Breast cancer related lymphedema

Valorization

Introduction

Approximately one in eight women in the Netherlands will develop breast cancer during her lifetime. Fortunately, due to the implementation of population based screening programs, advancements in treatment options and increased awareness, a large proportion of these women will go on to survive the initial treatment phase. The fact that more women are successfully being treated for breast cancer has caused a shift of attention towards the period after active cancer treatment, also known as the period of survivorship. Survivorship refers to the end of active cancer therapy, a period in which late effects of cancer treatment are prevalent. In saying this, the management of the late effects of breast cancer treatment is imperative for maintaining an acceptable long-term quality of life. In the scope of upper-arm morbidities as part of the late effects of breast cancer treatment, lymphedema has the highest incidence and is perceived as disabling. Swelling of the affected arm, symptoms of heaviness, paresthesia and decreased range of motion contribute negatively to the quality of life. Between 6% - 43% of breast cancer survivors develop breast cancer related lymphedema (BCRL). Studies have revealed several patient- and treatment related risk factors for BCRL, with most evidence pointing towards the axillary lymph node dissection (ALND) as an important risk factor.

In this chapter the focus is put on the economic and societal benefits of the knowledge acquired through the studies gathered in this thesis.

Relevance of scientific results

This thesis addressed several important aspects of BCRL, such as the problems associated with its diagnosis, its effect on quality of life, and the possible role of reconstructive (breast) surgery in the pathophysiology and treatment.

Most importantly, we were able to conclude that BCRL is and will remain a relevant problem amongst breast cancer survivors. Currently, axillary staging and treatment in breast cancer patients with a clinically node negative status is becoming increasingly less invasive, thereby reducing the incidence of lymphedema of the arm. Nevertheless, in patients with a clinically node positive status, aggressive treatment will still be required for optimal oncologic control. Although this “high-risk” group of women might be small in numbers when

comparing to the women who will benefit from less extensive axillary treatment, BCRL is a chronic disease that in most cases calls for life long treatment, decrease in quality of life and potentially resulting in a economic burden. Therefore, we advice implementing a BCRL surveillance program into standard breast cancer care in order to facilitate early lymphedema treatment.

With regards to the treatment of BCRL, a structured approach is lacking in the national breast cancer standard of care. In most hospitals patients have to take the initiative themselves to seek help of a lymph therapist, as the treating physician often pays little attention to post-breast cancer treatment arm morbidities. Saying this, an integrative BCRL surveillance program that combines pre- and post operative limb measurements and patient education on lymphedema symptoms should be implemented in standard breast cancer care to assist in the early identification and treatment of lymphedema, especially for high-risk patients. Pre-operative limb measurements are especially important to allow the identification of early symptoms and of small post-operative changes in limb volume. Furthermore, the effectivity of lymphatic microsurgery to prevent or treat BCRL warrants further investigation in a randomized controlled trial (RCT) comparing it to the current gold standard of conservative therapy. With this, we will also be able to retrospectively formulate clinical criteria to select patients who will benefit mostly from new treatment strategies, including lymphatic microsurgery.

Target population

The results of this thesis are relevant for investigators in the medical field with special interest in breast cancer, morbidities related to breast cancer, lymphedema and quality of life. In addition, this thesis is of interest to (surgical) oncologists, plastic surgeons, lymphedema therapists, dedicated nurses and lymphedema-patient platforms.

Knowledge utilization and innovation

As previously mentioned, a multidisciplinary BCRL screening program should be implemented in breast cancer standard of care. This will especially be important for “high-risk” patients. Through this approach of secondary prevention of BCRL we will not only be able to treat lymphedema more

effectively but also learn more about its pathophysiology. The idea of moving away from the current so-called impairment (symptom)-based model, in which the patient is the initiative taker, towards a surveillance-based model is an innovative concept in Dutch breast cancer care. In the US a few hospitals have already adopted this approach as standard of care with evidence of being potentially cost saving compared to the traditional treatment of BCRL.

The place of lymphatic microsurgery in the treatment of BCRL is yet to be established in comparative prospective studies with a uniform patient group. This is ultimately one of the most important goals of our research group.