CERVICAL CANCER SCREENING IN A REFERRAL SETTING

Study done at CHUK 2015

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Abstract

Objective: The objective of our study is to describe social demographic, motivations, clinical characteristics and outcome of patients consulting for cervical cancer screening service at a tertiary care setting in Rwanda

Methods: Our study is a cross-sectional prospective study carried out over 6 months (September 2015-February 2016) at Kigali University Teaching Hospital (CHUK) which is the largest referral facility in Rwanda. Knowledge, perceptions and cues for action associated with self-reported cervical screening uptake were explored. Our study population (n = 150), was obtained from women of child-bearing age onwards consulting for screening services at CHUK. Data on socio-demographic status (age, level of education, marital status, occupation) sexual and reproductive health knowledge on cervical cancer and susceptibility to the disease were collected using self-administered semi-structured questionnaires.

Results: In total 150 women were screened during the six months study period. All provinces in Rwanda were represented, with Kigali leading with 54% of all women screened. The average age was 43.51 years. Only 20(13.3%) of women coming in for screening were self reported while 130 were referred by health professionals from lower health facility countrywide. Forty-nine

(32.7%)women presenting for screening had not had a speculum exam done to evaluate the cervix. Visual inspection with ascetic acid (VIA) followed by colposcopy were the screening methods available at CHUK with 22(14.7%)women being VIA positive 8(5.3%) with suspected cancer, while 120 (80%) were found to be VIA negative, .Histological distribution among women who had biopsy taken was six cases of CIN 1, four cases of CIN 2, two cases of CIN 3 and eight confirmed cancer.

Conclusion: CHUK receives cases countrywide, with the majority of them being referrals from lower health facility levels. Few patients self report in for screening services available at CHUK. Among women presenting for screeing and biopsied, a large number (40%) were found to already have cervical cancer.. Increasing knowledge about available services and the need for voluntary cervical cancer screening is a key element to improving cervical cancer care and outcomes in Rwanda. .

INTRODUCTION

Worldwide, cervical cancer is the third most common cancer in women after breast cancer and colorectal cancer(1).It is the second cause of cancer death of women worldwide (2).The global cancer statistics 2012 ranked cervical cancer as the 7th most common cancer worldwide (3). In 2012, there were an estimated 528,000 new cases of cervical cancer and 266,000 deaths from the disease (4).It is also the most common cancer among women in sub-Saharan Africa, Eighty-three percent of all new cases and 85% of all deaths from cervical cancer occur annually in developing countries while in developed countries the rates have decreased significantly(5). Eastern Africa is one of the most heavily affected areas with an incidence of more than 30 cases per 100,000 women per year (6). Many women in East Africa are still unaware of cervical cancer and this contributes in East Africa having the highest incidence of cervical cancer worldwide (7)

Rwanda has a population of 11 million with 2.72 million women aged 15 years and older who are at risk of developing cervical cancer (8). In 1996, statistics in Rwanda ranked cancers which are infectious as number one then liver and cervical cancer were next highest at 12 % for each (9) Liver and cervical cancer are both technically infectious also, from viruses. Current estimates indicate that every year 986 women are diagnosed with cervical cancer in Rwanda and 687 women die from the disease (10). Cervical cancer ranks as the most frequent cancer among women in Rwanda, and the most frequent cancer among women between 15 and 44 years of age (11).

Cervical cancer has a premalignant stage where majority of patients are asymptomatic. It is during this stage of the disease that there is the opportunity to screen for, diagnosis and treat premalignant disease to interrupt its progression to cancer, which usually takes many years. There are various methods of cervical cancer screening, including conventional or liquid based cytology and HPV DNA testing. However, these methods require multiple patient visits as well as pathologic and laboratory resources that are often not abailable in developing countries(12). In areas where these methods are not practical, visual inspection with acetic acid (VIA) with or without Lugol solution has been found to be a simple test that requires minimal infrastructure and expenditure (13). Screening offers the opportunity to identify premalignant lesions and to treat them with various methods including observation, cryotherapy, loop electrosurgical excision procedure (LEEP) and cone biopsy depending on the severity and extent of the lesion. In Rwanda, most women undergo VIA screening at the local health center or district hospitals. The procedure is currently done by trained nurses and primary care physicians. Most women who are found to be VIA positive are provided cryotherapy at the time of screening, as per local standard of care. Cases suspicious for cancer are referred from primary care facilities to the referral level i.e Kigali University Teaching Hospital (CHUK) for definitive diagnosis and possible surgical treatment. Early diagnosis of cervical cancer plays an important role,,as early stage of disease carries a better prognosis. Detection of cervical cancer at an early stage is associated with excellent survival but most women in developing countries present with advanced and often untreatable disease (15).The management of cervical cancer depends on stage of the disease and consists of various treatment options including conization, hysterectomy , chemo-radiation and in advanced cases, palliative care

In our study, the aim was to describe social demographic, motivations, clinical characteristics and outcome of patients who consult the cervical cancer screening services at a tertiary care setting in Rwanda.

Methods

Type of study: It is a Prospective descriptive cross-sectional and analytical study. Data collection was obtained from women who came in for cervical cancer screening by use of a semi-structured standardized questionnaire.

Study population: The study population consisted of women who came in for cervical cancer screening over a 6 month period from September 2015 to February 2016. Participants were informed on the study and consented, and those declining consent were excluded from the study .This study was conducted at CHUK, the largest public referral hospital in Rwanda.

Data collection procedures: All data was gathered into a computer database by the principal investigator using Microsoft Excel software, and was then transferred to Statistical Package for Social Science (SPSS) version 16.0 for analysis. Data cleaning and error range check to enhance validity and consistency was adhered to before data analysis. Descriptive statistics are presented in frequencies, percentages and summary statistics.

Screening procedures: Screening was done by resident physicians, with the assistance of one designate midwife working in colposcopy clinic. The following procedures were followed for screening: Speculum examination- If a clinically suspicious cervical lesion then VIA coupled with Colposcopy was performed to detect pre-cancer lesions. For VIA positive women a biopsy was obtained for pathology. Pathology results were communicated to the patients 2 weeks to 1 month later by telephone call with a copy report kept in the patient files in colposcopy clinic.

Variables: two dependent variables of interest were chosen: Invasive cervical cancer was defined as a binary variable with an outcome of diagnosis of invasive cervical cancer. Invasive cervical cancer lesions were diagnosed clinically if lesions suggestive of invasive cancer were found on the cervix. All cases were confirmed by colposcopy and biopsy; cervical pre-cancer was defined as a binary variable.

Independent variables included: socio-demographic variables: age, education level, province, marital status, socio-economic status (defined in accordance with the Demographic and Health Survey 2010) and clinical and behavioral variables: age at first intercourse, number of sexual partners, sexual transmitted infections (STIs), number of pregnancies, number of children delivered, number of abortions, age at first pregnancy, contraceptive use, smoking and alcohol use.

Statistical analysis:

Data entry was done with Epi Data 3.1. After data cleaning, data were exported to SPSS 16.0 for analysis. For descriptive and data summary purposes, univariate techniques were applied to single sets of data. Graphical and tabular techniques included frequencies and bar graphs.

Ethical considerations: CHUK Research Ethics committee and University of Rwanda (UR) Institutional Review Board approved the study

RESULTS

Social demographic and clinical characteristics of the study population

In total during the six months study period 150 women, approximately 25 patients per month, were screened for cervical cancer at CHUK. The patients ranged in age from 23 to 79 years with an average age of 43.5. All provinces in Rwanda were represented. Social-demographic characteristics are detailed in Table 1. . The majority of our patients (86.7%) were referred for screening, whereas only 13.3% were self-referred. Although the majority of patients were referred, 32.7% stated they had not yet been evaluated with a speculum for this complaint. Clinical characteristics are outlined in Table 2.

Findings of the screening by visual inspection with acetic acid

All women were screened using VIA plus Colposcopy. Among 150 patients who were screened 22(14.7%) were VIA positive, 120(80%) were VIA negative and 8(5.3%) patients were suspected to have cancer, (Table 3). Note that all women who had VIA also had colposcopy regardless of the VIA findings.

Histological distribution among women who underwent biopsy.

Among 150 women who were screened, 22 of them were suspected to have either pre-cancer lesions or cancer on VIA and colposcopy and underwent biopsy. Histology results returned with 8 confirming cancer, while 6 showed CIN1 , 4 showed CIN2 and 2 showed CIN 3 (Table 4).

DISCUSSION

The principle finding in our study is that in Rwanda, most women presenting for cervical cancer screening are referred due to suspicion of disease, rather than for true disease screening. Among 150 patients who were screened, 130(86.7%) were referred after having an out patient clinic from a district hospital. Only 20(13.3) were self-reported to the screening services. The explanation may be due to the fact the health system in Rwanda respects referral levels, and the majority of the population present initially to a low level of care (health center) ,then district hospital prior to presenting to a referral Hospital. Also, some district hospitals do have available screening services and CHUK receives referred cases from those hospitals. It would be useful to determine if this limited number of self referred screening cases are similar at health centers and district hospital, where typically present for their initial complaints. If so, then more education and sensitization about cervical cancer should be undertaken to improve voluntary screening. One study done in Kenya recommended the increase of knowledge, and enhance of health education and provision of free services to increase the uptakes (18) In Rwanda this would be more an issue of education and awareness, as the majority of the population have community health insurance which covers most of the services.

The majority of women who came in for screening during our study were above 37 years with 37 to 47 occupying 37.3 % of all screened women and 48-58 occupying 30%. Between 21-25 years only 2 women had screening. This findings show that most women start screening at the age of around 30 with peak at around 40. This may be due to the fact that screening programmes are relatively new in Rwanda and initial

protocols have emphasized on women above the age of 30.This policy of systematically screening women over the age of 30 seems to be cost effective method and efficient to reduce a bid number of women who could develop cervical cancer. As reported in one study, cervical cancer screening in women aged 20-24 has little or no impact on rates of invasive cervical cancer up to age 30. Some uncertainly still exists regarding its impact on advanced stage tumours in women under age 30 (16)

In our study population the majority of patients who had screening services had at least an education level above primary. Those with primary education represented 42.7% and those with secondary and above represented 42% while those with no formal education had only a representativity as small as 15.3%.This discordance between lack of formal education and cervical cancer screening services attendance may be attributed to lack of awareness. This findings are consistent with the results by a study done in Nigeria which found that the awareness significantly varied with the level of educational attainment (P<0.0001) (17).

Among all women who attended CHUK screening services, 49 (32.7%) had never undergone a speculum exam prior to the screening services. This number is concerning as a speculum exam is essential in the evaluation of cervical/vaginal complaints and cervical cancer screening. Also, women at the age where screening is recommended should be educated about it 's value and should be screened if possible.

Among women who were screened 120(80%) were VIA negative, 22(14.7%) were VIA positive and 8(5.3%) were suspected to have cancer prior to biopsy. All women WHO were screened at CHUK were also offered colposcopy to confirm or clarify the findings and colposcopy guided biopsy was performed on all VIA positive women. After biopsy the histologically distribution among cervical dysplasias showed 6 cases of CIN 1, (30%), 4 cases of CIN 2 (20%) and 2 cases of CIN3 (10%). The number of cases of cancer were 8 (40%) which outweighed the number of premalignant lesions (CIN2 and 3). This high incidence of cancer cases compared to premalignant dysplasias is mainly attributable to the fact that most of the patients were referrals from other health facilities with gyn complaints.

As conclusion women who consult at CHUK are mainly above the age of 30, which is normal, however few are self reported and lack of formal education have a negative impact on attending screening services. The percentage of confirmed cervical cancer after histology is high compared to to precancer lesions among women who had biopsy owing to the fact that this is a referral institution. Enhancing health education among all categories of women especially those lacking formal education about cervical cancer screening would increase the uptake of this service and diagnoses in the premalignant state, and reduce the number of cancer cases.

Another approach to cervical cancer prevention is vaccination of young girls who have not yet been exposed to HPV virus. Rwanda has reduced the historical two-decade gap in vaccine introduction between high and low income countries to just five years by

starting a vaccination program in April 2011 targeting all young girls in primary schools(14). The trend of associating Nationwide screening programs combined with vaccination programs in young girls will accelerate the reduction of cervical cancer cases in Rwanda.

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Table 1: socio- demographic characteristics of the participants

	N	(%)
Age		
21-25yrs	3	2.0
26-36	34	22.7
37-47	56	37.3
48-58	45	30.0
others	12	8.0
Mean Age : 43.51		
Province		
Kigali City	81	54.0
East	34	22.7
West	13	8.7
South	9	6.0
North	13	8.7
Education		
no formal education	23	15.3
primary	64	42.7
secondary and above	63	42.0
Occupation		
Farming	63	42.0
Civil servant	11	7.3
Business	32	21.3
Health worker	13	8.7
Others	31	20.7
Social economic status		
Low	48	32.0
Average	101	67.3
High	1	.7
Marital status		
single	42	29.6
Married/cohabitant	100	70.4

Table 2. Clinical and behavioral characteristics

Reason for consult			
	Referred	130	86.7
	Self reported	20	13.3
History of STis			
	Yes	137	91.3
	No	13	8.7
Use of speculum			
	Yes	101	67.3
	No	49	32.7
Age at first intercourse			
	15-20yrs	50	33.3
	21-25	64	42.7
	26-30	29	19.3
	above 30	7	4.7
Smoking			
	Never smoked	128	85.3
	smoker	8	5.3
	ex-smoker	14	9.3

Table 3:Results of visual inspection with acetic acid

	Frequency	Percent
VIA -	120	80.0
VIA +	22	14.7
Suspicion Of Cancer	8	5.3
Total	150	100.0

Table 4: Histological findings distribution following colposcopy guided biopsy

Histology	Frequency	% Per total screened	% Per biopsy (VIA +)
CIN 1	6	4.0	30.0
CIN 2	4	2.7	20.0
CIN 3	2	1.3	10.0
Cervical Cancer	8	5.3	40.0
Total of all women who had lesion on histology	20	13.3	100.0
Women who did not have biopsy (VIA -)	130	86.7	
Total number of women who were screened	150	100.0	