Proceedings of Anticancer Research

Review Article

The Efficacy of Different Interventional Chemoembolization Regiments Combined with Radiofrequency Ablation in the Treatment of Primary Liver Cancer and its Effects on Patients' Immune Function

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Abstract: ***Objective:*** To study and compare the clinical effects of the combination of different interventional embolization chemotherapy and radiofrequency ablation in patients with primary liver cancer. ***Methods:*** In this paper, based on the target data validation of those 60 patients with primary liver cancer treated in the hospital during the period from May 2017 to May 2018, the double-blind method was used for the comparison between groups. Patients in the reference group were treated with the combination of cis-platinum interventional chemoembolization regimen and radiofrequency ablation, while those in the experimental group were treated with the combination of lobaplatin interventional chemoembolization regimen and radiofrequency ablation. Then, the efficacy of both groups was compared. ***Results:*** After the treatment, the clinically effective total value, the calculation value of adverse reactions, and the value of IgA, IgM, IgG and AFP of the experimental group were compared with those of the reference group. In addition, the value of IgA, IgM, IgG and AFP of both groups after and before the treatment were compared. The experimental results showed that the data was statistically significant (P<0.05). ***Conclusion:*** The combination of lobaplatin and cisplatin interventional embolization chemotherapy and radiofrequency ablation has some effects in patients with primary liver cancer, but the former one showed more significant effects.

Keywords: Interventional embolization chemotherapy; Radiofrequency ablation; Primary liver cancer; Immune function

Publication date: May, 2020

Publication online: 31 May, 2020

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The incidence of primary liver cancer is high, and the disease progresses rapidly. About 90% of patients are found in the advanced stage of the disease. The combination of arterial chemoembolization and radiofrequency ablation is a non-surgical measure for the treatment of primary liver cancer. Choosing precise embolization can cause tumour ischemic necrosis to treat liver cancer tissues to achieve the therapeutic effect, which has clinical advantages such as fast recovery, less trauma, and fewer complications[1]. This article analyzes and describes the clinical role of different interventional embolization chemotherapy and radiofrequency ablation in the treatment of 60 patients with primary liver cancer who participated in the treatment between May 2017 and May 2018.

1 Data & Methods

1.1 General data

In this paper, based on the target data validation of those 60 patients with primary liver cancer treated in the hospital (during the period from May 2017 to

May 2018), the double-blind method was used for the comparison between groups, that is, the experimental group and the reference group.

There were 30 cases in the experimental group, with the gender rate of 15:15, the age from 77 to 48, and the average age of (60.54±4.32).

There were 30 cases in the experimental group, with the gender rate of 15:15, the age from 78 to 49, and the average age of (61.54±5.32).

The general data of patients with primary liver cancer in both groups were verified, and there was no statistical significance (P>0.05).

The inclusion criteria for samples: (1) The sample was confirmed by pathology; (2) Patients with completely obstructed portal vein and new collateral circulation or not yet completely obstructed portal vein; (3) The tumour diameter exceeds 5cm; (4) Patients and their families have earned the investigation content and voluntarily signed; (5) The submission and application of medical ethics will be recognized.

The exclusion criteria for samples: (1) Patients with child Pugh grade higher than grade 3; (2) Patients with distant metastasis of cancer cells; (3) Patients with severe insufficiency of coagulation; (4) Patients with other malignant tumours.

1.2 Methods

All samples were treated with interventional embolization chemotherapy and radiofrequency ablation. The Seldinger method was used to puncture the femoral artery. A catheter was placed in the abdominal artery under the DSA guidance. The contrast agent was injected into the hepatic artery to observe the size and position of the tumour. A micro-catheter was inserted into the blood vessel for the injection of an embolization agent and related chemotherapy drugs. In the reference group, patients were treated with cisplatin interventional chemoembolization regimen combined with radiofrequency ablation, in which 20mg / m^2 cisplatin, 75 to 1000mg 5-Fu and 10 to 20mg mitomycin were used; While in the experimental group, patients were treated with lobaplatin interventional embolization chemotherapy regimen and radiofrequency ablation, in which 20mg/m^2 loplatin, 75 to 1000mg 5-Fu, 10 to 20mg mitomycin; Then, according to the size of the patient's lesions, 10 to 20mg pirarubicin, 5 to 10ml iodized oil, would be given. If the iodized oil was more than 20ml, the desired effect cannot be obtained, and gelatin particles are needed for vascular embolization. Radiofrequency ablation should be given after 2 to 3 weeks of transcatheter arterial chemoembolization. Then, location and size of the patient's tumour, puncture needle angle, direction and depth should be determined by scanning the liver with CT. Under the guidance of CT, the puncture needle was placed according to the radio-frequency treatment meter to carry out ablation treatment. The power of 90W was chosen to set an ablation temperature of 100 degrees Celsius, and the ablation time was determined according to the tumour state.

1.3 Evaluation index

The clinical effective total value, the calculated value of adverse reactions, immunoglobulin (IgA, IgM, IgG), AFP (alpha-fetoprotein) of patients with primary liver cancer in the reference group and the experimental group were focused and calculated.

1.4 Evaluation criteria of efficacy

(1) The calculated values of adverse reactions mainly include lower limb oedema, infection, loss of appetite, nausea and vomiting, fever, and diarrhoea.

(2) According to the total clinically effective value, when the tumour of the treated patient is completely eliminated, and the duration is more than 4 weeks, it is judged to be significant; When the tumour shrinkage of the treated patient is more than 50%, and the duration is more than 4 weeks, it is judged as effective; When it exceeds 25% to a large extent after the treatment, it is judged to be invalid.

(3) The turbidimetric method was chosen to measure immunoglobulin (IgA, IgM, IgG), while the ELISA method was used to detect AFP.

1.5 Statistical methods

Based on the statistical software of SPSS17.0 for windows, the clinical data covered by 60 patients with primary liver cancer were input. The parameter data (IgA, IgM, IgG, AFP) expressed in the form of (mean ± standard deviation) tested by t conforms to the normal distribution; and the counting data (clinical effective total value and adverse reaction calculation value) described in the form of rate (%) would be tested by the chi-square, that is, P<0.05, indicating that the data calculation between the groups shows statistical significance.

2 Results

2.1 Compare and analyse the clinically effective total value of patients in the reference and experimental groups

By comparing 96.67% the clinical effective total value of the experimental group with 76.67% the reference group data index, $P<0.05$, indicating the calculation of data between the groups shows statistical significance.

Table 1. Comparison of clinical effective total value verification between the reference group and experimental group

Group	Number of cases	Significantly effective	Effective	Non-effective	Total clinically effective value
The experimental group	30	19	10	1	96.67%
The reference group	30	10	13	7	76.67%
X^2					5.1923
P					0.0226

2.2 Compare and analyse various clinical indicators of patients in the reference and experimental groups

By comparing indexes of IgA, IgM, IgG and AFP between the experimental group and the reference group before treatment, $P>0.05$, indicating that no statistical significance was shown. Compared with the data indexes of the reference group, the IgA, IgM, IgG, and AFP in the experimental group showed significant changes after the treatment, and the data calculation between the groups showed statistical significance ($P<0.05$); Compared with the IgA, IgM, IgG, and AFP in both groups before the treatment, $P<0.05$, indicating the data calculation between the groups showed statistical significance.

Table 2. Comparison of various clinical indicators between the reference group and the experimental group

Group	Number of cases	IgA (g / L)	IgM (g / L)	IgG (g / L)	AFP (g / L)
The experimental group	30				
Before the treatment		4.21±0.98	1.11±0.69	10.21±1.61	478.54±11.37
After the treatment		4.79±0.12#*	2.81±0.02#*	22.54±1.20#*	84.54±3.54#*
The reference group	30				
Before the treatment		4.22±0.95	1.12±0.71	10.24±2.62	479.54±12.32
After the treatment		4.44±0.11#*	1.84±0.05#*	15.54±1.01#*	95.54±4.32#*

Note: Compared with that before the treatment, * $P<0.05$; While compared with that of the reference group, # $P<0.05$

2.3 Compare and analyse the calculated values of adverse reactions in patients in the reference and experimental groups

The adverse reaction calculation value of the experimental group (6.67%) was less than that of the reference group (30.00%) and $P<0.05$, indicating the data calculation between the groups showed statistical significance.

Table 3. Comparison of adverse reaction calculation value between the reference group and the experimental group

Group	Number of cases	Lower limb edema	Infection	Nausea and vomiting	Anorexia	Fever	Diarrhea	Adverse reaction calculation value
The experimental group	30	0	0	1	1	0	0	6.67%
The reference group	30	1	1	1	4	1	1	30.00%
X^2								5.4545
P								0.0195

3 Discussion

The clinical symptoms of early onset of patients with primary liver cancer are not obvious. Therefore, most are found in the middle and advanced stages, easily associated with ascites and cirrhosis, which would further increase the difficulty of surgical resection[2]. Patients with primary liver cancer disease have a survival time of less than 6 months, and the survival time is only about 39.50% within three years[3]. With the development and progress of medical technology, interventional embolization chemotherapy and radiofrequency ablation widely used nowadays is a non-surgical treatment of tumours. The use of the interventional embolization chemotherapy alone has a lower effect, because interventional embolization chemotherapy generally depends on embolizing the hepatic artery, placing anti-tumour drugs, and cannot completely stop the blood supply of tumour tissue, which is prone to liver cancer metastasis and recurrence[4]. Liver cancer cells are relatively sensitive to heat. For example, when the tissue temperature is close to 100 degrees Celsius, the tumour tissue is carbonized. Based on CT, the location and number of tumours are determined, and radiofrequency ablation is used to treat residual cancer cells by interventional chemotherapy. The reduction will increase the toxicity of interventional embolization chemotherapy, promote tumour tissue necrosis, and play a therapeutic role[5]. As a new type of anti-tumour drug, lobaplatin does not require the diuretic and hydration treatment during the treatment, and there are fewer adverse reactions[6-8].

The results showed that the calculated values of the adverse reactions, IgA, IgM, IgG, AFP and the clinically effective total values of the experimental group were compared with the data indexes of the reference group (P<0.05).

Based on the above conclusions, compared with the combination of cis-platinum interventional chemoembolization and radiofrequency ablation in patients with primary liver cancer, the lobaplatin interventional chemoembolization and radiofrequency ablation has more advantages.

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