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Efficacy and Safety of Paclitaxel and Cisplatin in the Treatment of Advanced Ovarian Cancer by Different Means of Administration

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Abstract: In the treatment of advanced ovarian cancer, paclitaxel and cisplatin are administered in different ways. This paper discusses the efficacy and safety of this approach. Methods: Data were searched through literature, and classified discussion was conducted on this basis. The experimental group and the control group were treated in different ways, and the analysis was carried out by way of comparison, so as to explore the therapeutic effect of drug administration route on advanced ovarian cancer patients. Results: After the completion of the statistical survey, the experimental group was compared with the control group by intravenous infusion after using the new administration method. In terms of the results, the intraperitoneal infusion method had a better effect on the treatment of patients. In terms of the data, this method could effectively improve the long-term survival rate of patients. However, in terms of hepatorenal and peripheral neurotoxicity, intraperitoneal perfusion was more toxic. In terms of musculoarthralgia, the type of intraperitoneal perfusion, has a much greater effect on the patient. Conclusions: Intraperitoneal perfusion has positive therapeutic effects in patients with advanced ovarian cancer, but it is more burdsome to the body. Therefore, in the process of use, we should make comprehensive selection according to the specific situation of patients.

Keywords: Paclitaxel; Advanced Ovarian Cancer; Safety Study

1. Introduction

Nowadays, ovarian cancer is the most common cancer in women. According to relevant statistics, the incidence of ovarian cancer has reached the third. Chemotherapy is one of the main treatments in cancer treatment, as is the case in ovarian cancer treatment. In the application of drugs against ovarian cancer, paclitaxel and cisplatin combined administration, which is also the international commonly used treatment means. The usual way to administer the drug is by intravenous infusion. However, in recent years, the new method of drug administration through intraperitoneal perfusion is not uniform in the practical application research due to its short development time, so the outcome and relevant indicators are not uniform. There is no unified report on this method of drug administration at present, and the persuasive power of relevant research reports is mostly limited. In this paper, a meta-analysis was carried out. Conventional intravenous administration was used as a reference control to discuss the efficacy of the new administration, so as to provide theoretical reference for this study. In this paper, a meta-analysis was carried out. Conventional intravenous administration was used as a reference control to discuss the efficacy of the new administration, so as to provide theoretical reference for this study.

2. Materials and methods

2.1 General information

A total of 90 patients with advanced ovarian cancer admitted by a hospital from October 2009 to March 2011 were selected to conduct the study after obtaining the consent of the patients and their families.

2.2 Inclusion criteria

Among the enrolled patients, ovarian cancer was identified first and no other antitumor regimens had been used prior to treatment. Among these patients, treatment with other drugs was required in addition to paclitaxel and cisplatin. Patients who needed other treatments besides chemotherapy were also excluded. At the time of patient selection, a comprehensive review of the patient's condition should be carried out first to ensure that the patient can survive for more than three months and be included in the range. All the patients involved had a full understanding of the treatment plan, agreed to the implementation of the plan, and signed a written explanation.

2.3 Experimental methods

In the treatment, the control group was given conventional intravenous infusion. The experimental group was given the drug by intraperitoneal perfusion. In addition, the treatment plan and symptoms of the patients were consistent.

In the control group, patients were first treated with an intravenous drip of paclitaxel at 135 mg/m2.After completion of the injection, cisplatin was administered 24 hours later at 75 mg /m2.

In the experimental group, patients were first treated with an intravenous drip of paclitaxel, which was similar to the control group at 135 mg /m2. Again, 24 hours later, the patient was intraperitoneally instilled with cisplatin at 100mg/m2. Eight days after the completion of this treatment, the patient was given a second intraperitoneal infusion of 60 mg /m2 paclitaxel. Before intraperitoneal perfusion operation, patients need to pump ascites to avoid affecting the effect of drugs. The drug was then mixed with warm saline, about 1L of which was used for intraperitoneal perfusion. During intraperitoneal perfusion, patients need to change their position every 30 minutes. The overall length of the infusion is about two hours to ensure that the drug is evenly distributed in the patient's abdominal cavity. In the process of drug administration to patients, appropriate amount of relevant operations, such as hydration, diuresis, etc. Before giving paclitaxel to patients, a certain amount of dexamethasone is injected. In the 6- and 12-hour time periods before the patient starts treatment, patients were given 7.5mg of dexamethasone. Not only that, but diphenhydramine is given half an hour before administration. The dose is 25mg and is given intramuscular. At the same time, cimetidine was injected intravenously with a dosage of 300mg.The goal of this series of measures is to prevent patients from developing allergic reactions to paclitaxel. Blood pressure, heart rate and other data were measured every half an hour after the patients were given paclitaxel. Ondansetron is administered intravenously at 8mg prior to chemotherapy. After medication, the patient's circulatory system and non-hematological adverse reactions were observed. The overall length of treatment was nine weeks, divided into three sessions, each lasting three weeks. After the completion of the treatment, the clinical effect of the patients and the occurrence of adverse reactions, etc. were observed and counted[1].

2.4 Control indicators

In terms of indexes control, there were short-term effects, long-term survival rate of patients, medication safety, etc. The condition of the patients was examined in a comprehensive way and the clinical efficacy was evaluated. Its standard according to the World Health Organization standard, the patient's diagnosis and treatment effect is divided into four grades, respectively: Complete remission: The patient's lesion was completely eradicated and there was no new disease for more than 4 weeks; Partial remission: The patient's lesion at examination was less than half of the extent before treatment, and there was no evidence of sustained increase; Stable: There is no significant change in the condition before and after treatment; Progression: The disease is further expanded, and even new lesions appear.

In the classification of adverse reactions in patients, the World Health Organization standard is still adopted to classify the symptoms of adverse reactions in patients into grades 0–IV. The adverse reactions of chemotherapy were strong, mainly manifested as leukopenia and significant reduction of hemoglobin. In addition, hair loss, myalgia and arthralgia, renal injury, and peripheral neurotoxicity, are also common adverse reaction symptoms[2].

3. Statisticalresults

In the process of carrying out the comparative experiment on these patients, in order to ensure the acquisition of data, all patients in the two groups participating in the experiment should have routine blood examination. The frequency of the examination cycle should be controlled at 1-2 times a week. And the data of patients' liver and kidney functions should also be counted. Therefore, before the course of treatment, the patients need to be led to check the liver and kidney functions. After the treatment, the patients' physical conditions should be checked again comprehensively. The specific statistical data are as follows.

Table 1.Comparison of curative effect between the two groups [%]

Group	Number	Completeremission	Partial remission	Stable	Progression	Effective rate
Control group	45	13 (28.89)	15 (33.33)	12 (26.67)	5 (11.11)	28 (62.22)
Experimental group	45	17 (37.78)	22 (48.89)	5 (11.11)	1 (2.22)	39 (86.87)

In the final results, the quality of body recovery in the experimental group was significantly higher than that in the control group. In addition to the effective rate of patients after the completion of treatment, the adverse reactions of patients and other aspects also need to be counted, and the specific data information is shown below.

Table 2.Adverse reactions in control group were compared [%]

Adverse reactions	I	II	III	IV	Total
Leukopenia	11 (24.44)	8 (17.78)	0 (0.00)	0 (0.00)	19 (42.22)
Hemoglobin reduction	8 (17.78)	5 (11.11)	0 (0.00)	0 (0.00)	13 (28.89)
Thrombocytopenia	2 (4.44)	5 (11.11)	0 (0.00)	0 (0.00)	7 (15.56)
Alopecia	7 (15.56)	5 (11.11)	5 (11.11)	0 (0.00)	17 (37.78)
Myalgia and arthralgia	5 (11.11)	2 (4.44)	3 (6.67)	0 (0.00)	10 (22.22)
Renal injury	3 (6.67)	3 (6.67)	0 (0.00)	0 (0.00)	6 (13.13)
Neurovirulence	4 (8.89)	1 (2.22)	0 (0.00)	0 (0.00)	5 (11.11)
Nausea and vomiting	6 (13.13)	6 (13.13)	1 (2.22)	0 (0.00)	13 (28.89)

Table 3.Adverse reactions in experimental group were compared [%]

Adverse reactions	I	II	III	IV	Total
Leukopenia	23(51.11)	13 (28.89)	0 (0.00)	0 (0.00)	38 (84.44)
Hemoglobin reduction	16(35.56)	5 (11.11)	3 (6.67)	2 (4.44)	26 (57.78)
Thrombocytopenia	3 (6.67)	6 (13.13)	2 (4.44)	0 (0.00)	11 (24.44)
Alopecia	12 (26.67)	8 (17.78)	3 (6.67)	2 (4.44)	25 (55.26)
Myalgia and arthralgia	5 (11.11)	2 (4.44)	3 (6.67)	0 (0.00)	10 (22.22)
Renal injury	4 (8.89)	3 (6.67)	3 (6.67)	0 (0.00)	6 (13.13)
Neurovirulence	5 (11.11)	5 (11.11)	7 (15.56)	0 (0.00)	12 (26.67)
Nausea and vomiting	7 (15.56)	6 (13.13)	3 (6.67)	1 (2.22)	17 (37.78)

During the treatment of patients, the incidences of adverse reactions in patients ware statistically analyzed. It can be concluded from the above statistical tables that the performance of adverse reactions in patients with intraperitoneal perfusion was significantly reduced.

Table 4. Comparison of survival time cycle of patients

Group	Number	One year	Three years
Control group	45	30 (66.67)	17 (27.78)
Experimental group	45	38 (84.44)	27 (60.00)

After the completion of treatment, the survival time cycle of the patients after treatment was counted. The above table shows that the survival time performance of the patients in the experimental group is better than that of the patients in the control group.

4. Discussion

In gynaecology, ovarian cancer is one of the common tumors. Not only that, when this disease is found, most of

the results are in the late stage. Among the treatment programs in recent years, platinum drugs are the commonly used drugs. On the whole, the therapeutic effect of this drug is relatively obvious[3]. But the vast majority of patients still die because of drug resistance in their tumors. Paclitaxel is a kind of drug obtained by purifying the bark of purple shirt. In terms of drug classification, it is a semi-synthetic drug[4]. It is widely used in the treatment of ovarian cancer, but when used alone, its effectiveness is often low.

From the perspective of biological analysis, ovarian cancer is a disease with the nature of abdominal metastasis[5]. When chemotherapy is administered to patients, intraperitoneal infusion is more direct than traditional intravenous infusion, and can directly affect the tumor at higher concentrations[6].And in terms of the experimental data results, this way has less impact on the patients' body and has fewer side effects. In terms of overall therapeutic outcomes, patients survived longer after intraperitoneal perfusion[7].It also suggests that this approach is more effective in treating patients than the traditional full injection approach. The drugs acted on the patients' lesions directly through the mucosa without venous blood circulation. In terms of the final therapeutic effect[8], the results were relatively good. However, from the perspective of adverse reactions in patients, such intraperitoneal perfusion administration significantly increased the incidence of adverse reactions in patients[9].In this case, it may be because the drug is absorbed more slowly, or because the dosage is higher. From the perspective of the survival time of patients undergoing implantation, this method is effective[10], and the way of administration can be adjusted comprehensively according to the physical conditions of patients.

Conclusion: Intraperitoneal perfusion can significantly improve the therapeutic effect of patients, but the incidence of adverse reactions in patients is significantly increased. Therefore, in the process of use, the patient’s physical condition should be taken into account, and then it should be promoted vigorously as long as the patient and their condition are acceptable.

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