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972 – Analysis of lipid, physical, and inflammatory profiles in obese breast cancer patients at a tertiary hospital in Paraná

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Introduction: Breast cancer is the most prevalent and lethal malignant neoplasm among women worldwide. It is estimated that up to 40% of cases could be prevented through the modification of behavioral and metabolic factors. While obesity is a recognized risk factor, it cannot be analyzed solely by body mass index, as this parameter fails to capture muscle mass.

Objective: This study aimed to analyze the physical, lipid, and inflammatory profiles of obese women with breast cancer to enhance understanding of the relationship between obesity and neoplasia.

Methods: A prospective observational study was conducted at Hospital de Clínicas of the Federal University of Paraná with a total sample of 61 obese women (body mass index >30, aged 18–70 years) diagnosed with breast cancer. Assessment tools included the International Physical Activity Questionnaire and a full lipid panel. Adjusted calf circumference was utilized as a primary indicator of muscle mass, serving as a highly cost-effective and viable screening tool for sarcopenia in clinical practice. The neutrophil-to-lymphocyte ratio was also analyzed to identify metabolic and inflammatory correlations.

Results: Findings showed that 53.2% of participants were classified as irregularly active or sedentary. Regarding the metabolic profile, 56.7% had total cholesterol ≥ 190 mg/dL, 20% had high-density lipoproteins ≤ 40 mg/dL, 46.7% had low-density lipoproteins ≥ 130 mg/dL, and 60% showed elevated triglyceride levels. The mean neutrophil-to-lymphocyte ratio was 2.06 (standard deviation ± 0.89). Most significantly, it was observed that 34/61 patients had an adjusted calf circumference at a level indicative of sarcopenia.

Conclusion: The high prevalence of sarcopenia in this cohort demonstrates that body mass index masks a critical state of physical vulnerability. These findings show that obesity in breast cancer patients is often accompanied by significant muscle depletion. This scenario reinforces the need for a shift in clinical management, in which medical care goes beyond weight-centered approaches and actively incorporates the promotion of physical activity, recognizing exercise as a key strategy to preserve lean mass, improve metabolic health, and potentially enhance treatment outcomes.

Ethics: Research Ethics Committee Approval (CAAE 74975123.4.0000.0096).

Keywords: breast neoplasms; body mass index; sarcopenia; lipids; obesity.