephritis, diabetic nephropathy, hypertension and allergic nephropathy, connective tissue disease, diabetes, fever, urinary tract infection and other diseases. The disease severity, average age, gender and other basic conditions in two groups of patients was comparable (P>0.05).

Treatment methods
Patients in the experimental group were treated with the combination of Shenyankangfu tablet and low molecular weight heparin calcium, and the Shenyankangfu tablet were taken orally with 8 tablets / times and 3 times / day. Patients in the control group were treated with low molecular weight heparin calcium, namely, subcutaneous injection of low molecular weight heparin calcium, 4000U/times, 1 times / day; the two groups were treated for a period of 2 months.

Instruments and drugs
Low Molecular Weight Heparin Calcium Injection (brand name: Bolley match; batch number: H20060190; manufacturers: Shenzhen tour Paul biological pharmaceutical), Shenyankangfu tablet (batch number: Z10940034; manufacturers: Tianjin Tongrentang Group Limited by Share Ltd).

Observe indicators
The levels of triglyceride, total cholesterol, serum creatinine, serum albumin and urine protein quantification of the two groups were compared before and after treatment. The clinical effects of the two groups were compared. The D-dimer, fibrinogen (Fib), Prothrombin time (PT), activated partial thromboplastin time (APTT) and other coagulation parameters of the two groups were observed.

Clinical efficacy evaluation criteria
Refer to the following indicators: Excellence: clinical signs and symptoms significantly reduced, related indicators of normal clinical laboratory; Effective: clinical signs, symptoms slightly reduced, clinical laboratory index slightly abnormal.

Invalid: related clinical signs, symptoms, laboratory index increased or unchanged. Clinical effective rate = (excellence + effective) / case number * 100%.

Statistical analysis
All the data were analyzed by SPSS18.0 software system, the count data were tested by χ2 test, and the quantitative data were tested by T test, P<0.05 was statistically significant.

Results
Comparison of the clinical efficacy of the two groups
The clinical effective rate of the experimental group was 88.9%, which was significantly higher than that of the control group (66.7%), and the difference was statistically significant (P<0.05) (Table 1).

<table>
<thead>
<tr>
<th>Group</th>
<th>Excellence</th>
<th>Effective</th>
<th>Invalid</th>
<th>Clinical effective rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experimental group (n=45)</td>
<td>32(71.1)</td>
<td>8(17.8)</td>
<td>5(11.1)</td>
<td>40(88.9)</td>
</tr>
<tr>
<td>Control group (n=45)</td>
<td>26(57.8)</td>
<td>4(8.9)</td>
<td>15(33.3)</td>
<td>30(66.7)</td>
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X² = 1.75, P = 0.19

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X² = 1.75, P = 0.19

Table 1: Comparison of clinical effects between the two groups [n (%)].

The levels of triglyceride, total cholesterol, serum creatinine, serum albumin and urinary protein in the experimental group were significantly higher than in the control group (P<0.05) (Table 2).

Comparison of coagulation function indexes before and after treatment in two groups
The levels of D-dimer (D-D), fibrinogen (Fib),
prothrombin time (PT) and activated partial thromboplastin time (APTT) in the experimental group were significantly better than those in the control group (P <0.05) (Table 3).

Table 2: Comparison of the clinical indicators of the two groups of patients (X ± S).

<table>
<thead>
<tr>
<th>Clinical indicator</th>
<th>Experimental group (n=45)</th>
<th>Control group (n=45)</th>
<th>T</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>D-d (mg/l)</td>
<td>Before treatment</td>
<td>1.6±0.6</td>
<td>1.7±0.7</td>
<td>0.73</td>
</tr>
<tr>
<td></td>
<td>After treatment</td>
<td>0.4±0.1</td>
<td>1.3±0.5</td>
<td>11.84</td>
</tr>
<tr>
<td>Fib</td>
<td>Before treatment</td>
<td>9.2±1.7</td>
<td>9.1±1.8</td>
<td>0.27</td>
</tr>
<tr>
<td></td>
<td>After treatment</td>
<td>4.8±0.8</td>
<td>6.6±1.4</td>
<td>7.49</td>
</tr>
<tr>
<td>(g/l)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>5.1±0.3</td>
<td>5.2±0.2</td>
<td>1.86</td>
</tr>
<tr>
<td>(s)</td>
<td>Before treatment</td>
<td>10.4±2.6</td>
<td>7.2±1.6</td>
<td>7.03</td>
</tr>
<tr>
<td></td>
<td>After treatment</td>
<td>20.1±1.3</td>
<td>20.0±1.4</td>
<td>0.35</td>
</tr>
<tr>
<td>APTT</td>
<td>Before treatment</td>
<td>33.2±6.1</td>
<td>25.1±4.2</td>
<td>7.34</td>
</tr>
<tr>
<td></td>
<td>After treatment</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 3: Comparison of coagulation function indexes before and after treatment in two groups (X ± S).

Discussions

Various factors can increase the permeability of the glomerular basement membrane and cause nephrotic syndrome, clinical manifestations of hyperlipidemia, high edema, hypoproteinemia, a large number of proteinuria and other symptoms are very common(6). Glomerular lesions characterized by increased proteinuria, in renal tubulointerstitial lesions or renal vascular lesions such as increased proteinuria is relatively rare, increased proteinuria can cause edema, hyperlipidemia, hypoproteine-

mia(7). Most scholars believe that the damage of glomerular capillary wall charge barrier can lead to proteinuria(8). Nephrotic syndrome can occur fat and protein metabolism, acute renal failure, embolism and thrombosis, infection and other complications situation, clinical prognosis are closely related to complications of patients and need to actively control. Primary nephrotic syndrome patients often presented hypercoagulable state of blood, and metabolic disorders often occur before remission of nephrotic syndrome, and the patient needs to adjust the fat and protein in the diet, reduce the metabolic disorder to the minimum.

However, the severe hypercholesterolemia need to actively intervene, it is generally considered that severe hypercholesterolemia was total cholesterol (TC) more than 10mmol/L(9). At present, Shenyankangfu tablet combined with low molecular weight heparin calcium to treat the primary nephrotic syndrome has become an important research content of medical scholars(10).

In this study, primary nephrotic syndrome were treated by Shenyankangfu tablet combined with low molecular weight heparin calcium therapy, the results showed that: effective clinical in experimental group was 88.9%, and significantly higher than the control group (66.7%), the difference was statistically significant (P <0.05). In the experimental group, the levels of triglyceride, total cholesterol, serum creatinine, serum albumin and urine protein quantification were significantly better than those in the control group (P <0.05). The levels of D-dimer (DD), fibrinogen (Fib), prothrombin time (PT) and activated partial thromboplastin time (APTT) in the experimental group after treatment were significantly better than those in the control group (P <0.05) (10). Heparin has a fibrinolytic, antithrombotic, anticoagulant function, low molecular weight heparin calcium as a new anticoagulant, with an average molecular weight of 4000-6500, the antithrombin activity and Xa activity is strong, and the role of anti-thrombosis sustained rapid, compared with the general heparin, its bioavailability is high, with strong anti-thrombotic effect(11).

Low molecular weight heparin calcium can inhibit the proliferation of glomerular endothelial cells and mesangial cells, and can activate complement, antibody, promote diuretic; the extracellular matrix to produce degradation, alleviate the patient's hypercoagulable state, reduce proteinuria, improve Renal function progress, and can also pro-
duce degradation of the extracellular matrix to alleviate the patient’s hypercoagulable state, lower proteinuria, and improve renal function progression.

Traditional Chinese medicine pointed out that the “urine”, “edema” range, blood stasis, water, hot and humid, fengxie were external factors of the primary nephrotic syndrome, the body spleen and kidney deficiency were internal factors, the body spleen deficiency could caused insufficient blood, and retention of wet turbidity could caused edema. Shenyankangfu tablet is a traditional Chinese medicine preparation, medicine composition include Hedyotis diffusa, salvia, eucommia, yam, rehmannia root, ginseng, ginseng etc.. Platycodon root, cogongrass rhizome, motherwort, and Salvia miltiorrhiza have the role of promoting blood circulation, Hedyotis diffusa and tuckahoe has detoxification heat effect, yam, Eucommia ulmoides and ginseng can be beneficial to the kidney and spleen14–16. The combination of these drugs has an excellent effect on the body. Modern pharmacological studies showed that the Shenyankangfu tablet can improve renal function, reduce urinary protein, improve microcirculation, and promote vascular permeability. Shenyankangfu tablet combined with low molecular heparin calcium, the combination of traditional Chinese medicine and Western medicine, could improve renal function and blood coagulation state, and the clinical effect is accurate.

In summary, combination therapy of Shenyankangfu tablet and low molecular weight heparin calcium in treating patients with primary nephrotic syndrome can significantly improve the hypercoagulable state and renal function index, the clinical effect is accurate and it is worthy of clinical promotion.

References