Health Management of Breast Cancer Survivors

Min Li
Juan Chen
Zhendong Chen

Department of Oncology, the First Affiliated Hospital of Anhui Medical University, Hefei 20022, Anhui Province, China.

Correspondence to: Zhendong Chen
E-mail: chenzhendong@cso.org.cn

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E-mail: 2008cocr@gmail.com
Tel (Fax): 86-22-2352 2919

ABSTRACT Breast cancer is defined as a chronic disease. Increasing amounts of attention have been paid to the health management of breast cancer survivors. An important issue is how to find the most appropriate method of follow-up in order to detect long-term complications of treatment, local recurrence and distant metastasis and to administer appropriate treatment to the survivors with recurrence in a timely fashion. Different oncology organizations have published guidelines for following up breast cancer survivors. However, there are few articles on this issue in China. Using the published follow-up guidelines, we analyzed their main limitations and discussed the content, follow-up interval and economic benefits of following up breast cancer survivors in an effort to provide suggestions to physicians. Based on a large number of clinical trials, we discussed the role of physical examination, mammography, liver echograph, chest radiography, bone scan and so on. We evaluated the effects of the above factors on detection of distant disease, survival time, improvement in quality of life and time to diagnosis of recurrence. The results of follow-up carried out by oncologists and primary health care physicians were compared. We also analyzed the correlation factors for the cost of such follow-up. It appears that follow-up for breast cancer survivors can be carried out effectively by trained primary health care physicians. If anything unusual arises, the patients should be transferred to specialists.

KEY WORDS: breast cancer survivor, health management.

Introduction

At present, due to the advanced medical technology, the 5-year survival rate of the patients with breast cancer has reached up to 72% globally[1]. With the increasing number of the breast cancer survivors, more and more attention has been driven to the issue of the health management of these survivors. An important issue is how to find the most appropriate way of follow-up in order to detect the long-term complications of treatment, local recurrence and distant metastasis and give survivors treatment timely. The main content of this article is to discuss this issue.

Follow-up Guidelines of Different Cancer Organizations

International Union against Cancer (UICC)

History taking and physical examination every 3-4 months for the first 2 years are recommended[2], then every 6 months for the next...
3 years and then annually. A yearly mammographic evaluation should be performed to screen second primary breast cancer. Symptomatic patients should have comprehensive and relevant examinations to identify complications and to exclude recurrence or metastasis. Assess the pre-menopausal women’s risk of osteoporosis. Because of conventional ultrasound and endometrial biopsy showing a high rate of false positive, they are not routinely recommended for asymptomatic women taking tamoxifen unless vaginal bleeding.

**European Society for Medical Oncology (ESMO)**

For the survivors of the primary breast cancer\(^\text{[5]}\), history taking, eliciting symptoms and physical examination are recommended as follows, every 3-6 months for the first 3 years, then every 6-12 months for the following 3 years, and then annually, with attention being paid to long-term side effects, e.g. osteoporosis. Ipsilateral (after breast-conserving surgery) and contralateral mammography every 1-2 years is recommended. For the asymptomatic patients, the examinations of blood counts, chemistry, chest X-ray, bone scan, liver ultrasound, CT scans of chest and abdomen, and any tumor markers such as CA153 or CEA are not routinely recommended.

For the patients with local recurrence or metastasis of breast cancer\(^\text{[6]}\), the regular follow-up after the treatment against the local-regional recurrence may be carried out at the same frequency as those for primary breast cancer patients. Patients must be seen frequently and receive the best way for symptom control so as to promote quality of life.

**National Comprehensive Cancer Network (NCCN)**

For the patients with lobular carcinoma in situ\(^\text{[5]}\), the interval history taking and physical examination every 6-12 months and mammogram every 12 months, unless post-bilateral mastectomy, should be done. For the patients with ductal carcinoma in situ, there some recommendations as follows, the interval history taking and physical examination every 6-12 months for the first 5 years, and then annually, and mammogram every 12 months. For the patients with invasive breast cancer, the follow-up examinations include the interval history taking and physical examination every 4-6 months for the first 5 years and then every 12 months, and the mammogram every 12 months (6-12 months post-radiation therapy if breast conserved). If the women take tamoxifen, the gynecologic assessments need to be done every 12 months if uterus is remained. If the women have aromatase inhibitor or experience ovarian failure secondary to the treatment against breast cancer, they need monitoring of bone density, at the same time, the compliance of the patients to adjuvant endocrine therapy should be assessed and persistent treatment is encouraged.

**World Health Organization (WHO)**

History taking and physical examination are recommended every 3-6 months for the first 3 years\(^\text{[6]}\), every 6-12 months for the next 2 years and then annually, with attention paid to long-term side effects, such as, osteoporosis. Ipsilateral (after breast-conserving surgery) or contralateral mammography need to be done every 1-2 years. Blood counts, chemistry, chest X-rays, bone scans, liver ultrasound, CT scans on chest and abdomen, and monitoring of tumor markers such as CA153 and CEA are not routinely recommended for asymptomatic patients. Because of the risk of tamoxifen-associated endometrial cancer, a yearly pelvic examination coupled with evaluation of vaginal spotting is essential. The performance of endometrial biopsy or ultrasound is not recommended.

**American Society of Clinical Oncology (ASCO)**

All patients should have a careful history taking and physical examination performed by a physician experienced in the surveillance of cancer patients and in breast examination\(^\text{[7]}\). Examinations should be performed every 3-6 months for the first 3 years, every 6-12 months for the following 4 and 5 years, and annually thereafter. For those who have undergone breast-conserving surgery, a post-treatment mammogram should be obtained 1 year after the initial mammogram and at least 6 months after completion of radiation therapy. Thereafter, unless otherwise indicated, a yearly mammographic evaluation should be performed. The use of CBCs, chemistry panels, bone scans, chest radiographs, liver ultrasound, computed tomography scans, 18F-fluorodeoxyglucose positron emission tomography scanning, magnetic resonance imaging, or tumor markers (carcinoembryonic antigen, CA153, and CA27.29) is not recommended for routine follow-up of breast cancer patients in an otherwise asymptomatic patient with no specific findings on clinical examination.

The follow-up guidelines of different oncology organizations have recommended the performances of history taking, physical examination and mammogram as basic contents of the follow-up, and meanwhile suggested to assess the risk of osteoporosis for the patients who take aromatase inhibitors. NCCN has set up the follow-up guidelines depending on different pathological types. But different agencies who carry out the follow-up work have different views on the interval of monitoring endometrial cancer. Some other issues have still existed, such as, which follow-up could detect the long-term complications of treatment, local recurrence and distant metastasis and give survivors treatment timely at a minimum cost. Whether or not, is sufficient to just carry out the projects recommended by guidelines and why not to recommend some common contents in clinical practice. We will discuss these issues in the following part.