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High risk of metabolic dysfunction in non-obese breast cancer survivors

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Objective: The objective of this was to evaluate the metabolic profile of non-obese women with breast cancer compared with non-obese women without cancer. **Methodology:** A cross-sectional comparative clinical study was carried out with the inclusion of 260 women (according to sample calculation). The main group consisted of 130 women with a body mass index (BMI) < 30 kg/m², with a histological diagnosis of breast cancer, stages I–III, aged between 45 and 75 years, in amenorrhea for ³12 months, and without cardiovascular disease established. The control group consisted of 130 women with the same inclusion criteria, without breast cancer. The groups were matched by age, BMI, and time since menopause and compared in a 1:1 ratio. Clinical, anthropometric, and biochemical data were collected. Women who had three or more diagnostic criteria were considered to have metabolic syndrome (MS): WC > 88 cm; triglycerides (TG) > 150 mg/dL; HDL cholesterol < 50 mg/dL; blood pressure > 130/85 mmHg; and glucose > 100 mg/dL. For statistical analysis, the Student's *t*-test, the gamma distribution (asymmetric variables), the chi-square test, and logistic regression (odds ratio – OR) were used. **Results:** In assessing the factors that affect the metabolic profile, a higher occurrence of MS and blood pressure impairment was observed among women treated for breast cancer when compared with controls (30.8% vs. 20.0%, and 25.4% vs. 14.6%, respectively) (*p* < 0.05). A higher proportion of women treated for breast cancer also had higher than desirable levels of total cholesterol and blood glucose in the comparative analysis (56.2% vs. 43.1% and 29.2% vs. 15.4%, respectively) (*p* < 0.05). In the risk analysis of metabolic dysfunction, adjusted for age and time since menopause, women with breast cancer had a significantly higher risk for MS (OR = 2.76, 95%CI 1.48–5.15), increased blood glucose OR = 2.69, 95%CI 1.46–4.96), and blood pressure (OR = 3.03, 95%CI 1.51–6.10). In the analysis of the subgroup with BMI < 25 kg/m², the main group had a higher occurrence of metabolic syndrome when compared with the group without breast cancer (*n* = 53) (17.2% vs. 1.9%, respectively, *p* = 0.007). Women with a BMI < 25 kg/m² had significantly higher values for WC (82.6 ± 8.5 vs. 79.9 ± 6.4 cm, *p* = 0.048), SBP and DBP (129.2 ± 17.1 and 77.7 ± 8.8 mmHg vs 118.2 ± 15.1 and 73.6 ± 8.8 mmHg, *p* = 0.0002 and *p* = 0.01, respectively), and blood glucose (99.7 ± 32.5 vs. 86.6 ± 7.6 mg/dL, *p* = 0.0002) when compared with women with the same BMI. **Conclusion:** Non-obese women treated for breast cancer were at high risk for metabolic dysfunction, expressed by the higher prevalence of MS, hypertension, and diabetes when compared with women without breast cancer. The risk remains in the subgroup with ideal BMI.

Keywords: breast cancer; metabolic syndrome; diabetes; hypertension; obesity.