Breast cancer is the "malignant proliferation of epithelial cell lining the ducts or lobules of the breast" (1).

Breast cancer is the most common form of cancer affecting women and the second leading cause of cancer death among women.

Insulin-like growth factors are potent mitogens that have a role in cell proliferation, differentiation, and apoptosis.

Overexpression of IGF-1R is thought to cause an increased risk in tumor metastasis and tumorigenesis.

The aim of this project is to conduct a systematic review of IGF-1R expression in breast cancer and its relationship to patient survival.

Our hypothesis is that increased insulin-like growth factor-1 receptor expression leads to poor prognosis in breast cancer patients.

Methods

1. Articles were selected based on predefined eligibility criteria using PRISMA.
2. Criteria are listed in Table 1.
3. A search string was determined based on the eligibility criteria using standardized search terms and searched through PubMed, CINAHL, Cochrane, and Web of Science databases.
4. Articles were screened independently by four investigators for inclusion, based on eligibility criteria.
5. Data were analyzed by the researchers to determine the association between IGF-1R expression and breast cancer patient survival.

Results

A total of 175 articles were screened: 56 were provisionally selected, and 17 articles were accepted by consensus of all four investigators.

Table 2 summarizes the characteristics of the accepted studies.

Table 3 summarizes the results of the 17 articles screened and reviewed. 6 articles found that IGF-1R expression was associated with better prognosis, 9 articles found that IGF-1R was associated with poor prognosis, 1 found that decreased expression was associated with better prognosis, and 3 articles found no association between expression and prognosis.

Discussion

We found that IGF-1R expression is associated with different outcomes depending on the patients and methodologies involved. Some studies measured IGF-1R expression while the patients were on hormone therapy or other treatments.

References