Existing and emerging breast cancer detection technologies and its challenges: a review

ABSTRACT

Breast cancer is the most leading cancer occurring in women and is a significant factor in female mortality. Early diagnosis of breast cancer with Artificial Intelligent (AI) developments for breast cancer detection can lead to a proper treatment to affected patients as early as possible that eventually help reduce the women mortality rate. Reliability issues limit the current clinical detection techniques, such as Ultra-Sound, Mammography, and Magnetic Resonance Imaging (MRI) from screening images for precise elucidation. The capability to detect a tumor in early diagnosis, expensive, relatively long waiting time due to pandemic and painful procedure for a patient to perform. This article aims to review breast cancer screening methods and recent technological advancements systematically. In addition, this paper intends to explore the progression and challenges of AI in breast cancer detection. The next state of the art between image and signal processing will be presented, and their performance is compared. This review will facilitate the researcher to insight the view of breast cancer detection technologies advancement and its challenges.