EDITORIAL: MANAGEMENT OF EARLY CERVICAL CANCER IN LOW RESOURCE SETTINGS

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Cervical cancer is a preventable disease affecting an estimated 530,000 women each year and leading to nearly 275,000 deaths (1). It is estimated that about 88 percent of women dying from cervical cancer reside in developing countries (1), with the lack of effective screening and treatment programs being the main cause of this health inequity. Factors that hinder effective uptake of screening and treatment services include: poverty, poor access, long waiting times at the health facilities, high cost of the services, low capacity, poor infrastructure, inconsistency in service provision, low staffing levels and poor referral systems (2).

The World Health Organization (WHO) and other experts recommend alternative screening approaches to conventional pap smear cytology and colposcopic verification such as the point of care 'see and treat' using VIA/VILI and cryotherapy or thermal coagulation in the low resource settings (2,3). Evidence from economic evaluation studies comparing methods for cervical cancer screening has been fairly consistent in showing that screening strategies that increase coverage and/or require fewer visits tend to be more cost-effective. Indeed, one such study conducted in South Africa using mathematical modelling showed that a strategy of VIA or HPV testing followed immediately with cryotherapy was more cost-effective than using conventional cytology (4).

With the introduction of these newer screening tests, novel management algorithms for screen-positive women have also been investigated and recommended. Key goals in this model are to limit the number of visits to health facilities and to ensure high compliance with treatment for women with cervical lesions. This is most relevant in low-resource settings, where women must overcome huge social and economic barriers to reach screening or treatment clinics and are likely to have only a once-in-a-lifetime opportunity to access services (5).

Facilities for colposcopy are limited in low-resource settings because the specialized and expensive equipment is difficult to procure and maintain, the training requirements for providers are high, and the necessary cytopathology and histopathology services are rarely available (6). Consequently, the 'see and treat' algorithm of screen-positive women in LMICs aims to minimize the use of colposcopy.

Cryotherapy, when conducted by a competent provider, results in cure rates of 75 to 85 percent (7); though simpler than other methods for treatment of precancerous lesions, this requires some special equipment that may not be easily accessible to all the VIA/VILI screening centres. For cases where cryotherapy is not appropriate, other treatment methods may be available at higher-level facilities, such as loop electrosurgical excision procedure (LEEP) or cold knife conization. Importantly, this approach has been employed with countries implementing national, large-scale screening and treatment of early cancer in much of Africa, Asia, and Latin America; Zambia, a middle-income country, for instance, implementing the 'see and treat' approach has been able to screen large numbers of women with 56.4% of VIA-positive women being eligible for cryotherapy and 87% of the eligible women accepting same-day treatment. (8). Such success stories demonstrate the scalability of this approach, for adapting by all LMI countries.

Despite this, for many LMICs, establishing and sustaining a quality cervical cancer screening program may pose a considerable burden on the health budget. The estimated total cost of cervical cancer screening, diagnostic testing, and treatment of precancerous lesions from 2015 to 2024 for 102 LMICs ranges between US $5.1 billion and US $42.3 billion, depending on the screening scenario, the intensity of screening, and the speed at which the program is rolled out (9).

The disconnect in implementation necessitated guidelines by ACCP (1) that indicated that simply providing new screening and treatment technologies and approaches is not sufficient to ensure uptake and program success: In low-resource settings, the targeted optimal cervical cancer screening age is 30–39-years; optimal treatment is achieved in a single visit and should be carried out by competent physicians, nurses and midwives; cryotherapy is a safe way of treating precancerous cervical lesions; unless cervical cancer is suspected, the routine use of an intermediate diagnostic step (such as colposcopy) is generally not efficient and may result in reduced programmatic success and increased cost; engagement of women, their partners, communities, and civic organizations in planning and implementing services is paramount; for maximum impact, programs require effective training, supervision, and continuous quality improvement mechanisms.

Additionally, the third edition of the Disease Control Priorities Project recommends opportunistic rather than organized screening with VIA or HPV testing and treatment of precancerous lesions as part of an essential package of health interventions in low-income countries, owing to the high cost of organized population-based screening programs (10).

In order to complement these and further make cervical cancer screening and treatment services more accessible, additional work is needed to develop rapid, user-friendly, low-cost molecular tests and to improve cryotherapy equipment. Novel approaches for further evaluation include point-of-care and affordable HPV test, use of the highly specific HPV E6 oncoprotein, scaling up of highly effective HPV vaccines further assessment of the real program effectiveness of the single-visit screen and-treat algorithm and employing strategies such as mobile phone reminders and outreach treatment services.

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