CLINICAL STUDY AND NURSING EFFECT OF ZOLADEX COMBINED WITH ARIMIDEX AND CHEMOTHERAPY IN THE TREATMENT OF PREMENOPAUSAL RECURRENT METASTATIC BREAST CANCER

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ABSTRACT

Objective*: To observe the clinical effect of zoladex combined with Arimidex and chemotherapy in the treatment of premenopausal recurrent metastatic breast cancer, and summarize scientific nursing program to explore the nursing effect.*

Methods*: This study was performed on 180 patients with premenopausal recurrent metastatic breast cancer who were treated in our hospital. The patients were given zoladex combined with Arimidex and chemotherapy, also high-quality nursing was provided. The treatment effect of the patients was counted and the quality of life before and after the nursing was observed.*

Results*: The total effective rate of CR+PR+SD≥ in half a year was 77.78% by the combination of zoladex and Arimidex combined with chemotherapy. Meanwhile, after the scientific quality nursing service measures were taken, the patients' quality of life was significantly higher than that before treatment, p<0.05, with statistical significance.*

Conclusion*: The combination of zoladex and Arimidex combined with chemotherapy can achieve good therapeutic results among patients with premenopausal recurrent metastatic breast cancer.*

Keywords: *zoladex, Arimidex, combined chemotherapy, premenopausal recurrent metastatic breast cancer, nursing program.*

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Introduction

The female mammary gland is composed of skin, fibrous tissue, breast gland and fat. Breast cancer is a malignant tumor that occurs in the epithelial tissue of the mammary gland. 99% of breast cancers occur in women, and men's case accounts for only 1%. The mammary gland is not an important organ for maintaining human life. In situ breast cancer is not fatal[1-3]. However, because breast cancer cells lose the characteristics of normal cells, the cells are loosely connected and easily fallen off. Once the cancer cells fall off, the free cancer cells can spread throughout the body through the blood or lymph, forming a metastasis and endangering life. Breast cancer has now become a common tumor that threatens women's physical and mental health, a major public health problem in the current society.

Arimidex represents a new generation of non-steroidal aromatase inhibitors, and has become a first-line drug for postmenopausal recurrent metastatic breast cancer (Figure 1), but it is not suitable for premenopausal patients. Zoladex, a luteinizing hormone-releasing hormone analogue, represents an effective drug castration means that has achieved widespread success in the treatment of premenopausal recurrent metastatic breast cancer. In the treatment of patients with premenopausal advanced breast cancer, zoladex combined with tamoxifen offers significantly better effect than single use of zoladex,

while the aromatase inhibitor Arimidex is more advantageous for steroid-dependent advanced breast cancer than tamoxifen[4-5]. This study analyzed the clinical effects and nursing effects of zoladex combined with Arimidex and chemotherapy in the treatment of premenopausal recurrent metastatic breast cancer, and made the following report.

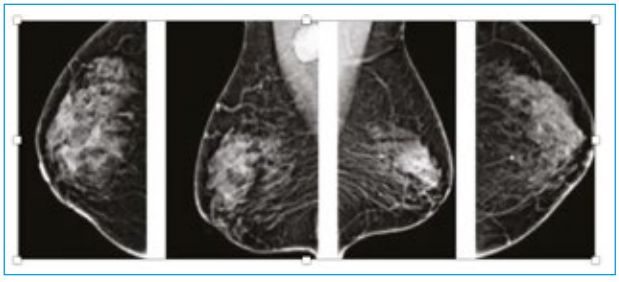

Fig. 1: Postmenopausal recurrent metastatic breast cancer.

Material and methods

General data

The study included 180 patients with premenopausal recurrent metastatic breast cancer who were treated in our hospital (Figure 2). The treatment lasted from January 2015 to May 2019. The inclusion criteria were: breast cancer confirmed by pathology, with measurable or evaluable breast cancer lesions; ER (estrogen receptor), domain PR (progesterone receptor) is positive or unknown, all can be evaluated for efficacy, before menopause or in perimenopausal. That is, the age ranged from 18 to 45 years old, or between 45 and 60 years old but the last menstrual period was within one year before the enrollment.

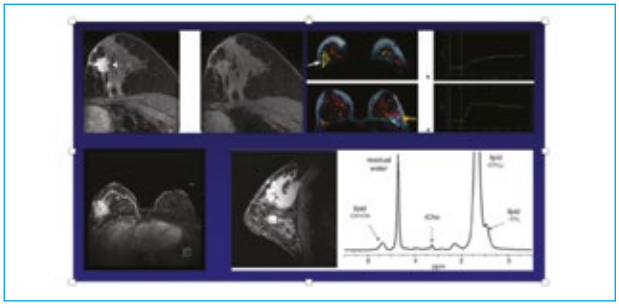

Fig. 2: MRI examination pictures of 1 patient.

For the patients in this study, there were 146 cases, 18 cases, 11 cases, and 5 cases with ER and PR positive, ER positive and PR negative, ER negative and PR positive, unknown ER and PR, respectively. At the same time, there were 50 cases and 100 cases with HER-2 (epidermal growth factor 2) high expression and HER-2 low expression, respectively. After surgery, 46 patients received adjuvant chemotherapy alone, 28 patients received adjuvant endocrine therapy, 75 patients received adjuvant chemotherapy combined with endocrine therapy, and 31 patients did not receive systemic therapy. In addition, there were 160 cases with previous chemotherapy after metastasis or relapse, including 118 patients who had received endocrine therapy and 10 patients who had never received chemotherapy or endocrine therapy.

Method

Treatment methods

Patients were instructed to follow the following medications: zoladex (produced by AstraZeneca Pharmaceutical Co., Ltd., National Medicine Permission Number J20160052) with a specification of 3.6mg was injected once every four weeks and Arimidex (produced by AstraZeneca Pharmaceuticals LP, National Medicine Permission Number J20150021) 1 mg was administered once a day, with four weeks as a cycle. After the end of the first cycle of treatment, when the lesion was DP, it was classified as early progress and the treatment was terminated. In addition, other patients continued to receive the second cycle of treatment. Patients were followed up once every two months until the disease progressed. Because of the different treatment backgrounds and conditions of the patients, different individualized chemotherapy regimens were implemented, mainly involving chemotherapy with anthracyclines, taxanes, platinum, vinorelbine and capecitabine. The treatment programs were implemented in strict accordance with the international standard dose intensity[6]. If there is no effectiveness or progression, replace it with other chemotherapy regimens, and there are totally six courses.

Among them, Arimidex (anastrozole tablets), chemical name: 2,2'-(5-(1H-1,2,4-tripyrrole-1-yl-methyl)-1,3-phenylene) Bis(2--methyl-propionitril), the structural formula: Molecular formula: C 17H 19N 5, molecular weight: 293.4, is suitable for the treatment of advanced breast cancer in postmenopausal women. For patients with estrogen receptor negative, if they are clinically positive for tamoxifen, this product can be considered. It is suitable for adjuvant treatment of early-stage breast cancer with estrogen receptor-positive in postmenopausal women. Pharmacological action: ATC code: L02B G03 (enzyme inhibitor). This product is a highly efficient, highly selective non-

steroidal aromatase inhibitor. Zoladex's main ingredient is goserelin acetate, and its adjuvant is glycolide-lactide polymer and acetic acid. It is a polymer sustained-release implant that can be gradually biodegraded in the body, which is suitable for the treatment of breast cancer in premenopausal and perimenopausal women.

Nursing methods

Quality nursing was given to all the patients as follows. First, admission education, where the nursing staff introduces breast cancer knowledge to the patients and their families so that a correct understanding is formed. Second, psychological nursing: since breast cancer patients often have negative psychological emotions, nursing staff should provide targeted psychological counseling after reasonable evaluation so that patients can maintain a positive and optimistic attitude and receive treatment, and can adapt to changes in their physical form. Third, diet nursing: in the course of treatment and chemotherapy, a scientific diet plan is developed for patients, and they are instructed about vitamin supplements, proteins, calories, and eating more fresh fruits and vegetables to ensure balanced nutrition. Fourth, health care: during chemotherapy, the patients are advised to develop warmth, pay attention to proper outdoor sports, promote metabolism and enhance body resistance. Fifth, integrated quality nursing, that is, to nurse the patient from a holistic perspective, to provide targeted nursing for the existing and potential problems of the disease so that the patients receive treatment in the pre-warm ward environment, which will improve the rehabilitation speed.

Observation indicators

The patient's treatment effectiveness was evaluated using solid tumor evaluation criteria, including CR (complete remission), PR (partial remission), DP (stability), and SD (progression). The patient's adverse drug reaction rate was also recorded. The SF-36 scale was adopted to objectively assess the quality of life of the two groups.

Statistical methods

Using SPSS21.0 statistical software, the measurement data were expressed by mean ± average ($\bar{x}\pm s$), and the count data were expressed by (n, %), and t and X2 were used for comparison between groups. When $p < 0.05$, it was statistically significant.

Results

The patient's treatment effect

Table 1 shows the overall treatment effectiveness of 180 patients.

Efficacy	Case number (n)	Percentage (%)
CR	0	0.00
PR	40	22.22
CR+PR+SD≥half year	140	77.78

Table 1: Treatment effect of 180 patients [n (%)].

Comparison of quality of life before and after nursing

As shown in Table 2, observation of the quality of life of the patients after nursing shows that the results are significantly better after the nursing, $p<0.05$, with statistical significance.

Time	Number of cases	Physiology	Emotional function	Social function	General health state	Mental function	Vigor
Before nursing	180	79.80±3.25	78.96±3.20	82.35±2.18	60.78±3.22	75.63±4.02	65.79±2.04
After nursing	180	72.20±2.46	66.88±2.58	73.20±2.59	49.06±3.01	65.80±2.06	55.49±3.28
t		6.70	20.19	6.79	8.53	11.22	13.27
p		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05

Table 2: Comparison of quality of life indicators of patients ($\bar{x}\pm s$).

Adverse reaction rate results

The adverse reaction rate of the patients was counted. Among the 180 patients, 56 patients had adverse reactions, including fatigue, hot flashes, hidrosis and joint pain, but all were in grade 1 with good tolerance. No special treatment was given.

Discussion

The current goal of treating recurrent metastatic breast cancer is to minimize or stop tumor growth and effectively improve the quality of life of patients. Arimidex is a first-line drug for the treatment of postmenopausal advanced breast cancer, which is highly selective, and it does not affect aldosterone and corticosteroid levels at ten times of therapeutic dose[7]. In addition, Arimidex has good tolerance, which is easy to use with good results. Some foreign clinical trials have confirmed that[8] Arimidex has an ideal effect in the salvage treatment of advanced metastatic breast cancer, and various endocrine drugs such as AG (Aminoglutethimide), MA (Megestrol) and TAM (tamoxifen), etc. have a very obvious effect in terms of TTP (disease progression time), TTF (treatment failure time).

The adult female hypothalamus can secrete gonadotropin-releasing hormone. Combining

the corresponding receptor on the pituitary cell membrane, the pituitary gland releases luteinizing hormone (LH) and follicle stimulating hormone (FSH), which acts in the ovary and simultaneously releases estrogen. As a luteinizing hormone-releasing hormone analogue, zoladex can bind to the pituitary luteinizing hormone releasing hormone (LH-RH) receptor, inhibit the secretion of LH and FSH, construct a reversible inhibition of LH and FSH secretion, and play a selective drug-induced pituitary resection role. At the same time, these drugs have the advantages of high efficiency and small side effects in the treatment of premenopausal women, which can be taken as an ideal choice for some patients with premenopausal breast cancer. Some experiments also indicate that[9], zoladex treatment of advanced metastatic breast cancer has an effect equivalent to oophorectomy, which is easy to be accepted by patients, so premenopausal patients can take zoladex to temporarily block menstruation, and then use aromatase inhibitor.

In this study, the hormone level of some patients was detected. When zoladex combined with Arimidex was used for four to seven days, there was a transient increase in hormone levels, but it was basically lower than that before treatment in the second week. This link has not affected the efficacy. By performing the combination of zoladex and Arimidex with chemotherapy, the total effective rate of CR+PR+SD≥ for half a year was 77.78%. At the same time, after the scientific quality nursing service measures, the patient's quality of life had a significant improvement compared to that before treatment, $p<0.05$, with statistical significance. The results were relatively consistent with those of relevant research at home and abroad[10].

Conclusion

In summary, treatment of premenopausal recurrent metastatic breast cancer patients with the combination of zoladex and Arimidex with chemotherapy can achieve good therapeutic results. This treatment program has not increased the side effects of the treatment due to the combination of the two drugs. Therefore, it is possible to recommend zoladex combined with Arimidex and chemotherapy as a first-line treatment for premenopausal patients with hormone-dependent advanced breast cancer. In addition, a combined scientific nursing program is an important way to help patients improve the treatment effect, which can help patients effectively improve their quality of life. However, given the small sample size of this study, more large-sample size data studies are needed in the future for a full demonstration.

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