
Effectiveness, safety and acceptability of the method of visual inspection with acetic acid (VIA) and cryotherapy based single-visit approach to cervical cancer prevention (CCP) in Kungyangon Township, Yangon Region, Myanmar

Mya Thida[•], Khin May Thin[■], Zaw Myint Thein[■], Yin Yin Sein[■], Thazin Nyunt[★], Sanda[★]

Abstract

Cervical cancer is the second most frequent cancer occurring among the women in Myanmar. Being a preventable cancer, it is crucial to have an organized screening program in place that uses simple, practical and cost effective technology so as to ensure that the screening services have a wide coverage and it is universally accessible. The aim of this study is to find out the effectiveness, safety and acceptability of the method of visual inspection with acetic acid (VIA) and cryotherapy based single-visit approach for use in cervical cancer prevention (CCP) programmes in Myanmar. The study is a descriptive community-based study conducted from July 2013 to October 2014. A well trained central CCP mobile team from Central Women's Hospital (CWH) of the University of Medicine 1 visited Kungyangon Township fortnightly during the weekends to carry out the study. During the 6 visits undertaken by the team, 1,617 married women between the ages of 30 - 49 years were screened for cervical cancer using VIA method. The screening coverage achieved was 8.97%. The VIA tests were positive in 121 women and the screening positive rate was 7.5%. Cryotherapy was given to 119 eligible women after proper counseling. The treatment rate was 98.35%. Two women needed loop electrosurgical excision procedure (LEEP) surgery. Another two women had invasive cancer on screening. Watery vaginal discharge for 2 to 3 weeks after cryotherapy was the only symptoms reported at the time of one month follow-up. At the time of 1 year follow-up visit, the defaulter rate was 13.45% and 3 women had persistent VIA positive lesions. The overall cure rate was 97.09%. Twenty local basic health staff (BHS) were trained during screening visits of the Central CCP team. A local CCP team was also formed to sustain the screening program at the community level. All women that participated in the study were happy with the single-visit approach and they have been supported by their husbands in their efforts to obtain treatment. In addition, it was found that the women undergoing cryotherapy successfully adhered to home-care instructions prescribed by the CCP team. The study has shown that the screen and treat single-visit approach can be successfully implemented and expanded to other areas so that a universal coverage can be obtained to control cervical cancer in Myanmar.

Key words: Cervical cancer, Screening, Prevention, VIA, Cryotherapy

- | |
|---|
| <ul style="list-style-type: none">● Professor and Head, Department of Obstetrics and Gynaecology, University of Medicine 1, Yangon, Myanmar■ Associate Professor, Department of Obstetrics and Gynaecology, University of Medicine 1, Yangon, Myanmar◆ Senior Consultant, Central Women's Hospital, Yangon, Myanmar★ Senior Maternal and Child Health Officer, Yangon Regional Health Department |
|---|

Introduction

Advances in modern medical sciences have made cervical cancer to be a largely preventable disease. However, it is still one of the leading causes of cancer deaths worldwide among women. In 2012, 528,000 new cases of cervical cancer were diagnosed worldwide of which 85% of the cases are reported in less developed countries¹. During the year 2012, it was reported that 266,000 women died of cervical cancer worldwide. Almost 9 out of every 10 cases diagnosed with cervical cancer live and die in low to middle income countries. In contrast, just 1 out of every 10 cases of cervical cancer lives and dies in high-income countries¹.

Myanmar, being one of the low income countries, has a population of 20.82 million women in the age group of 15 years and older. Women in this age group are at risk of developing cervical cancer. Current estimates indicate that every year 5,286 women are diagnosed with cervical cancer of which there are 2,998 deaths, thereby making cervical cancer the second commonest cancer among women in Myanmar².

Ad-hoc cervical cancer screening (CCS) has been available in Myanmar using conventional PAP tests instead of a well organized CCS program. The coverage of the above mentioned cervical cancer screening among 18 to 69 years old women was estimated to be around 0.9% only. The screening coverage was 1.9% in urban areas and 0.4% in rural areas¹.

Limitations in resources to establish laboratories that are needed to support the screening programme and to train technicians and cyto-pathologists are the main barriers for implementing a cervical cancer control programme in low and middle income countries including Myanmar. As a result of the above mentioned constraints, it is important that the organized screening program uses a simple, practical and cost-effective test. Then, only will the screening programme be sustainable for low and middle income countries and at the same time establish a cervical cancer prevention (CCP) programme that can achieve universal coverage.

Visual inspection of the cervix after application of acetic acid (VIA) has been accepted as a proven and simple alternative screening technology for use in the field to identify precancerous cervical lesions³. Cryotherapy has also been recommended as a good alternative treatment for eligible VIA positive women especially in low resource setting although the technology of choice is the loop electrosurgical excision procedure (LEEP) for treatment of precancerous lesions⁴.

One way to achieve the best secondary prevention for cervical cancer in limited resource setting is to couple the screening test with an immediate offer of treatment which is known as a single-visit approach. This approach uses a screen test that gives immediate results (like visual methods, VIA) combined with “on the spot” treatment (e.g. using cryotherapy) for lesions detected, without the need for any further tests unless a suspected cancerous lesion is found.

This study was conducted to find out the effectiveness, safety and acceptability of a screening programme for cervical cancer that uses visual inspection with acetic acid (VIA) followed by cryotherapy treatment based on “single-visit approach” for use in CCP in Myanmar.

Materials and Method

The study is a descriptive community-based intervention study conducted from July 2013 to October 2014 in Kungyangon Township of the West District of Yangon Region⁵. This township did not have any previous intervention for CCP.

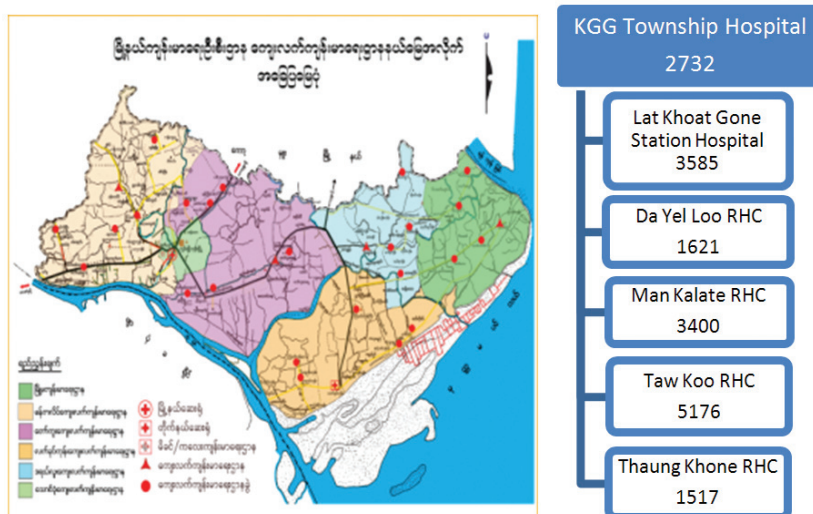


Figure 1. Map of Kungyangon Township with population of married women, 30 - 49 years age group of Urban and Rural areas (Township Profile, Kungyangon)

Advocacy meetings were held with regional and township health authorities as well as community leaders to explain the objectives and the detail plan of the study. The Kungyangon Township Hospital was selected as screening site.

Married women between the ages of 30 - 49 years were screened for premalignant lesions in the cervix using VIA. Postmenopausal women, women with history of total hysterectomy, women with no previous history of sexual exposure and women with past history of cervical cancer were excluded from the study.

Provider training

A 3-week competency based training on VIA and cryotherapy using Jhpiego training guidelines were conducted at the Central Women's Hospital (CWH). Ten midwives and five non-specialist doctors from Central Women's Hospital were trained and based on these health workers a Central Cervical Cancer Screening Mobile Team (CCCSMT) was formed.

Recruitment procedure

Five community health care workers and five midwives working in Kungyangon Township were also trained so that they could provide information regarding the screening program to the community. Married women between the ages of 30 - 49 years were invited to come forward for cervical

cancer screening by giving health talks, distributing brochures and by making the community aware about screening programme through loud-speaker announcements in the villages and urban areas.

Cervical cancer screening and treatment

CCCSMT visited Kungyangon Township every fortnight during the weekends. Information on cervical cancer screening and prevention were given to all women in groups before screening. Counseling was also done on an individual basis and a written informed consent was taken from all women who agree to participate in the study.

Clinical data along with demographics and reproductive health history were taken and recorded in a fixed proforma. Detail address and contact phone numbers were also recorded when available. Subjects were placed in lithotomy position and Cusco's speculum was introduced into the vagina to visualize the cervix. If a growth or ulcer was noted on the cervix, it was recorded as a suspicious lesion for cancer and the women was referred for further management and testing. If no suspicious lesion was found, 5% acetic acid solution was applied liberally to the cervix. After waiting one minute the cervix was re-examined. Special attention was paid to ensure that the entire squamo-columnar junction was visualized.

The test was interpreted as negative if the cervical lining was smooth, uniformly pink with acetic acid and featureless. Presence of ectopy, polyp, cervicitis, inflammation, and Nabothian cysts are also regarded as negative for pre-malignant lesion.

The test was interpreted as positive if there were raised and thickened white plaques, or aceto-white epithelium was found at the squamo-columnar junction.

After screening, the test results were recorded including a map of any abnormal findings. The test result was explained to the patient. If the present test was negative she was advised to have another test after five years.

If the test was positive, the meaning and implications of the positive test results were explained and the need to take treatment was pointed out. After obtaining consent for treatment an assessment for eligibility of cryotherapy was performed. If the lesion involved less than 75% of the cervix or if it did not extend onto the vaginal wall or extended less than 2 mm beyond the cryotherapy probe the woman was regarded to be eligible for immediate cryotherapy. If the woman was classified as not eligible for cryotherapy she was then referral to Central Women's Hospital for further treatment. If the woman is eligible for cryotherapy, treatment option of "single visit approach" with cryotherapy and other treatment alternatives were offered. Effectiveness, advantages and disadvantages of each treatment option were explained so that she can decide on her own the choice of treatment.

VIA positive woman who requested further diagnostic testing or who requested to be treated using a procedure other than cryotherapy are referred to the nearest health facility that offers other diagnostic tests and provides treatment of her choice.

Test positive woman who declined any treatment was counseled about the likelihood of disease progressing later into cancerous lesions and subsequent prognosis of the disease. She was then asked to come back for a return visit after a year for a repeat VIA test to reassess the disease status.

Treatment for VIA positive women

If the woman was considered to be eligible for cryotherapy and if she agrees to undergo immediate treatment with cryotherapy, the treatment was given.

If the woman was menstruating or expected to have menstruation within 7 days, cryotherapy was postponed until after menstrual period is over. If cervical polyp was detected the treatment was postponed until after polypectomy. Known HIV positive cases and those with other gynaecological problems were referred for further management. In test-positive women with evidence of purulent cervicitis, treatment was given before cryotherapy to reduce the risk of pelvic infection after cryotherapy.

Detail procedure of cryotherapy

Cryotherapy was provided with a standard double-freeze technique, and a 20-mm probe with a shallow nipple (Wallach Scientific, CT, USA) was used.

First, a vaginal speculum was inserted to look at the cervix. Once the lesion was identified, the tip of the cryoprobe was placed against the cervix to cover the entire lesion and gentle pressure was applied. The “trigger” of the cryotherapy instrument was depressed and locked in place allowing the coolant gas to flow to the tip. The cervical lesion was frozen by applying the coolant continuously for 3 minutes. Then it was allowed to thaw for 5 minutes and then a second dose of coolant was applied for another 3 minutes. To obtain maximum effectiveness, the ice ball forming on the cervix should be at least 4 mm thick and it should extend outside the lesion by 3 to 5 mm. If severe cramp persisted for more than 5 to 10 minutes, an oral analgesic (acetaminophen or ibuprofen) was given.

Self-care instructions were given to the women participating in the study so that they are able to look after themselves at home and to return immediately if any symptoms such as fever for more than 2 days and severe pelvic pain develops that can be indicative of potential complications. The women were also advised to abstain from having sex for at least 4 weeks after treatment. Condoms were provided to these women to reduce the risk of infection just in case sexual intercourse could not be avoided.

Follow up

The women were asked to come back for the first follow-up visit after 1 month to inquire about the woman's post-treatment experience such as duration of watery discharge and any post-treat-

ment problems. A pelvic examination was done to investigate only when a specific complaint was mentioned by the women at the time of follow-up. Another two follow-up visits were arranged at intervals of 6 months and one year post cryotherapy treatment. Speculum examination and a VIA test was done during these follow up visits. Anyone who was VIA positive on examination at the time of follow up visit was referred for further assessment.

The acceptability of cervical cancer screening programme by the women participating in this study was assessed using a structured questionnaire.

Supervision

One supervisor joined the team during the visits to the field to supervise the work of the team. The local basic health staffs belonging to the township health department were also trained during screening visits and these local health workers were organized to form a local cervical cancer screening team. These local teams are expected to continue the screening activities in their clinics to ensure sustainability of the screening program.

The following outcome measures were calculated.

- 1. **Screen coverage of the target population (women aged 30 - 49 years):**
Percentage of women aged 30 - 49 years who were tested with VIA during the study period.
- 2. **VIA Positive rate:** Percentage of screened women who had a positive VIA test result.
- 3. **Treatment rate:** Percentage of VIA positive women that received immediate cryotherapy.
- 4. **Cure rate:** Percentage of VIA negative women at one year follow-up visit.
- 5. **Safety:** Complications detected at six months follow-up.

Results

During the study period, CCCSMT visited Kungyangon 6 times. A total of 1,617 women out of 18,031 eligible women in the study area had a VIA test. Screen coverage of the target population was 8.97%. Screen coverage according to village tracts is shown in Figure 2.

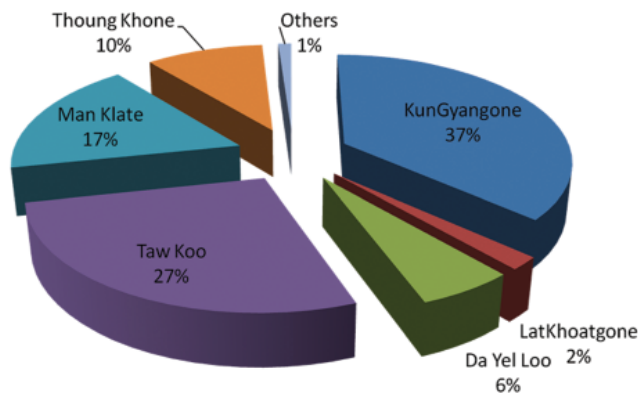


Figure 2. Screen coverage according to village tracts in Kungyangon Township.

VIA test was positive in 121 women and the VIA positive rate was 7.5%. After proper counseling, 119 (98.35%) women who were eligible for treatment received immediate cryotherapy. Two women with large lesions (covering more than 75%) were referred to CWH, Yangon for LEEP procedure. Another 2 women with suspicious lesions were found to have invasive carcinoma cervix Stage Ia and IIa respectively on histological examination. They underwent radical surgery which was performed at CWH.

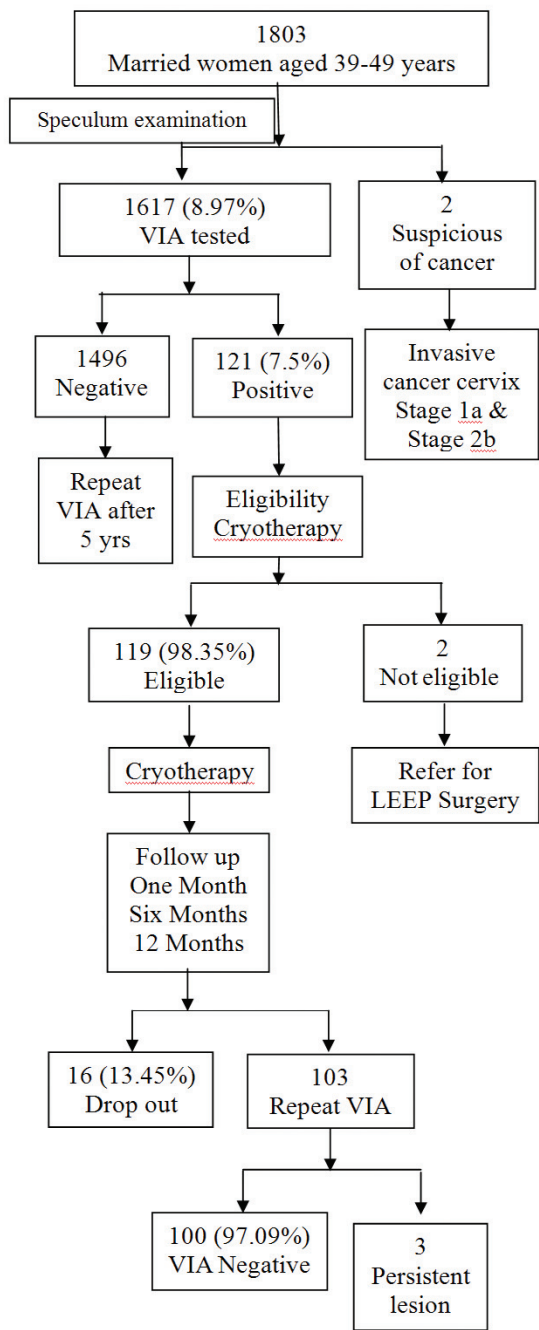


Figure 3. The result obtained from the study.

Watery vaginal discharge that lasted 2 to 3 weeks after cryotherapy was the only symptom reported at the time of one month follow-up visit. At one-year follow-up visit, the defaulter rate was 13.45%. 3 women had persistent VIA positive lesions out of 103 women that turned up for examination and the cure rate was 97.09%. All women were happy with the single visit approach and they were supported by their husbands in undergoing the screening procedures. They successfully adhered to the home care instructions given by the team. Twenty local basic health staff (BHS) were trained during the screening visits and local CCP team was formed to sustain the screening program. The results obtained from the study are shown in Figure 3.

Discussion

The results obtained from this study clearly show that a single visit screen and treat approach using VIA and cryotherapy for women tested positive is a very effective, safe and acceptable screening method for cervical cancer. Follow-up data shows no clinically apparent pelvic inflammatory disease developing as a complication of cryotherapy. Home care adherence to instructions and scheduled return visit rates were high indicating that this screening model is well accepted by the women in this study. In addition, the cure rate of this single visit approach was 97.09%

and it is found to be comparable to the results obtained in other international studies^{6,7}.

Current ad-hoc CCS screening program that uses PAP test in Myanmar can cover only a small portion of the high risk population that happens to come to the hospital for other gynaecological problems. Colposcopy and biopsy was done for these cases with CIN 2 and CIN 3 lesions (Cervical Intraepithelial Neoplasia). LLETZ (Large Loop Excision of Transformation Zone) was the treatment of choice for those who have confirmed CIN 2 and CIN 3 lesions. However, this screening model needs laboratories, cytopathologist, colposcopy and colposcopist along with electro-surgical units. The limited resources in hand to support these infrastructure and manpower requirements has been the main barrier to sustain such screening programmes even in large specialized hospitals and it get even more difficult when it has to be extended to a lower level hospital in order to increase the coverage of the screening programme. Due to the above mentioned constraints, the screening programme that uses PAP smears can only cover some portion of the high risk population in the community. Women who are currently healthy but who belongs to the at risk population group have little chance to be screened. The screening coverage rate in Myanmar was estimated to be less than 1%⁸.

The model of screen and treat approach tested in this study can overcome the barriers and constraints of the previous screening program based on PAP smears and it has also been proven that the women's compliance is much better.

Collaboration between local health authority, medical professionals and community members is an asset for the success of this screening program. Its compactness and mobility makes it easy to replicate the work in other townships and as such the screening programme can be easily scaled up to cover the whole country. This would greatly improve the fight against cervical cancer and ultimately reduce the burden of this disease in Myanmar.

Acknowledgement

This study was conducted with the collaborative effort of the University of Medicine 1 and Seoul National University Hospital with aid provided by Korea International Cooperation Agency. The researchers would like to acknowledge the support provided by all the women who participated in the study and also that of all health staff from Kungyangon Township.

References

1. International Agency for Research on Cancer (IARC), World Health Organization (WHO). GLOBOCAN 2014: estimated cancer incidence, mortality and prevalence worldwide in 2012: cancer fact sheets: cervical cancer. Lyon: IARC; 2014.
2. WHO (2003). WHO Household Surveys with geographical information system (GIS) multistage cluster sampling. Screening coverage among women aged 18 - 69. World Health Surveys. Geneva: World Health Organization (WHO); 2003.

-
3. Parkin DM and R Sankaranarayanan. Prevention of cervical cancer in developing countries. *Thai Journal of Obstetrics & Gynaecology*, 1999, **11** (Suppl 1): 3-20.
 4. World Health Organization (2013). WHO guidance note: comprehensive cervical cancer prevention and control: a healthier future for girls and women.
 5. Department of Health (2012), Township Health Profile, Kungyangon, Yangon
 6. Cervical Cancer Prevention Group: Safety, acceptability, and feasibility of a single-visit approach to cervical cancer prevention in rural Thailand: a demonstration project, *THE LANCET*, 2003, **361**: 814-820.
 7. Sankaranarayanan, Budukh and Rajkumar. Effective screening programmes for cervical cancer in low- and middle-income developing countries. *Bulletin of WHO* (2001), **79** (10): 954-962.
 8. WHO/ICO Information Centre on HPV and Cervical Cancer (2014). Myanmar: Human Papillomavirus and Related Cancers, Fact Sheet 2012.