Changes of indicators of immune cells in the peripheral blood of patients in liver cancer patients after transcatheter arterial chemoembolization combined with interstitial therapy

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Objective: To discuss the influence of hepatic arterial chemoembolization combined with tumor stroma treatment to immune index of peripheral blood cell of patients with liver cancer.

Methods: Selected 48 cases of patients with liver cancer admitted in our hospital from April 2010 to June 2014 and divided them into study group and control group according to random number table. Hepatic arterial chemoembolization treatment for control group, and hepatic arterial chemoembolization combined with tumor stroma treatment for study group respectively; in addition, selected 24 cases of normal controls as normal group, control study was carried out. To compare the therapeutic effect, immune indexes of peripheral blood cell changes and survival rate of both groups.

Results: After specific treatment, therapeutic effect in study group was obviously superior to that in control group (P<0.05), CD3+, CD4+ and CD4+/CD8+ level of both groups had no obvious difference before treatment (P>0.05), and all was obviously lower than normal group (P<0.05); CD3+, CD4+ and CD4+/CD8+ level in study group after treatment was obviously higher than that in control group (P<0.05); survival rate in study group 1 years and 2 years after treatment was obviously higher than that in control group (P<0.05).

Conclusion: Hepatic arterial chemoembolization combined with tumor stroma treatment could obtain better clinical effects for patients with liver cancer, meanwhile could effectively promote ability of the patient’s own immune and recovery, had important clinical significance for the prognosis of patients, and deserved further extension.

1. Introduction

Liver cancer was a kind of more common clinical malignant tumors, including primary and secondary two types, mainly showed primary liver cancer[1]. In our country, the incidence of liver cancer was high, and was rising in recent years, seriously influenced people's lives and health. For the treatment of liver cancer, surgery was a common choice, but due to numbers of tumors, location, size and so on influence factors, its effects were restricted, especially for middle and advanced stage liver cancer, its therapeutic effect would be more limited[2,3]. Therefore, non-surgical therapy for liver cancer was being widely spreaded gradually, mainly hepaticarterial chemoembolization treatment. But due to maldistribution of embolism agent for hepatic arterial chemoembolization, which could easily lead to local recurrence even treatment failure, therefore, its application range had certain limitations[4]. If combined with tumor stroma treatment, we could improve therapeutic effects. Because tumor stroma treatment could effectively control remaining tumor lesions from hepatic arterial chemoembolization treatment. In order to study the influence of hepatic arterial chemoembolization combined with tumor stroma treatment to immune index of peripheral blood cell, we have selected 48 cases of patients with liver cancer admitted in our hospital from April 2010 to June 2014 for a further study, the reports were as follows.
2. Materials and methods

2.1. General data

Selected 48 cases of patients with liver cancer admitted in our hospital from April 2010 to June 2014, and divided them into study group and control group according to random number table. Study Group: male 15 cases, female 9 cases, age 36-71 years old, average age (51±13) years old, average duration (2.8±1.7) months; Control Group: male 14 cases, female 10 cases, age 35-73 years old, average age (52±13) years old, average duration (3.0±1.8) months; as regards to gender, age and duration, and so on, the difference of both groups had no statistical significance (P>0.05), had certain comparability. In addition, selected 24 cases of normal controls as normal group, control study was carried out. General data such as gender, age etc., the difference of three groups had no statistical significance (P>0.05), had certain comparability. 48 selected cases of patients with liver cancer were all confirmed according to liver cancer relevant diagnostic criteria[5] and relevant auxiliary examination.

2.2. Methods

(1) Control group: Given hepatic arterial chemoembolization treatment. Local anesthesia, the conventional disinfection, puncture approach through right artery femoralis of patients, on the basis of tumor size and blood supply, to do a selected insertion around hepatic artery and inherent artery; then injection of epirubicin of 30-50 mg, mitomycin of 10 mg, oxaliplatin of 100-150 mg, iodized oil emulsifier of 10-30 mL, with gelatin sponge for embolization. Reexamination every other month for patients, according to disease state for once or more treatment, until blood supply artery occlusion around lesions, end of treatment.

(2) Study Group: Given hepatic arterial chemoembolization combined with tumor stroma treatment. On the basis of control groups, when hepatic arterial chemoembolization treatment finished, according to the iodine oil deposition, slowly injection of epirubicin of 10-20 mg, mitomycin of 5mg, oxaliplatin of 50-100 mg, iodized oil emulsifier of 10-20 mL at residual lesions for tumor stroma treatment, for larger lesions, drug use for multiple times and multiple parts was necessary.

2.3. Clinical observation index

Observation and records: iodine oil deposition rate and tumor shrink rate one month after treatment of both groups; T lymphocyte subpopulation (CD3+, CD4+, CD4+/CD8+) level changes before treatment and one month after treatment of both groups; 1-year and 2-year survival rate after treatment of both groups. T lymphocyte subpopulation (CD3+, CD4+, CD4+/CD8+) level determination method: Fasting venous blood of 3 mL in the morning, added anticoagulation, then using FAC Scan FCM(BD Co., USA) for determination, kits bought from Wuhan Boster Biotechnology Company.

2.4. Statistical method

Data processing using SPSS17.0 software for analysis, measurement data using mean±SD to show, t test, χ² examination, P<0.05 indicated that difference had statistical significance.

3. Results

3.1. Comparison of clinical therapeutic effect of both groups

Iodine oil deposition rate and tumor shrink rate in study group one month after treatment were obviously higher than that in control group, difference had statistical significance (P<0.05); 1-year and 2-year survival rate after treatment in study group were obviously higher than that in control group, difference had statistical significance (P<0.05), see Table 1.

Table 1

<table>
<thead>
<tr>
<th>Group</th>
<th>Iodine oil deposition rate (%</th>
<th>Tumor shrink rate (%)</th>
<th>1-year survival rate [n (%)</th>
<th>2-year survival rate [n (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Study</td>
<td>48.0±10.6</td>
<td>32.4±11.2</td>
<td>16(66.7)</td>
<td>9(37.5)</td>
</tr>
<tr>
<td>Control</td>
<td>24</td>
<td>26.5±13.9</td>
<td>22(91.7)</td>
<td>16(66.7)</td>
</tr>
</tbody>
</table>

3.2. Comparison of immune index of peripheral blood cell of both groups

CD3+, CD4+ and CD4+/CD8+ level of both groups had no obvious difference before treatment (P>0.05), and all was obviously lower than normal group (P<0.05); CD3+, CD4+ and CD4+/CD8+ level in study group after treatment was obviously higher than that in control group (P<0.05), difference had statistical significance (P<0.05), see Table 2.

Table 2

<table>
<thead>
<tr>
<th>Group</th>
<th>Time</th>
<th>CD3+</th>
<th>CD4+</th>
<th>CD4+/CD8+</th>
</tr>
</thead>
<tbody>
<tr>
<td>Study</td>
<td>Before</td>
<td>39.3±10.2</td>
<td>28.2±6.4</td>
<td>1.0±0.7</td>
</tr>
<tr>
<td></td>
<td>After</td>
<td>57.5±8.6</td>
<td>38.1±6.2</td>
<td>1.5±0.4</td>
</tr>
<tr>
<td>Control</td>
<td>Before</td>
<td>39.0±10.7</td>
<td>27.9±5.8</td>
<td>0.9±0.8</td>
</tr>
<tr>
<td></td>
<td>After</td>
<td>46.3±9.7</td>
<td>30.9±6.7</td>
<td>1.2±0.6</td>
</tr>
</tbody>
</table>

Notes: ’ showed, compared with normal group, P<0.05; ‘ showed, compared with control group after treatment, P<0.05; ‘ showed, compared with same group before treatment, P<0.05.

4. Conclusion

Liver cancer was a kind of more common clinical malignant tumor, including primary and secondary two types, mainly showed primary liver cancer. Primary liver cancer was easy to transfer, high malignant degree, and easy to relapse, etc, usually, sole therapeutic method was difficult to play a better effect[6]. Accordingly, mainly based on surgery for the treatment of liver cancer, but due to its particularity, it also existed problems for surgery, so other nonsurgical treatment was necessary[7].

In nonsurgical treatment for liver cancer, hepatic arterial...
higher drug concentration, killed tumour cells, then gave play to releasing chemotherapy was that injecting medicine directly into new methods for the treatment of patients with liver cancer. Slow-years, the development of slow-releasing chemotherapy brought problems[8,9]. Meanwhile, even for patients who have underwent embolization for several times, hepatic arterial chemoembolization could easily cause hematostenosis, even vascular occlusion, which also influenced the therapeutic effects in some degree[10]. In recent years, the development of slow-releasing chemotherapy brought new methods for the treatment of patients with liver cancer. Slow-releasing chemotherapy was that injecting medicine directly into tumor and mesenchyme parts, slowly released, maintained the higher drug concentration, killed tumour cells, then gave play to effect, which regarded as tumor stroma treatment[11]. Iodipin was necessary in hepatic arterial chemoembolization and tumor stroma treatment, which could effectively contain cancer cells, made which unable to a material exchange with the outside world, and could play a better therapeutic effect. Due to selective retention and slow degradation in liver cancer tissues, iodipin could play a good role in drug carrier. Researchers showed that tumor necrosis was closely related to iodipin deposition[12]. In this study, iodipin deposition rate in study group was obviously higher than that in control group, and therapeutic effects as so, which indicated that therapeutic effects for liver cancer were closely related to iodipin deposition, and was in accordance with related research results.

The body's resistance to tumor mainly based on cellular immunity. T lymphocytes play an important regulation role. T lymphocytes including CD4+ and CD8+ T cell subset played a corresponding cellular immune function respectively.

The proportion of T cell subsets in Peripheral Blood, especially CD4+/CD8+ ratio, was an effective indicator of the body’s cellular immune ability, had important clinical significance. In this study, CD3+, CD4+ and CD4+/CD8+ level of both groups before treatment had no obvious difference, and all was obviously lower than normal group, which indicated that cellular immune level of patients with liver cancer was obviously lower, and was in accordance with related research results.CD3+, CD4+ and CD4+/CD8+ level in study group after treatment was obviously higher than that in control group, which showed that hepatic arterial chemoembolization combined with tumor stroma treatment could obtain better clinical effects for patients with liver cancer, meanwhile could effectively promote ability of the patient's own immune and recovery.

After hepatic arterial chemoembolization treatment, there still existed some lesionparts which could not get effective treatment, and easy recurrence, and then reduced the therapeutic effect. Tumor stroma treatment could be applied in the treatment for remaining lesions after hepatic arterial chemoembolization treatment, which could reach to lesion parts directly, slowly release drug, maintain effective concentration, and then effectively kill tumor cells[13]. Hepatic arterial chemoembolization combined with tumor stroma treatment for liver cancer could get better clinical effect, which has been proved at home and abroad, but related study was also limited for the influence of this method to cellular immune function[14,15]. This study showed that hepatic arterial chemoembolization with tumor stroma treatment for liver cancer had some influence on cellular immune function, but the influence on humoral immunity also needed further study.

In conclusion, hepatic arterial chemoembolization combined with tumor stroma treatment could obtain better clinical effects for patients with liver cancer, meanwhile could effectively promote ability of the patient's own immune and recovery, had important clinical significance for the prognosis of patients deserved further extension.

References