

PREVALENCE OF OBESITY AND CHANGES IN LABORATORY PARAMETERS IN POSTMENOPAUSAL WOMEN WITH BREAST CANCER

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Introduction. Obesity is a risk factor (RF) for several major cancers, including breast cancer (BC) in postmenopausal women, as well as a separate independent RF for BC recurrence. Obesity is accompanied by insulin resistance, chronic inflammation, and adipokine secretion, which contribute to tumor progression, and overall survival is higher in women with BC with normal body weight.

Aim of the study. To assess the prevalence of obesity and changes in laboratory data in postmenopausal women with BC, depending on body mass index (BMI).

Materials and methods. The study involved 50 postmenopausal women with breast malignancies (ICD-10). These participants were divided into two groups based on their BMI: group 1 (n=27), with a BMI $<30 \text{ kg/m}^2$, and group 2 (n=23) with a BMI $>30 \text{ kg/m}^2$. Data analysis was made by using the 4D client program at the State Healthcare Institution "Grodno City Polyclinic No. 6". The following laboratory data and physical examination were analyzed: BMI, erythrocyte sedimentation rate (ESR), hemoglobin (Hb) levels, and glucose levels in blood plasma (BGL). We performed statistical analysis by using STATISTICA 10.0.

Results and discussion. The average age of the women with different stages of BC in our study was 66 [59; 69] years, and there were no differences in age between the groups ($p>0,05$). Only 20% of these studied women with BC (n=10) had a normal BMI of $22,6 \text{ kg/m}^2$, 34% of them (n=17) were overweight, and 46% (n=23) were obese. In the first group, the statistically average BMI was $26,4 [23,3; 28,3] \text{ kg/m}^2$ and was lower ($p<0,05$) than in group 2, having an average BMI of $34,1 [32; 37,1] \text{ kg/m}^2$. In group 2, the BGL was higher than in group 1 and was $5,4 [4,9; 7,6] \text{ Mmol/L}$ versus $4,9 [4,4; 5,4] \text{ Mmol/L}$, $p=0,02$, respectively. Hb level was also low in group 2 and was $128 [112; 134] \text{ g/L}$ if we compared this to $135 [124; 139] \text{ g/L}$ in group 1, $p=0,02$. Although if we look at group 2, only 21,7% of these participants (n=5) showed anemia of mild (n=4) or moderate severity (n=1). Moreover, a negative correlation was revealed between Hb and ESR in group 2 ($R=-0,56$, $p=0,005$).

Several correlations were uncovered in women with BC. This encompasses a positive correlation between BMI and BGL ($R=0,30$, $p=0,03$), and a negative relationship between Hb and ESR ($R=-0,53$, $p=0,0001$).

Conclusion. Thus, the conducted study showed a high prevalence of obesity (46%) in postmenopausal women with breast cancer and revealed more

significant deviations from the optimal measures in laboratory data: increased ESR, glucose and anemic syndrome.

MOST COMMON RADIOINDUCED REACTIONS OF LUNG CANCER RADIOTHERAPY

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Introduction. The treatment of lung cancer is based on multidisciplinary approach which includes surgery, radiotherapy, systemic therapies such as chemotherapy, immunotherapy and targeted agents, as well as interventional radiology and palliative care. Among these methods, radiotherapy is the only treatment method that is indicated for all stages of the disease and also possible for patients with performance status ECOG 3.

Over the years, radiotherapy has advanced rapidly. New methods include standard configuration of computed tomography on linear accelerators, stereotactic ablative body radiotherapy, intensity-modulated radiotherapy and respiratory gating. All these methods are used to decrease incidence of complications of radiotherapy that could occur due to effect to the surrounding normal tissue by large margins of radiation beam and tumour motions.

Occurrence of radiotherapy complications can be due to various reasons including, individual radiosensitivity, dose rate, comorbid status and age of the patient, type of radiation, clinical exposure volumes, and the chosen fractionation regimen. There are concepts of "radiation injuries" and "radiation reactions," which are often misinterpreted. A radiation reaction is a reversible functional or morphological change in an organ or tissue that develops within three months of the start of radiotherapy. Radiation damage is an irreversible change in an organ or tissue that often requires special treatment and occurs after radiation exposure. The concept of "toxicity" of radiation therapy (in Russian literature, "radiation complications") is considered separately, which can be acute (early, up to 6 weeks after the start of treatment) and late (after 6 weeks after the start of treatment). Acute toxicity is associated with the reaction of ionizing radiation to radio-sensitive tissues. As a rule, these tissues regenerate well and recover in a short time. Late toxicity concerns radioresistant tissues, changes in which are associated with cytolysis, microcirculatory disorders, and the formation of fibrous and sclerotic changes.

During high-precision radiotherapy of lung cancer, the most common symptoms of acute toxicity that occur during therapy are radio-induced esophagitis, pneumonitis, dermatitis, asthenic syndrome, thoracalgia and cardiotoxicity.