

ACUPUNCTURE AND BREAST CANCER

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Abstract:

Breast cancer is the most frequent malignant disease occurring in female population in the world. The primary etiology is unknown. Early detection is achieved by screening or preventive examinations. The incidence of breast cancer in stages Tis and T1 grows and the treatment, beside the operation, includes radiation therapy and chemotherapy. Acupuncture is a healing method commonly associated with the treatment of backache, headache, muscle pain, etc. But could it be applied in the treatment of breast cancer too? This study attempts to cast more light on this issue. The author presents results of selected clinical studies.

Key words: breast cancer, chemotherapy, hormone therapy, acupuncture, natural medicine

Introduction

1 Introduction

Breast cancer is the most frequent oncological disease in female population globally, which is also the case in Slovak Republic. The latest data show there were 2,608 newly diagnosed cases of breast cancer in Slovakia in 2008 [1]. The number of the newly diagnosed cases of breast cancer gradually increases and along with it also the number of the so-called small cancers in stages Tis and T1 according to the TNM staging system and also the stage T2 according to the post-surgical histopathological classification. The most common type of treatment is a breast-preserving surgery [2], which is, depending on the final histology, followed by chemotherapy, hormone therapy and/or radiation therapy. Such treatments carry along a series of complications. In case of the surgical treatment it is the scar tissue pain, accumulation of fluid under the scar, healing *per secundam*, and lymphedema in the scar tissue after surgery.

After the chemotherapy and during the cytostatic therapy the most commonly occurring complications include digestive problems like nausea, vomiting, diarrhea, obstipation, or the loss of appetite. Further problems include hematopoiesis malfunctions, white blood cells disorders, lower immune system function, cardiotoxicity, neuralgia affecting the peripheral parts of limbs, headaches and a very broad spectrum of other side effects [3].

The symptoms of the hormone therapy in women are similar to those of the climacteric syndrome. The most common ones include hot flushes, increased perspiration, mood changes and insomnia. There are countless ways of classical conventional treatment of the mentioned symptoms and complications. During the cooperation with our colleagues from the Medical Society of Natural Medicine and contact with breast cancer patients undergoing treatment we discovered some more or less serious symptoms.

We realized that the patients could also be helped in non-pharmacologic ways. I attended the first conference of Natural Medicine and Oncology that took place on the premises of Alexander Dubček University of Trenčín on Nov.11, 2011. Repeatedly, I have been asked to make presentations on the relation between the breast cancer and natural medicine, i.e. breast cancer and acupuncture. The aim of this study is to present the results of the selected clinical studies relating to acupuncture and the treatment of breast cancer-induced complications.

2 Acupuncture

We studied literary sources available via the common research methods. Scientific studies on the use of acupuncture in cancer treatment and its side effects started to appear only recently. Laboratory studies suggest that acupuncture could reduce vomiting caused by the chemotherapy. The laboratory studies were aimed at finding out how acupuncture works in the treatment of cancer. The majority of studies on the use of acupuncture in patients with malignancy were carried out in China, which comes as no surprise [4]. Studies in humans on the effects of acupuncture on the immune system showed that acupuncture transforms it. Other studies examined how acupuncture affects pain. The clinical studies proved the reduction of pain in some cancer patients. One study claimed that the majority of patients treated with acupuncture were able to stop taking pain relievers altogether or reduce the amounts of pain relievers [5].

Findings gained from these studies cannot be considered relevant due to the small number of examined patients as well as other circumstances. A study based on strictly scientific methods is needed to showcase how acupuncture affects pain. Women diagnosed with breast cancer with a high level of progesterone and estrogen receptors are commonly treated with hormone therapy. These function as aromatase inhibitors and may result in muscle and joint pain. A random study concluded that a true acupuncture is much more effective in the reduction of joint pain or stiffness than a placebo (inactive) acupuncture in patients taking aromatase inhibitors.

The most convincing proofs of the effectiveness of acupuncture come from the clinical studies on the use of acupuncture for reduction of nausea and vomiting. Several types of clinical studies using different acupuncture methods showed that acupuncture reduces nausea and vomiting induced by chemotherapy, surgical interventions and morning sickness. It may be concluded that acupuncture is more effective in the prevention of vomiting than in the reduction of nausea. Studies on the effects of acupressure on the nausea and vomiting reduction were carried out on women treated with chemotherapy. The studies proved that the acupressure in the acupuncture points helped reduce the sickness and vomiting as well as the amount of medication used to treat these symptoms. The hormone therapy may cause hot flushes in women with breast cancer or men with prostate cancer [6].

Some studies concluded that acupuncture could positively affect the reduction of hot flushes in these patients. A randomized study of fatigue in cancer patients showed that those who underwent a series of consecutive acupuncture treatments were less tired compared to those who underwent acupressure or false (placebo) acupressure. The results of the clinical observations of cancer patients were used in the study of the effects of acupuncture on the oncological symptoms and side effects caused during the cancer treatment, which include weight loss, cough, coughing up blood, anxiety, depression, dry mouth, speech problems, esophageal obstruction, hiccups and accumulation of fluid in arms or legs. The studies showed that in many patients the acupuncture treatment either reduced the symptoms or prevented their worsening [7].

We, students of the western medicine, do not know much about acupuncture. Therefore, what follows is some basic information about acupuncture in a nutshell.

What is acupuncture? Acupuncture uses sterile, hair-thin needles, which are inserted into specific points located on the skin. These are called “acupuncture points”. These needles are then slightly positioned. Scientists agree that acupuncture stimulates the nervous system and helps the natural painkillers and other substances supporting the cells of the immune system release. These “travel” to weak parts of the body and mitigate the symptoms. Studies prove that acupuncture may:

- help reduce tiredness,
- control and mitigate hot flushes,

- help reduce sickness,
- reduce vomiting,
- reduce pain.

Along with other practices such as tai chi, acupuncture forms the central part of the traditional Chinese medicine (TCM) — the ancient system of medicine. The Chinese medicine supposes that the life energy named “qi” flows along 20 routes or “meridians” which are connected through the acupuncture points. According to TCM, when qi is blocked, the body cannot function at its best. The aim of acupuncture is to open up specific points on these routes and release the blocked qi. The effects of acupuncture and feelings of relief differ depending on the person — one may feel either relaxed, or, quite to the contrary, tense.

3 Effectiveness of acupuncture on patients with breast cancer

The results of the studies on how acupuncture may mitigate some of the symptoms of oncological diseases and reduce some of the side effects of tumor treatment proved that acupuncture may reduce fatigue, hot flushes, nausea, vomiting and pain. The most detailed study of acupuncture was published in the Journal of American Medical Association in 2000. The research was carried out on a group of 104 female patients with breast cancer undergoing chemotherapy. These patients received high doses of chemotherapy drugs and were given traditional drugs to relieve nausea and reduce vomiting (anti-emetics). Apart from the medicamentous therapy, the women were divided randomly into three groups — the first group underwent a 5-day application of electroacupuncture (a type of acupuncture in which needles are stimulated by a moderate electric current), the second group of patients underwent acupuncture without the electric current and the last group of patients did not receive any acupuncture treatment. The patients who received acupuncture had a considerably lower incidence of nausea than those who did not receive any acupuncture treatment.

Further studies completed at Duke University in the USA and published in 2002 evaluated the effectiveness of the treatment with ZOFTRAN (chemical name: ondansetron) on the reduction of nausea in comparison to the acupuncture treatment applied before the breast cancer surgery with the aim of reducing the symptoms of nausea that were expected to occur after the surgery. The results proved that acupuncture treatment was much more effective in reducing the nausea and its symptoms than ZOFTRAN.

A French study published in 2003 studied the effectiveness of acupuncture in the treatment of tumor pain. In patients who had been receiving acupuncture treatment for two months the pain was reduced by 36%, while in patients who had been treated by placebo acupuncture the pain was reduced only by 2%. Another research at the Memorial Sloan-Kettering Cancer Center in 2004 showed that acupuncture reduced fatigue by 31% in patients with various types of cancer who had been treated with chemotherapy. In 2005 a different study of patients with breast cancer in Sweden showed that acupuncture could reduce the hot flushes up to 50%. While doctors who carried out the studies consider these results encouraging, others are careful and insist that the results are still weak and require further study [5].

To a great extent the results of the aforementioned studies are hard to verify. Our medicine is based on the elementary medical principles, scientific outcomes and their application in practice. I as a radiologist do not feel competent enough to contribute to the discussion. Therefore, I reached for scientific sources.

There are many institutions in the world offering acupuncture treatment. To my best knowledge, no complex systematic overview of acupuncture used in oncological care exists either in America or Slovakia. According to the results presented at conferences of natural medicine in 2014 (Šamorín-Čilistov), 2013 (Nitra), and 2012 (Trnava), which I attended, as well as the conference in Oncology and natural medicine in 2011 in Trenčín, the effects of

acupuncture on the symptoms of cancer patients have not been explored or assessed yet. From the beginning of 2011 until December 2011 the author of this overview study searched the Medline, EMBASE, CINAHL, Cochrane (all databases), Scopus and PubMed databases for prospectively randomized clinical studies (MRC) that would assess acupuncture and its effects on the negative symptoms and side effects in the oncological care (Garcia MK et al. 2013). Only those studies which used the classical needle acupuncture and acupuncture points were assessed. The study was evaluated by the Cochrane Risk of Bias assessment tool (ROB). According to the symptoms the results were evaluated and marked either as positive, negative, or unclear. Altogether 2.151 publications were studied. 41 MRC included eight symptoms (pain, nausea, hot flushes, fatigue, xerostomy as a reaction to radiation therapy, long-lasting postoperative ileus, anxiety — mood changes and sleep disorders) and thus met the assessment criteria. One of the studies showcased the positive effects of acupuncture on the reduction of nausea induced by chemotherapy and on vomiting with the lack of ROB. Eight out of the remaining studies had an unclear ROB (4 studies with positive, 3 with negative and 1 with unclear results). Thirty-three studies had a high ROB (19 studies with positive, 11 with negative and 3 with both positive and negative results depending on the symptom). The authors of studies from the last decade of the previous century considered acupuncture as a supportive therapy used as a part of a more complex treatment of oncological diseases [8, 9].

4 Conclusion

Acupuncture is suitable in the treatment of the chemotherapy-induced nausea/vomiting, however, further research is required. In the treatment of other symptoms the effectiveness remains unknown due to the high ROB among the studies. Further research should focus on the standardization of the examined group of patients and the therapeutic methods. Typically, the studies should be “blind” - double or triple blind as they are usually carried out, without the possibility of distorting the results in advance or knowing which are using placebo and which are not. They should be assessed by a group of experts. Considering the statistical relevance, the number of the examined persons should be sufficiently high.

REFERENCES

- [1] Slobodníková J. Karcinóm prsníka mladých žien – kazuistiky, *Onkológia* 2013; 8 (6): 392-396.
- [2] Chválny P, Sabol M. Chirurgická liečba včasných štádií karcinómu prsníka. In: Slobodníková J. a kol.: *Včasná diagnostika a skrining karcinómu prsníka*, Rádiol. klinika s.r.o., 2011, 151- 163.
- [3] Špánik S. Vedľajšie účinky chemoterapie a naturálna medicína. Prezentácia. Konferencia *Onkológia a naturálna medicína*, 11.11. 2011, Trenčín.
- [4] National Cancer Institute: Questions and Answers about Acupuncture. On-line: [<http://www.cancer.gov/cancertopics/pdq/cam/acupuncture/patient/page2>] Disclaimer: "The U.S. National Cancer Institute does not currently endorse any foreign-language translations of NCI information by other organizations or individuals, and no such endorsement should be inferred".
- [5] Hervik J, Mjaland O. Acupuncture for treatment of hot flashes in breast cancer patients, a randomized, controlled trial. *Breast Cancer Res Treat* 2009; 116 (2): 311-316.
- [6] Špánik S, Špániková B. Súčasné odporúčania na liečbu bisfosfonátmi pri nádorových ochoreniach. *Onkológia* 2013; 8 (6): 366-367.
- [7] Whiteman, Honor. "Breast cancer drugs: real and fake acupuncture 'relieves side effects'." *Medical News Today*. MediLexicon, Intl., 25 Dec. 2013. Web. 1 Oct. 2014. <<http://www.medicalnewstoday.com/articles/270477.php>

- [8] Bourgeault I. Physicians' attitudes toward patients' use of alternative cancer therapies. *Can Med Assoc J* 1996; 155: 1679-1685.
- [9] Neogi T, Oza AM. Use of alternative medicine: Are we failing in our communication with patients? A study assessing psychosocial impact of alternative medicine on cancer patients. *Proc Am Soc Clin Oncol* 1998; 17: 416a (abstr 1604).