



Nanomedicine approach to breast cancer treatment in clinical trial studies: A scoping review

Ahmad Fatahi-Vanani

Student Research Committee, Shahrekord University of Medical Sciences, Shahrekord, Iran.

Introduction: Cancer has been one of the deadliest causes of death and its prevalence continues to grow. Breast cancer is a complex and inherently heterogeneous disease with morphology, molecular profiles and clinical behaviors with different treatments. In order to protect healthy tissues and organs from the side effects of drugs, the use of targeted drug delivery systems with multiple potentials that have created a revolution in the diagnosis and treatment of diseases is one of the solutions under research.

Materials and Methods: The current study is a scoping review that aims to investigate the nanomedicine approach in breast cancer treatment in clinical trial studies. In the search of keywords nanoparticles, breast cancer, clinical trial along with their Mesh terms, were done without time limit. The quality of the studies was checked by the CONSORT checklist. Consort's 25-item checklist consists of 6 general sections as described 1- title and abstract, 2- introduction, 3- methods, 4- results, 5- discussion and 6- other information.

Results: After searching in Search in Scopus, Web of science, Pubmed and Google Scholar search engine, 178 articles were found. Of the 178 articles found, 50 articles were removed due to duplication and 116 articles due to lack of relevance, and 5 articles were removed from the remaining 12 articles due to lack of access, and finally 7 articles were included in the scoping analysis.

Conclusion: Using the none approach reduces the side effects of chemotherapy drugs that are used in breast cancer. Nanoparticles -based formulations lead to specific targeting of breast cancer cells and high therapeutic use. The use of nanoparticles -based formulations also causes controlled, and prolonged.

Keywords: drug delivery, nanoparticles, breast cancer, clinical trial