

Title: Breast cancer cytology and ancillary techniques in Low Middle Income Group Countries (LMIC) like India**Nandini NM**

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Statement of the problem: Breast cancer is the most diagnosed cancer globally. In 2020, there were an estimated 684,996 deaths from breast cancer, with a disproportionate number of these deaths occurring in low-resource settings. Fine Needle Aspiration Cytology (FNAC) has been established as an important tool in the evaluation of breast lesions in low resource settings. Manual Liquid Based Cytology (MLBC) is designed to improve Conventional Smears (CS) by avoiding limiting factors such as obscuring material, air-drying and smearing artifacts. The residual samples for ancillary techniques are Immuno Cyto-Chemistry (ICC), flow cytometry and molecular biology. Cell blocks are micro-biopsy which employs retrieval of small tissue fragments from FNA specimen and is then fixed and processed with standard histopathology technique. It offers high diagnostic accuracy, cost-effectiveness and rapidity of results. There are several biomarkers which play a role in diagnosis, treatment and prognosis of breast lesions. ER PR are nuclear markers, HER2 and KI67 which proliferation markers with ECADHERIN and CD 34 are important for diagnosing metastasis, which can be tested on FNAC, MLBC and cell block of breast [Figure 1].



Figure 1. Showing different diagnostic methods of breast lesions in low middle income group countries (LMIC).

Methodology & theoretical orientation: The various cost effective methods are studied and their advantages and limitations are studied. It was found that based on the condition of the breast any one or all the method was studied and the diagnosis was confirmed by histopathology wherever possible.

Conclusion: It was found that FNAC of breast is still a good cost effective method for diagnosis of breast lesions; MLBC was found to be useful in breast lesions where the cytological and nuclear features were clearly made out. ICC was possible on both FNAC and MLBC. Cell block has helped in confirming the diagnosis in grey zone breast lesions as it almost represents histopathology, it can be used for panel of biomarkers.

Biography

Nandini NM, Professor, JSS Medical College, Mysore, is attached as a teaching faculty from the past 25 years in the department of pathology. She has finished her MBBS from JNMC BELGAVI, MD from Mysore Medical College and Research Institute. She has worked in the field of cytology of cervix and breast. She has attended and given talks at many national and international conferences in countries like U.K, USA, Singapore and Netherland. She has worked on liquid based cytology, cell block technique and has come up with indigenous methods. She has several publications and books to her credit written on cervical and breast cancer.