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Editorial

BREAST CANCER SCREENING OR EARLY DETECTION IN LOW- AND MIDDLE-INCOME COUNTRIES: CHOOSING THE WISE FIRST STEP

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ABSTRACT:

Breast cancer control in low- and middle-income countries (LMICs) is frequently framed as a choice between screening and early detection. This framing is misleading: screening is not an alternative to early detection but one component of it. Drawing on the World Health Organization's Global Breast Cancer Initiative, this editorial distinguishes early diagnosis of symptomatic women from population screening of asymptomatic women, and argues that in resource-limited systems early diagnosis should be built first. The dominant clinical problem in LMICs is late presentation rather than missed subclinical disease; lower incidence, high infrastructure demands, and a contested benefit-to-harm balance further weaken the case for early mammographic screening. Detection, moreover, is of value only where a functioning diagnostic and treatment pathway exists. A pragmatic, sequenced strategy is proposed—strengthening early diagnosis and referral first, adding clinical-breast-examination-based screening thereafter, and reserving organised mammographic screening for systems able to sustain it—underpinned by investment in a national cancer registry

Keywords: Breast cancer; Early detection; Screening; Low- and middle-income countries; Clinical breast examination; Cancer registry

INTRODUCTION

Screening in cancer control plays an important role in particular when it comes to breast cancer screening. However in low-middle income countries it provokes confusion at the policy table that should we invest in breast cancer screening or in early detection? It is clear that screening is not the alternative to early detection, it is one component of it. Clarifying that relationship is the first step toward a wise decision, and it changes the answer considerably.

A distinction that decides the strategy

The World Health Organization's Global Breast Cancer Initiative (GBCI) defines early detection as the overall process by which cancer is identified at earlier stages, when treatment is more effective (1). It proceeds along two routes. Early diagnosis targets symptomatic women — those who already have a palpable lump or other warning sign(s) and seeks to shorten the interval between that sign and start of definitive treatment. Screening, by contrast, actively tests asymptomatic women with no signs at all, usually by mammography, to find cancers before they become palpable. Both routes pursue the same endpoint that the GBCI has made its first pillar: at least 60% of invasive cancers diagnosed at stage I or II (1-2).

For a resource-limited health system, then, the operational question is not whether to pursue early detection, but which route to build first. On this, the evidence is reasonably consistent: early diagnosis of symptomatic women should come first, and organised mammographic screening should be deferred until the diagnostic and treatment pathway can bear the load it would generate.

Why early diagnosis comes first in our setting

The clinical reality of breast cancer in low- and middle-income countries (LMICs) is not one of early cancers slipping past imaging. It is one of catastrophically late presentation. Whereas more than 90% of women in high-income settings present with localised disease, over half of women in LMICs present at stage III or IV (3). When most patients arrive with advanced, sometimes fungating tumours, the highest-yield intervention is to move those already-symptomatic women through diagnosis and treatment faster; not to search for subclinical lesions in a largely healthy population.

The epidemiology reinforces this. Age-standardised incidence is generally lower in LMICs than in industrialised countries, so a screening programme aimed at asymptomatic women yields fewer true cases per thousand examined; the number needed to screen rises and the economics deteriorate. Mammographic screening is also

demanding in radiologists, equipment, quality assurance and call–recall infrastructure, and its benefit-to-harm balance has been most contested precisely in women under 50, the age band that contributes the majority of breast cancer cases in our region. Screening additionally imports its own harms: false positives, overdiagnosis, and the cost and anxiety of investigating benign findings.

Lower-cost alternatives exist and can downstage disease. Clinical breast examination (CBE) by a trained health worker, paired with public awareness and breast self-awareness, has been modelled as cost-effective for downstaging in comparable settings. Indeed, the influential analysis by Harford argued more than a decade ago that resources in LMICs are often better spent raising awareness and helping women with palpable lumps reach timely treatment than on population screening (4). These interventions sit among the WHO's costed non-communicable disease "best buys," with early-stage diagnosis linked to timely work-up and treatment delivering healthy life-years at a very cost-effective rate.

Detection without a pathway is not a kindness

One condition must accompany any early-detection effort, and it is where programmes most often fail. Finding a lump earlier helps only if the woman can then obtain a biopsy, a pathology report with receptor testing, and complete treatment. Detection without a functioning diagnostic and treatment setup is not only wasteful but it is ethically untenable, generating anxiety and cost without altering outcomes(5).

This is why the GBCI's remaining pillars are inseparable from the first: timely diagnosis within 60 days of presentation, and completion of full treatment in at least 80% of patients (1). The linkage is borne out in mortality data. No country has achieved a sustained annual decline in breast cancer mortality of 2% or more without also reaching a level of early detection at which 60% of patients present with stage I or II disease, and early stage converts to survival only when treatment follows: in the African ABC-DO cohort, mortality was lowest among women who achieved both early-stage diagnosis and complete treatment (6).

The wise decision, stated plainly

The prudent choice for Pakistan and comparable systems is a sequence, not a single either/or selection. Firstly, invest in early diagnosis of symptomatic women: public awareness so a woman recognises a lump and knows to act; de-stigmatisation, since fear of mastectomy and fatalism drive much of the delay; training of primary-care and community health workers in CBE; and, above all, an unblocked referral-to-diagnosis-to-treatment pathway. Secondly, consider CBE-based screening of a defined higher-risk age band once that path reliably absorbs the cases early diagnosis already produces. Third, reserve organised mammographic screening for when the radiology workforce, quality assurance, registry and treatment capacity exist to justify it — for most LMIC systems a later ambition, and better piloted regionally than launched nationally.

A further, uncomfortable point deserves emphasis in our own context: we cannot yet measure the very indicator the first pillar depends upon, because population-based staging data remain scarce. A functioning national cancer registry is utmost precondition for knowing whether any early-detection strategy is working at all and its absence is itself an argument for the early-diagnosis-first approach, which strengthens the clinical pathway that a registry must one day measure.

CONCLUSION

Screening seems a fancy word in developing countries with limited resources thus the starting point should be the focus on early detection, developing system to bear the burden of early detected breast cancer, establishment of a robust breast cancer

Conflict of Interest

Author declare no conflict of interest.

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