Cervical Cancer Screening with VIA in Eastern Nepal - 3 Years Analysis

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Aims: To estimate the visual inspection with acetic acid (VIA) positivity rate and to see the efficacy of the treatment with cryotherapy during follow up.

Methods: A retrospective analysis of all VIA test from March 2012 to April 2015 were analyzed to estimate the VIA positivity rate of the screened population. Guideline for screening, treatment and follow up was as per the national guideline for cervical cancer screening and treatment 2010 of Nepal.

Results: A total of 12,444 clients were screened, the VIA positivity rate was 5.9%, repeat VIA positivity rate at the end of one year during follow up was 1.2%, more than 98% had been screened for cervical cancer for the first time and the complication following cryotherapy was low.

Conclusions: The VIA positivity rate of our population is comparable to the global magnitude. Screening for cervical cancer with VIA and treatment with cryotherapy is a feasible and acceptable form of screening in our setup. The recommendation would be scaling up of the facility up to grass root level that is linked to appropriate referral system.

Keywords: cervical cancer, cryotherapy, VIA

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INTRODUCTION

Cervical cancer is the third most common cancer in women and is considered a major health concern worldwide with more than 85% of the global burden of cervical cancer occurring in developing countries. The high-risk regions are Asia and Africa. In these regions, the age standardized incidence rate is greater than 30 per 100,000. In comparison, the age standardized incidence rate in North America and Australia/New Zealand is less than 8/100,000. Cervical cancer is responsible for 275,000 deaths annually, about 88% of which occurs in developing countries.[1] One of the explanations behind the high mortality in developing countries is the lack of effective screening programs for cervical cancer. As a consequence, no clinically significant reduction in the incidences of cervical cancer has occurred.[2,3] In contrast, there has been a major decline in cervical cancer mortality in developed countries after the introduction of population-based screening programs based on Papanicolaou smears (Pap smears) to detect cervical abnormalities.[4]

A screening program based on Pap smears requires complex infrastructure which may be unavailable in most developing countries. Therefore, there is a need for more simple screening methods which can be interpreted immediately and combined with treatment. Visual inspection with acetic acid (VIA) of the cervix after acetic acid. VIA application is believed to be an effective method for screening in resource-limited settings.[5] VIA is performed by a trained health care provider who applies acetic acid solution to the cervix and then observes the transformation zone of the cervix for one to two minutes for acetowhite epithelium, which is thought to be indicative of abnormal cellular changes.[6] The implementation of VIA as a screening strategy has shown promising results and screening programs based on this methodology are being implemented increasingly in low income countries.[7, 8]

Nepal is a developing country in South Asia and the burden of this problem is also high. As per National Cancer Registry Programme, data collected from seven major hospitals of Nepal as of 2005 shows that cervical cancer accounts for 21.4 % of all cancers in women and is the second most common cancer in women after lung cancer. With this high burden

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of cervical cancer, the National Cervical Cancer Screening and Prevention Programme(NCCSP) was initiated by the government of Nepal in 2011 and VIA as the screening test and cryotherapy as the treatment of choice for positive lesions.[9] The services were started in our department from 2012 march.

METHODS

All patients who had undergone VIA testing from March 2012 to April 2015 were analyzed retrospectively. Institutional ethical clearance was taken. Data were entered into Excel sheet and analysis was done using SPSS version. A standard VIA form was used for individual client for data entry and record keeping. As per the national guideline enrollment criteria for VIA were all women of 30-60 years as target age group but younger women if married earlier or sexually active were also enrolled. VIA- positive had received cryotherapy. Double freeze technique for cryotherapy was used and 5 % acetic acid was used for VIA testing .Women ineligible for cryotherapy were treated by loop electro excision (LEEP) procedure. After treatment clients were retested by VIA at one year.

RESULTS

Out of 12444 tested with VIA, 23 (0.18%) had advanced stage carcinoma cervix, 40% fell in 30-41 years age group, 87.3% had higher parity of more than three and 2.4% had one or more risk factors for cervical cancer (Table 1). VIA was positive in 740 clients with a positivity rate of 5.9%. Among positives 639 were treated with cryotherapy, 78 with LEEP, 23 rejected any form of treatment. During follow up at the end of one year 618 were found to be VIA negative, 90 lost to follow up and 9 were found to be positive. The VIA positivity at the end of one year was 1.2% (Table 2). Out of nine repeat positives at the end of one year, one was previously treated with LEEP and eight had cryotherapy. During follow up, the one treated with LEEP previously opted for hysterectomy due to finding of CIN-3 on histopathology and all eight previously treated with cryotherapy were re-treated with LEEP. Analysis of biopsy reports of LEEP showed CIN1 in six and CIN 2 in two. Association of risk factors, parity status and age group among the positive and negative VIA report were statistically significant (Table 3).

Table-1 Demographic parameters of the population (N= 12444)

Variables	n	%
Age groups		
<30	1317	10.6
31-40	4960	39.9
41-50	3724	29.9
51-60	2443	19.6
Median	41.47 ± 9.72	
Parity		
Nullipara	438	3.5
Para 1-3	1138	9.1
Para >3	10868	87.3
Median	3(2-3)	
One or more risk factors for cervical cancer		
Present	304	2.4
Absent	12140	97.6

Table-2.VIA screening results of the population (N=12444)

Variables	n	%
Treatment type among VIA positive		
Cryotherapy	639	5.1
LEEP	78	0.6
Rejected treatment	230.2	
Follow up at one year after treatment		
VIA Negative	618	
VIA Positive	09	1.2%
Lost follow up	90	

Table 3. Variables compared between negative and positive VIA groups (N=12444)

Variables	VIA		P-value
	Positive	negative	
Age groups			
<30	33	1284	
31-40	344	4616	<0.001
41-50	134	3590	
51-60	226	2214	
Parity			
Nullipara15	423		
Para 1-3	139	999	<0.001
Para >3	586	10282	
One or more risk factors for cervical cancer			
Present	641	11499	
Absent	99	205	<0.001

DISCUSSION

The results of the present study have revealed results more or less in accordance with the similar reports published. The VIA positivity rate in this study of 5.9% is similar to the published series of 4.8% in Bangladesh[10], 8% in Tanzania,[11] 6.6% in Angola.[12] A higher rate of VIA positivity have been reported

in different population with presence of high risk factors like HIV positivity rate, the study further emphasized that a referral linkage between the HIV care and treatment program and the cervical cancer screening program should be established to increase people's awareness to increased participation in screening programmes.[13] The majority of clients in the VIA positive group was in the 30-39 years age group which is similar to the published series.[14] We assessed the presence of risk factors for cervical cancer in the screened population like history of abnormal Pap tests, HPV DNA positivity status, HIV positive status- the overall presence of one or more risk factors was present was present in 2.5% only which could be due to the low prevalence of HIV in our population, HPV DNA testing is not available in majority of the places, community based Pap tests has not been initiated yet in the country.

Regarding the treatment of VIA positive cases, out of 740 positives, 639 were treated with cryotherapy and 78 were treated with LEEP and 23 opted for consultation at higher centre before receiving treatment and didn't receive any treatment at our centre so regarded as rejected treatment. The repeat VIA testing at the end of one year shows 1.2% is similar to the series of 4.7% in Nigeria,[15] 2.1% in Ghana,[16] while some reports have been published reporting VIA positivity rate as high as 11%.[17] The high repeat positivity rate could be explained due to the presence of other high risk factors for cervical cancer in that particular population and in our study also we had a significant sample of population who didn't turn out for retesting at the end of one year. We should also improve measures to increase peoples participation in the follow up so that the exact recurrence rate of VIA can be determined , which will be an important step in our future planning of treatment and follow up strategies for cervical cancer screening.

Another important finding of the study was that 98% of the population had been screened for cervical cancer for the first time which shows that we need to improve measures to reach screening programme at the community level. The finding of low prevalence of risk factors for cervical cancer in the screened population which is contradictory to the high prevalence of cervical cancer in our country as per international data which could be clarified if we have a region wise data for occurrence of cervical cancer but the accurate regional wise data is not available .

CONCLUSIONS

Cervical cancer screening with VIA and treatment with cryotherapy is a feasible and acceptable form of screening in our population with very few side effects. The VIA positivity rate of our population is similar to the published series but we need to improve measures to increase follow up after treatment as mentioned in the national protocol. The government should scale up programmes to make cervical cancer screening programme to cover a wider population and build up mechanism for appropriate referral form primary to tertiary level depending on the nature of problem detected in the client.

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