

# The Effect of Radiotherapy Assisted Targeted Therapy on the Efficacy, Immune Function and Quality of Life of Patients with Non Small Cell Lung Cancer

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**Abstract:** Objective: To explore the effect of radiotherapy assisted targeted therapy on the efficacy, immune function and quality of life of patients with non-small cell lung cancer. Methods: a total of 100 patients with NSCLC admitted to our hospital from March 2018 to July 2019 were randomly divided into two groups each with 50 people: the observation group (radiotherapy assisted targeted therapy) and the control group (conventional radiotherapy and chemotherapy combined therapy). Results: compared with the control group (62%), the total effective rate of the observation group (82%) was higher ( $P < 0.05$ ); after treatment, the CD3 +, CD4 +, CD4 + / CD8 + of the observation group was higher than that of the control group, and CD8 + was lower than that of the control group ( $P < 0.05$ ); and the scores of each index of quality of life were higher ( $P < 0.05$ ). Conclusion: After the radiotherapy assisted targeted therapy for patients with NSCLC, it can improve the therapeutic effect, enhance the cellular immune function and improve the quality of life of patients with NSCLC.

## 1. Introduction

Lung cancer is a malignant tumor with high incidence rate and mortality in clinical practice. With the increasing incidence rate, the clinical treatment of lung cancer has begun to be highly valued and concerned. At present stage, the main clinical treatment is radiotherapy and chemotherapy for lung cancer patients. Among them, GP chemotherapy has a very significant inhibitory effect on tumor cells, but it will damage the normal cells of the body to a large extent <sup>[1]</sup>. In recent years, targeted therapy has been widely used in clinical practice <sup>[2]</sup>. This paper mainly explores the effect of radiotherapy assisted targeted therapy on the efficacy, immune function and quality of life of patients with non-small cell lung cancer.

## 2. Data and Methods

### 2.1 General Data

From March 2018 to July 2019, 100 patients with non-small cell lung cancer in our hospital were randomly divided into observation group and control group with 50 in each group. In the observation group, there were 26 males and 24 females, with an average age of  $(66.38 \pm 9.15)$  years; in the control group, there were 29 males and 21 females, with an average age of  $(65.67 \pm 7.18)$  years. There was no difference in two group's general data ( $P > 0.05$ ) so them can be compared.

### 2.2 Methods

The control group was treated with conventional radiotherapy and chemotherapy. The radiotherapy method was three-dimensional conformal radiotherapy. CT was aimed at the chest of the patient, and simulated localization machine scanning was carried out. The planned target area and clinical target area were divided and irradiated. 2.0Gy was the dose of each irradiation, 5 times a week, and 4 weeks of continuous treatment. Chemotherapy method: 1.0g/m<sup>2</sup> gemcitabine was

added into 250ml 0.9% sodium chloride injection, and the patients were given intravenous drip treatment on the first and eighth days; 30mg / m<sup>2</sup> cisplatin was added into 250ml 0.9% sodium chloride injection, and the patients were given intravenous drip treatment on the second and fourth days. After the completion of the above radiotherapy, the observation group was also given targeted treatment; the dose of icotinib was 125mg, three times a day, for four weeks of continuous treatment.

### 2.3 Observation Index

The therapeutic efficacy, immune function and quality of life were compared. Flow cytometer was used to detect T lymphocyte subsets, including CD3 +, CD4 +, CD8 + and (CD4 +) / (CD8 +) ratio.

### 2.4 Efficacy Evaluation Criteria<sup>[3]</sup>

After 3 weeks of treatment, when the cancer focus is eliminated, it will be completely relieved; after 3 weeks of treatment, the clinical symptoms will be obviously relieved, and when the tumor decreases by more than 1 / 2, it will be relieved; To a certain extent, it improves the clinical symptoms, when the tumor decreases by less than 1 / 2, it means the condition is stable; Further aggravation of the patient's condition is the progress of the disease.

### 2.5 Statistical Analysis

Using SPSS22.0 statistical software, with “( $\bar{x} \pm s$ )”, [n%], the “t”, “x<sup>2</sup>” test, P < 0.05 for the difference was statistically significant.

## 3. Results

### 3.1 The Total Effective Rate of Comparison Treatment: The Observation Group Was Higher Than the Control Group (P < 0.05), See Table 1.

Table 1 Treatment Efficacy Comparison [n (%)]

| Group             | Number of Cases | Complete Remission | Effective Mitigation | Stable Condition | Progress of Disease | Total Effective Rate |
|-------------------|-----------------|--------------------|----------------------|------------------|---------------------|----------------------|
| Observation Group | 50              | 14                 | 16                   | 11               | 9                   | 82% (41/50)          |
| Control Group     | 50              | 6                  | 15                   | 10               | 19                  | 62% (31/50)          |
| x <sup>2</sup>    |                 |                    |                      |                  |                     | 11.841               |
| P                 |                 |                    |                      |                  |                     | <0.05                |

3.2.T Lymphocyte Subpopulation Level Comparison: Before treatment, the difference between the two groups was not statistically significant (P > 0.05). After treatment, the CD3 +, CD4 +, CD4 + / CD8 + of the observation group was higher than that of the control group, and the CD8 + was lower than that of the control group (P < 0.05), as shown in table 2.

Table 2 Comparison of T Lymphocyte Subpopulation Level ( $\bar{x} \pm s$ )

| Inspection Index |                  | Observation Group(n=50) | Control Group(n=50) | t      | P     |
|------------------|------------------|-------------------------|---------------------|--------|-------|
| CD3+(%)          | Before treatment | 61.44±4.15              | 61.50±4.18          | 1.841  | >0.05 |
|                  | After treatment  | 75.42±5.18              | 66.25±3.63          | 9.514  | <0.05 |
| CD4+(%)          | Before treatment | 39.79±7.20              | 40.27±7.55          | 0.351  | >0.05 |
|                  | After treatment  | 52.35±5.70              | 47.33±7.54          | 14.204 | <0.05 |
| CD8+(%)          | Before treatment | 35.43±1.98              | 34.27±1.96          | 3.510  | >0.05 |
|                  | After treatment  | 25.64±3.44              | 29.83±1.73          | 15.213 | <0.05 |
| CD4+/CD8+        | Before treatment | 2.13±0.58               | 1.25±0.55           | 0.312  | >0.05 |
|                  | After treatment  | 1.90±0.42               | 1.41±0.56           | 11.635 | <0.05 |

### 3.2 Comparison of Quality of Life: The Score of the Observation Group Was Higher Than That of the Control Group (P < 0.05), as Shown in Table 3.

Table 3 Comparison of Quality of Life ( $\bar{x} \pm s$ )

| Inspection Index       | Observation Group(n=50) | Control Group(n=50) | t      | P     |
|------------------------|-------------------------|---------------------|--------|-------|
| Mental Health          | 92.18±5.32              | 79.24±5.44          | 11.584 | <0.05 |
| Energy                 | 91.34±4.52              | 81.46±4.32          | 7.254  | <0.05 |
| General Condition      | 89.24±5.41              | 79.11±3.45          | 12.014 | <0.05 |
| Physical Function      | 91.02±5.37              | 79.34±4.19          | 9.658  | <0.05 |
| Physical Limitations   | 91.17±6.52              | 78.16±3.20          | 11.552 | <0.05 |
| Social Function        | 90.51±7.46              | 80.69±4.08          | 12.312 | <0.05 |
| Emotional Function     | 91.41±6.29              | 81.42±3.34          | 15.974 | <0.05 |
| Physiological Function | 92.36±5.55              | 80.22±4.19          | 12.302 | <0.05 |

## 4. Discussion

Under the influence of the continuous development of medical technology, targeted therapy has been widely used in clinic. The basis of targeted therapy is cell molecular level. It is mainly operating through selecting appropriate drugs to treat the carcinogenic points and protein molecules of the gene segments in the identified tumor cells. After the drugs reach the carcinogenic points, they can play the therapeutic role. When it kills the tumor cells, it will not harm the normal cells around the carcinogenic point<sup>[4]</sup>. Research shows that targeted drugs can effectively control tumors, and there is a low incidence of adverse reactions through targeted drug treatment, which is conducive to improving the prognosis of patients. However, at this stage, there is still a lack of relevant research on the impact of targeted drugs on patients<sup>[5]</sup>. Therefore, this paper mainly studies the influence of radiotherapy assisted targeted therapy on patients, in which icotinib is an anti-tumor drug. Its main principle of efficacy is to block the migration of tumor cells, prevent the formation of new blood vessels, accelerate the apoptosis of tumor cells, so the drug has a certain killing effect on tumor cells, but it will not affect the surrounding normal cells. It has a high therapeutic safety<sup>[6]</sup>.

In this paper, we explored the effect of radiotherapy assisted targeting therapy on the efficacy, immune function and quality of life of patients with non-small cell lung cancer. The results showed that compared with the control group, the total effective rate of the observation group was higher (96%); after treatment, the CD3 +, CD4 +, CD4 + / CD8 + of the observation group was higher than that of the control group, and CD8 + was lower than that of the control group; and the scores of each index of the quality of life were higher, all of which had statistical significance (P < 0.05). To sum up, radiotherapy assisted targeting therapy for non-small cell lung cancer patients can not only improve the therapeutic effect, enhance the cellular immune function of patients, but also improve the quality of life of patients. It is worth popularizing and applying in clinic.

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