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The Incidence and Risk Factors for occurrence of Arm Lymphedema after Treatment of Breast Cancer

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Abstract
Background: The arm lymphedema is reported as being the most frequent late reaction and complication that influences breast cancer patients' quality of life after lymph node dissection and radiotherapy. The aim of the study is to identify the risk factors in arm lymphedema occurrence in breast cancer patients who performed radical / conservatory surgery, chemotherapy and radiotherapy.
Material and Methods: We analysed 305 breast cancer patients who underwent treatment in the „Sf. Ap. Andrei" Emergency Clinical Hospital, Galati, Radiotherapy and Oncology Department, between the 1st of January 2010 and 31st of December 2012. We tried to find the risk factors for arm lymphedema development after treatment of breast cancer: the association of adjuvant radiotherapy with surgery, chemo-therapy, hormonal therapy, number of removed lymph nodes, and number of lymph nodes with metastases, the co-morbid illnesses (obesity, diabetes mellitus and high blood pressure).
Results: Our study evidences that the association of adjuvant radiotherapy, including the lymph node regions, with radical or conservatory surgery with lymph node dissection represents a statistically significant risk factor, with relative risk, RR = 1.87, 95%C.I.=1.39–3.51, $p<0.001$. The number of removed lymph nodes was found to be a risk factor with statistical significance. For more than 25 removed lymph nodes, the relative risk for arm lymphedema development was RR=1.95 (95%C.I. =1.79–4.51) and for 16-25 removed lymph nodes the relative risk, RR = 1.78, 95% C.I. = 1.46 – 3.23. Other analysed risk factors, which did not influence lymphedema development, were: associated chemotherapy or hormonal-therapy, presence of co-morbid illnesses.
Conclusions: The development of arm lymphedema is an unpredictable occurrence that can happen years after axillary surgery. Breast and arm oedema continue to be late reactions that can be reduced by use of biopsy sentinel technique with avoiding of axillary lymph node dissection, when the sentinel lymph node is negative, knowing that lymphedema risk after sentinel lymph node is 5% comparative with lymphedema risk after axillary lymph node dissection which is 16%, by avoiding obesity, and performing modern therapy techniques.
Key words: arm lymphedema, breast neoplasm, radiotherapy, risk factors

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