

# Evaluation of Lipid Metabolism Regulation in the Treatment Efficacy of Elderly Patients with Prostate Cancer

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**Abstract: Objective:** To study the characteristics of elderly patients with prostate cancer, and to analyze the effect of lipid metabolism regulation on patients' treatment. **Method:** 60 elderly patients with prostate cancer were randomly selected. For the observation group, collected the data, adjusted with lipid metabolism and treated conventionally. For the control group, collected the data and treated conventionally. **Results:** PSA, TG, TC, the total effective rate and adverse reactions were significantly improved after 12 months of treatment ( $P < 0.05$ ). **Conclusion:** The effect of lipid metabolism regulation on elderly patients with prostate cancer treatment is satisfactory.

**Keywords:** Elderly; Prostate cancer; Lipid metabolism regulation

**Publication date:** January, 2020

**Publication online:** 31 January, 2020

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## 1 Introduction

The clinical incidence of malignant tumors is increasing year by year, including prostate cancer. Radiotherapy, surgery and drug castration are generally used in treatment. Multi-treatment combination can also be used. For elderly patients, they have poor physical conditions, intolerance to surgical treatment, so conventional treatment options are provided for them, which have low total effective rate of treatment and satisfaction of the patients<sup>[1]</sup>. Therefore, clinical analysis and discussion on how to treat elderly patients with

prostate cancer effectively were carried out. Studies have shown that conventional treatment for elderly patients with prostate cancer cannot effectively control the progress of the disease, and medical staff have poor acceptance, which is not recommended for patients. This article reviewed the data of 60 cases and analyzed the effect of lipid metabolism regulation in elderly patients with prostate cancer.

## 2 Information and method

### 2.1 Information

The research time was set from April 2017 to March 2018. Sixty elderly patients with prostate cancer were selected and all were informed, and the grouping is based on different treatment methods. The data of observation group: a total of 30 cases, the range of the age is from 61 to 75, the median age is 65.5. The data of control group: a total of 30 cases, the range of the age is from 62 to 74, the median age is 65.0. Comparing the data of the two groups of patients, there was no significant difference ( $P > 0.05$ ).

### 2.2 Method

Collect data from the control group and treat conventionally: choose flutamide tablets, administer 3 times a day, 0.25 g each time, and choose goserelin acetate slow-release implants, with a dosage of 3.6 ml, 28d each time. The anterior abdominal wall is treated by subcutaneous injection. A continuous medication is carried out for 12 months.

Collect data from the observation group and treat

with lipid metabolism regulation and conventional treatment. On the basis of the above treatment, take atorvastatin calcium tablets orally with 10mg each time, and continuous medication is carried out for 12 months.

### 2.3 Outcomes research

After treatment, complete remission: complete disappearance of the target lesion; partial remission: compared with baseline, the sum of the longest diameter of the tumor decreased by > 30%; stable condition: between partial remission and disease deterioration; disease deterioration: compared the minimum value detected after treatment, the sum of the longest diameter of the tumor increased by 20%, or one or more new lesions appeared. The total effective rate is the sum of the percentages of complete remission and partial

remission<sup>[2]</sup>.

### 2.4 Statistical method

SPSS SPSS22.0 software was used for data processing. Counting data were expressed as percentages.  $\chi^2$  and t test was used.  $P < 0.05$  was considered statistically significant.

### 3 Results

Compared with the control group, PSA, TG, TC, total effective rate and adverse reactions (breast feminization, muscle soreness, rash, gastrointestinal discomfort) were significantly improved 12 months after treatment ( $P < 0.05$ ). PSA, TG, TC before treatment in the two groups were compared and analyzed ( $P > 0.05$ ) (Table 1-2).

**Table 1.** Differences in data of PSA, TG, and TC between two groups

groups	PSA		TG(mmol/L)		TC(mmol/L)	
	before treatment	after treatment	before treatment	after treatment	before treatment	after treatment
observation group	22.75±2.52	7.91±0.55	1.96±0.33	1.51±0.27	7.38±1.77	4.57±0.61
control group	23.77±3.01	8.72±0.68	2.02±0.72	1.99±0.22	7.51±1.52	7.39±1.26
value <i>t</i>	1.4231	5.0727	0.4149	7.5486	0.3051	11.0335
value <i>P</i>	>0.05	<0.05	>0.05	<0.05	>0.05	<0.05

**Table 2.** Differences in total effective rate and adverse reactions between two groups

groups	complete remission	partial remission	stable condition	disease deterioration	total effective rate(%)	adverse reactions(%)
observation group	0	20	6	4	66.66	3(10.00)
control group	0	10	12	8	33.33	10(33.33)
Value $\chi^2$					6.6667	4.8118
value <i>P</i>					<0.05	<0.05

### 4 Discussion

At present, endocrine therapy is mainly used to treat prostate cancer patients, especially elderly patients. Due to the cost of drug castration and endocrine therapy, surgery is more commonly used clinically, mainly to remove testicles. After surgery, the serum androgen concentration of the patient is significantly reduced. This downward trend is irreversible, which can lead to disorders of blood glucose metabolism and lipid metabolism, and prone to endocrine and cardiovascular diseases. Therefore, it is not recommended in clinical practice. Relevant literature reports that the reason for the higher incidence of elderly patients with prostate cancer is currently unclear clinically. The important feature of patients is the change in the metabolic pattern of cellular lipids. In investigating the causes

of prostate cancer and finding effective treatments, it is reliable to study the changes of lipid metabolism and its molecular mechanism in patients with prostate cancer. With the accelerated aging of the population and changes in people's lifestyles, elderly patients with prostate cancer are becoming more and more common clinically and the number has increased year by year. In the process of cell lipid metabolism including increased lipid requirement acquisition and enhanced lipidation, there are many ways to acquire lipids for prostate cells, which should be further explored clinically. Studying the relationship between the condition and lipids of elderly patients with prostate cancer will help patients take symptomatic treatment.

In male urinary system malignancies, prostate cancer is common. In recent years, the incidence of prostate cancer has been high, which can pose a serious threat

to the life and health of men. Analysis of patients with prostate cancer found that early clinical symptoms are not typical and are not easy to detect. Therefore, few patients treated early. In the course of diagnosis, patients are generally in advanced stages, and flutamide and goserelin are generally used to treat the patient's condition, but the effect is not satisfactory. Relevant literature reports that the factors affecting the incidence of prostate cancer and the progression of the disease include hyperlipidemia<sup>[3]</sup>. For patients with prostate cancer, most of them have elevated blood lipids. Prostate cancer is a type of malignant tumor that is closely related to androgen. High levels of androgen can promote the deterioration of prostate cancer<sup>[4]</sup>. In view of the above, a lipid metabolism regulation scheme has been clinically proposed and applied to elderly patients with prostate cancer and an ideal treatment effect was achieved.

The clinical summary concludes that obesity can lead to hyperlipidemia and can promote the development of hormone-related cancers. Therefore, when evaluating the development of certain tumor types, accurate measurement of abnormal blood index should be performed. The analysis shows that the factors that aggravate the problem of hyperlipidemia include changes in human metabolic function during the tumor treatment stage and the interference of factors in the tumor itself, which forms a vicious circle. With the analysis and exploration, Modern medicine found that patients with prostate cancer belong to malignant tumor diseases. The related hormone is androgen, which belongs to the urinary system. The high level of androgen can lead to the patient's disease progression, which is the main promoting factor. Hyperlipidemia plays an important role in the disease progression. Therefore, the clinical research has discussed this issue and proposed the atorvastatin treatment.

Atorvastatin is a reductase inhibitor, which can limit the rate of cholesterol synthesis, reduce blood lipids, reduce steroid levels in tumor tissue and circulating blood, and effectively reduce androgen synthesis, which can be effective for the inhibition of the prostate cancer issue. In the lipid bilayer of the cell membrane, the main component is cholesterol, which can have a certain effect on cell signal transduction, promote tumor cell proliferation, and inhibit tumor cell apoptosis to some extent<sup>[5]</sup>. Cholesterol contains mevalonic acid. During its synthesis process, statins can inhibit not only it but also the production of intermediates, thereby inhibiting

the disease progression of patients with prostate cancer. Relevant literature reports that the use of statins can inhibit the proliferation of prostate cells combining with docetaxel, which can cause apoptosis<sup>[6]</sup>.

Data studies of this group of : PSA, TG, TC, total effective rate and adverse reactions (breast feminization, muscle soreness, rash, gastrointestinal discomfort) were significantly improved after 12 months of treatment.

It has been found through research that low-density lipoprotein, high-level cholesterol, and low-level high-density lipoprotein are risk factors for the occurrence and development of prostate cancer patients. The use of lipid metabolism regulation can effectively prevent prostate cancer. Lipid metabolism can affect the development of a variety of tumors, including prostate cancer, gastric cancer, and colorectal cancer<sup>[7]</sup>. Hyperlipidemia is a factor that promotes the progression of disease with this type of cancer. The use of lipid metabolism regulation can provide primary prevention and synergistic treatment to such diseases. The application of statins can regulate the body's energy metabolism, lipid metabolism and amino acid metabolism, significantly inhibit the proliferation of prostate cancer cells, significantly reduce the extent to which tumor cells affect surrounding normal tissues, and avoid invasion and metastasis to surrounding normal tissues<sup>[8]</sup>.

There are familial factors in patients with prostate cancer, and the occurrence of the disease is also related to the patient's susceptibility to stress, irritability, and high intake of salt. Therefore, the above factors should be noted in the process of preventing prostate cancer. A number of data studies have confirmed that in the treatment of elderly prostate cancer patients, the application of lipid metabolism regulation can significantly improve the patient's various indexes and successfully carry out clinical treatment. For gastric cancer and other cancer patients, especially elderly prostate cancer patients, the lipid metabolism affects incidence rate, which is because hyperlipidemia can lead to the occurrence of cancer and affect the progression of the disease. In the course of lipid metabolism treatment, rational selection of drugs and treatment with statins can effectively adjust the human energy metabolism, and can effectively inhibit the proliferation of prostate cancer cells with amino acid metabolism. With the in-depth treatment of patients, various treatments will be changed accordingly to control the patient's blood lipids at an ideal level, and

promote the treatment of patients' diseases.

Based on the above data, it is concluded that the effect of lipid metabolism regulation in elderly patients with prostate cancer is satisfactory, which can promote a significant improvement of the PSA, TG, TC, the total effective rate of treatment, and adverse reactions (breast feminization, muscle soreness, rash, gastrointestinal discomfort) and is worthy of clinical recommendation. This study is limited by samples, so the amount of sample selection should be increased in subsequent analysis. The conclusions are not highly clinically representative and the total clinical effectiveness data is not accurate enough, which should also be further explored in subsequent analysis.

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