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Obesity and breast cancer prognosis: a scoping review

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INTRODUCTION: Obesity is a chronic condition associated with metabolic and inflammatory changes that may influence breast cancer development and prognosis. Excess adipose tissue promotes systemic inflammation, hormonal dysfunction, and insulin resistance, all of which are involved in breast carcinogenesis. Given the high global prevalence of obesity, understanding its impact on breast cancer outcomes is essential for more effective clinical practice. **METHODS:** This scoping review followed PRISMA-ScR guidelines. PubMed was searched using MeSH terms related to breast cancer, obesity, and prognosis. A total of 350 studies were identified, of which 59 were included after screening by two independent reviewers. Reviews, nonoriginal studies, and mixed populations were excluded. Data were extracted and categorized into four thematic domains. **RESULTS:** Of the 59 studies, 18 associated high body mass index (BMI) with a worse prognosis, 11 found no significant association, and five suggested a better prognosis in specific subgroups. Another 18 studies reported greater toxicity, lower treatment adherence, or complications among patients with obesity. Four addressed inflammatory biomarkers as prognostic mediators, and three investigated relationships among BMI, tumor subtypes, and the microenvironment. Obesity was associated with distinct recurrence patterns, lymphedema, and variable treatment responses. **DISCUSSION:** The impact of obesity on breast cancer is multifactorial and influenced by menopausal status, tumor subtype, and comorbidities. The findings highlight the importance of considering body composition and biomarkers in addition to BMI. **CONCLUSION:** Obesity influences clinical outcomes, but its effects are heterogeneous. Clinical implications include the need for individualized monitoring and treatment adjustment among patients with obesity. Future studies should integrate measures of body composition, inflammation, and treatment response to guide personalized interventions.

KEYWORDS: Obesity; Breast cancer; Prognosis; Body mass index.