International Agency for Research on Cancer

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New study shows effectiveness of low-cost portable device for treating cervical precancers

Lyon, France, 25 June 2024 – Scientists from the International Agency for Research on Cancer (IARC) and partners have shown that a new portable, low-cost, battery-powered device – a thermal ablator co-developed by IARC researchers and a team of engineers – is as effective and as safe in treating cervical precancers as current standard-of-care methods. The results, published today in *Nature Medicine*,[1] are based on the largest randomized trial ever to be implemented comparing the three treatment methods.

The researchers conducted the trial in Zambia as part of an ongoing IARC-led national cervical cancer screening programme. A total of 3124 women who screened positive during visual inspection with acetic acid (VIA) testing were randomized to three treatment groups to receive treatment of the cervix: standard-of-care cryotherapy, standard-of-care large loop excision, or thermal ablation using the IARC-developed thermal ablation device.

Thermal ablation using the new device was found to be as effective and as safe as the other two techniques in successfully treating cervical precancers. More than half (58%) of the women recruited into the trial were HIV-positive. The efficacy of the thermal ablation device was comparable to the efficacy of the other methods for both HIV-negative and HIV-positive women.

“This study provides the evidence that was previously missing and will advance the World Health Organization (WHO) Cervical Cancer Elimination Initiative,” says Dr Partha Basu, Head of the Early Detection, Prevention, and Infections Branch at IARC. “These new results help fill an important gap in the current understanding of best practices to treat cervical precancers.”

WHO previously made a “conditional” recommendation for the use of thermal ablation, because there was a lack of evidence from a sufficiently large randomized controlled trial directly comparing the treatment methods.

The incidence and mortality rates of cervical cancer and the prevalence rates of HIV infection in some countries in sub-Saharan Africa are among the highest in the world.

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[1] Basu P, Mwanahamuntu M, Pinder LF, Muwonge R, Lucas E, Nyambe N, et al. (2024). A portable thermal ablation device for cervical cancer prevention in a screen-and-treat setting: a randomized, noninferiority trial. *Nat Med*. Published online 25 June 2024; https://doi.org/10.1038/s41591-024-03080-w

“The failure rate of treatment in HIV-positive women was very high for all methods included in the study,” notes Dr Basu. “This high failure rate is a matter of great public health concern and requires urgent attention of the scientific community.”

Thermal ablation uses a lightweight, portable, battery-operated device and has a short treatment duration. The device is already available commercially and is widely used in low- and middle-income countries. It has advantages over other methods, such as cryotherapy, which requires a supply of refrigerant gas and has a relatively long treatment duration and a relatively high cost. Knowledge of the high safety and efficacy of the new technology will permit nurses and clinicians to use the thermal ablator with greater confidence, thus enabling major scaling up of cervical screen-and-treat programmes.

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The International Agency for Research on Cancer (IARC) is part of the World Health Organization. Its mission is to coordinate and conduct research on the causes of human cancer, the mechanisms of carcinogenesis, and to develop scientific strategies for cancer control. The Agency is involved in both epidemiological and laboratory research and disseminates scientific information through publications, meetings, courses, and fellowships. If you wish your name to be removed from our press release emailing list, please write to com@iarc.who.int.