

*Original Article***Awareness of Cancer Cervix and its prevention with HPV vaccine in interneers, final MBBS students, Nursing staff and paramedical staff in a teaching institute**Vuba Rama Rao¹, Pandula Revathi², V Karuna³, Josna Jose⁴

Aim of the study to collect information about the specific knowledge and awareness of CaCx and its seriousness & benefits of vaccination and screening. Konaseema Institute of Medical Sciences & Research Foundation (KIMS), Amalapuram, Andhra Pradesh, India. In developing countries CaCx is the most common cause for morbidity and mortality in women among the gynaecological cancers. So, it is essential all the medical professional should have awareness regarding carcinoma cervix and its prevention with HPV vaccination. Hence, the study is conducted in medical professionals of KIMS which is a rural medical college. A total no of 350 were interviewed with a structured questionnaire in a cross sectional study. The group consists of interneers, final MBBS students, Nurses and Paramedical staff working in KIMS. The survey has been conducted in the months of June, July, August, 2011. Out of 350 interviewed In cross sectional survey – 96.8% of respondents are aware of CaCx is a most common malignant disease in females. Only 3.1% are not aware of the disease. In 73% of respondents know the cause of CaCx, 75% know that HPV is the cause, 74.8% of respondents stated that primary prevention is possible with HPV vaccine, 81% aware secondary prevention is possible with Pap Smear. But only 0.57% have taken vaccination and only 6.5% have taken Pap Smear (only married people taken for study). This study shows the interneers, students have sound knowledge about the CaCx and its prevention with Vaccination. But Nurses, Paramedical staff did not have adequate knowledge about the disease and its prevention. So they need proper health education regarding the disease.

[J Indian Med Assoc 2019; 117: 23-6]

Key words : Cancer cervix, HPV Vaccination and pap smear.

In Asian countries like India the cervical cancer is the most common cancer, highest killer disease and top killer of genital cancer. In the year 2008 WHO has published that 5,29,409 new cases reported all over the world, and 2,74,883 deaths occurred annually. In India annually 1,34,420 New cases, 79,000 deaths got reported with an incidence of 23.5 / 100,000. India harbours a majority of cervical cancer cases in world wide incidence. Most of the cases reported at the advanced stage due to lack of awareness, health education and screening in rural area. WHO recognized the importance cervical cancer and recognized it as a global health problem due to its rising alarming situation of newly diagnosed cases. So to prevent CaCx, primary prevention to be done by HPV vaccination. Secondary prevention by screening by Pap smear. So WHO

recommending routine HPV vaccination before the onset of sexual activity for prevention of HPV related diseases. In this process not only doctors but paramedical , personnel, other health workers should have knowledge about vaccination, to be involved in health education and promotion of vaccination. So Central Government, State Government and various non Government. organizations should come forward to organize massive community education, campaign to vulnerable population of society. HPV vaccine programs among adolescents and young women may result rapid reduction of cervical cytological abnormality there by cervical cancer. Countries like USA / UK, Australia taking up as National program of vaccination against high risk HPV 11, 16, 18, 68. Secondary prevention of CaCx is possible by screening by Pap Smear. Screening is search for disease in whom, who do not seek health care. Detection of precancer or micro invasive stage is possible, cure is 100%. Selective screening is most appropriate approach. In 1984 National cancer control programme (NCCP) came up and launched screening programme in India and it is modified in 2006. The protocol not appropriate to take care of all women from risk of CaCx. No organized screening programme is available till today, due

Department of Obstetrics & Gynaecology, Konaseema Institute of Medical Sciences & Research Foundation, Amalapuram 533201

¹MD (Obstet & Gynaecol), DGO, Associate Professor and Corresponding author

²MD (Obstet & Gynaecol), DGO, Professor & Head

³MS (Obstet & Gynaecol), Junior Resident

⁴MSc (Bio-Statistics), Lecturer, Department of Community Medicine, Konaseema Institute of Medical Sciences & Research Foundation, Amalapuram 533201

to high cost, inadequate infrastructure, trained personnel. Pap smear is available for limited number of women in India.

MATERIALS AND METHODS

A cross study is made in a total number of 350 were interviewed with a structured questionnaire. It includes registered interneers, final year MBBS students, registered nurses and paramedical staff from Konaseema Institute of Medical Sciences, Amalapuram, AP, India. Total no. of males 112 with mean age 26.8. Total no of females 238 with mean age 26.7.

It consists – 120 medical students, 85 interneers, 62 GNM, 43 ANM, Bsc Nursing 13, 1 Msc Nursing , Lab technician 26 (Table 1).

Total number	N – 350	Cadre	
Mean± SD	26.8 years	Interneers	24.28% (N – 85)
20 - 30 years	88% (N – 308)	Medical students	34.5% (N – 120)
30 – 40 years	7.7% (N – 27)	GNM	17.7 (N – 62)
>40 years	4.3% (N – 15)	ANM	12.28% (N – 43)
		Bsc Nursing	4% (N – 14)
		Lab technicians	7.42% (N – 26)

RESULTS AND OBSERVATIONS

Awareness of epidemiology of cervical cancer : In our study Most of the respondents 96.8% aware the CaCx is a most common malignancy and 73% know the cause, 75% know HPV is the cause, 85% were saying death will occur once they get the disease (Table 2).

	Percentage (%)
CaCx is disease	339 (96.8%)
Cause for CaCx	256 (73%)
HPV is the cause	263 (75%)

Awareness of Aetiology:

In our survey 75% aware HPV is the causative organism and 80% aware genetic factor is responsible. 26.8% say don't know the cause (Table 3).

Awareness about risk factors : In our survey Several risk factors have been mentioned. 80% were a

Genetic, family H/o	80% (N=280)
STD	76% (N=265)
Multiparity, multiple sex partners	79% (N=278)
Unprotected coitus	67.4% (N=236)
Early marriage coitus	69.1% (N=242)
Smoking	58% (N=203)
Low social status, poor hygiene	72% (N=252)

opinion genetic and family H/o is a risk factor. 79% of opinion multiparity, multiple sex partners, Early marriage and coitus. Other risk factors - low economic status and poor hygiene 72%. advanced age 79.4%, venereal warts 75% and 60% are of opinion – circumcision will prevent , unprotected coitus 67.4%, smoking 58%.

Awareness about treatment of CaCx : In our survey 87.4% aware that treatment is present for CaCx, Majority of sample 92.8% says treatment depends upon staging.

About modality of treatment : 93.7% - Radiotherapy, 92% - Chemotherapy, 90.8% - Surgery (Table 4).

Awareness about primary prevention

with HPV vaccine : In our survey 74.8% respondents aware that primary prevention is possible with HPV Vaccine. 77% aware that HPV vaccine is available in the country, 51.4% Knew about no of doses of vaccine to be given, 48.5% Say side effects present. But regarding taking up vaccination a least number has taken ie, only 0.5%. Of their family members only 1.1% have taken vaccine. In our study 38.4% are respondents had counseling for vaccination before. Counseling had been given while interviewing them.

Awareness about Pap smear in Secondary prevention : In our survey 81% aware secondary prevention is possible with screening by Pap smear, 46.8% aware what age screening to be started , 38% aware what age screening to be ended, 20% had counseling for screening but 6.5% have taken Pap smear (only married people included), Counseling had been given while interviewing them (Table 5).

Treatment depends upon staging	92.8% (N = 325)
Chemotherapy	92% (N = 322)
Radiotherapy	93.7% (N = 328)
Surgery	90.8% (N = 318)

	Percentage (%)
HPV Vaccination :	
Primary prevention with HPV Vaccine	74.8% (N=262)
No of doses of vaccine	51.4% (N=180)
Side effects	48.5% (N=170)
Vaccination taken	0.5% (N=2)
Family member have taken vaccine	1.1% (N=4)
Counseling for vaccination .	34.8% (N=122)
Pap smear :	
Pap smear for Secondary prevention	81% (N=284)
What age to be started	46.8% (N=164)
What age to be ended	38% (N=133)
Counseling for screening	20% (N=70)
Pap smear taken	6.5% (N=3)

Awareness about the symptoms of CaCx : In our survey 88% of respondents aware irregular bleeding P/V and post coital bleeding are the symptoms, 85% say foul smelling discharge, 73.4% Says they will have lower abdominal pain. 42.5% Loss of Wt and appetite (Table 6).

DISCUSSIONS

In our survey most of the participants expressed their opinion that in developing countries the CaCx is most common genital cancer causing morbidity and mortality. 75% of respon-

	Percentage (%)
Irregular bleeding P/V and post coital bleeding	88% (N=308)
Fouls smelling discharge	85% (N=298)
Lower abdominal pain	73.4% (N=257)
Loss of Wt. and appetite	42.5% (N=150)

dents expressed that HPV is the cause for the disease. Another 75% of opinion that STD are responsible. Our study correlates with the study of Sayed Faizen Ali, Samia Ayub of opinion 78% say that HPV is cause, and 89% say STD is responsible¹. Long term infection and high risk strains (11,16,18,31,33,35) leads to cervical dysplasia². High risk strain contains double stranded DNA genome which functions as oncogene called as E₆ and E₇³. In our survey 75% of respondents were of opinion that sexually transmitted diseases are responsible. 79% of opinion HIV infection associated with CaCx. Weakened immune system cause five fold risk of getting persisting HPV⁴. The most common STD Chlamydia trichomatis, when it is chronic & associated with HPV. it will make HPV more persistent⁵.

Regarding awareness : In our survey >90% respondents aware and heard about the disease and 85.4% of opinion that it is serious disease causing death since most of the people seeking medical advice at advanced stage. 79% of respondents say the average age to get disease is >50 years. American cancer society says most of the cases diagnosed between 35 and 45 years⁶. Several studies were done regarding awareness, a study by OA Ayinde, AO Migbodu *et al*, in medical students stated that 96% aware of CaCx⁷. Similar study among medical workers. by Mutaba T, Miro FO *et al*, - shows 93% aware of CaCx⁸.

Risk factors : In our survey several risk factors were mentioned and respondents expressed their opinion. 80% of opinion genetic & family H/o is a risk factors, 58% of opinion smoking, 72% of opinion low socio-economic factors, 70-75% of opinion multiple sex partners and early marriage and sex, 67% were of opinion unprotected coitus is a risk. Mother and sister have cancer, two fold risk of developing CaCx, suggesting inherited susceptibility⁹. Cigarette smoke has carcinogens, will cause mutation in DNA, increase risk of squamous cell cancer, not adenocarcinoma¹⁰. Low socio-economic status increase CaCx due to lack of education, hygiene, screening, prevention of HPV, lack of treatment of pre cancerous lesions². A similar study by O Awodele, AAA Adeyonye *et al*, where risk factors – multiple sex partners 54%, early marriage and sex 47.5%¹¹. In our survey respondents expressed unprotected coitus (67%) is risk factors. Use of condom reduces the chance of HPV and other STD, there by reduce risk of CaCx. 100% male partners condom use – 70% less likely to get infection¹².

Circumcision : In our survey 59% of respondents of opinion male circumcision will prevent the disease, there

by reduces HPV, HIV in men there by reduce HPV, HIV in female so decrease incidence of CaCx¹³.

Symptoms : In our study many participants stated that common symptoms are Irregular and post coital bleeding (88%), Foul smelling discharge (85%), lower abdominal pain (73.4%) loss of wt. and appetite (42.5%). Regarding treatment in our study most of the respondents 87.4% knew that there is treatment for CaCx majority of opinion 92% say modality of treatments depends upon the stage – either radiotherapy 93.7% or surgery 90.6% or chemotherapy 92%.

Prevention : Prevention of Ca Cx is possible with three approaches i:e health education / primary prevention with HPV vaccine / secondary prevention with screening and treatment. Interactive cervical cancer education to improve cancer awareness and HPV vaccination through lectures, cancer posters to reduce the incidence. Ca Cx is preventable with HPV Vaccine. In our survey 75% respondents aware that Primary prevention is possible with vaccination. The development of vaccine against HPV is a major step in the fight against cervical cancer. 51.4% knew about no. of doses (3 doses). 48.5% make a comment that it has side effects. Only least number has taken vaccination i:e 0.5%. Only 1.1% of their family members have taken. 34.8% had counseling for vaccination. Side effects – allergic reaction, pain at the site¹⁴. A similar study by Hopkin TG, Wood NJ *et al* in health professionals shows 90% aware of Vaccine, they recommended vaccine even at 11 – 13 years¹⁵. another study by Choi KA, Kimj H *et al* in Korea 78.3% aware of HPV vaccine and recommended¹⁶. in our survey 48.5% respondents say some side effects present. As per CDC updates the side effects Negligible only 0.058%¹⁷. in our survey only 34.8% had counseling, but only 0.5% had vaccination. It shows majority did not have counseling as well as vaccination because of cost effect of vaccine and which is unaffordable by many of them. As per WHO – HPV prevalence rate in India 8% even at the age of 18-25 years. Since HPV infection is seen in young women in early twenties, hence vaccination is adolescents and young adults is the best policy, and should be made compulsory. Yong adolescents and adults have to be integrated for counseling for HPV vaccination. In this meeting parents and husbands have to be attended¹⁸.

Doses of vaccination : In our survey 51.4% are aware of 3 doses of vaccine to be taken. A study by National Cancer Institutes costa Rica Vaccine trail recommending now, only two doses of vaccine, which is as effective as three doses¹⁹. At present developed countries has got in-

tention to eliminate CaCx with screening by compulsory vaccine²⁰. Two vaccine available both are FDA approved Oct.2009 to be given at 9–26 years. Gardasil against 6, 11,16, 18, cervarix 16, 18^{21,22}.

Secondary prevention : Is possible with screening with Pap smear. In or survey 81% respondents aware of secondary prevention by pap smear, 46.8% aware of at what age pap smear to be started. 38% aware at what age pap to be ended. Only 20% had counseling for pap smear, but 6.5% had taken pap. A similar study by Mutyaba T, M Miro F A *et al* among doctors, Nurses, students that 93% aware of CaCx, 83% aware of pap smear 81% never had screening and 19% had screening⁸. Another study by Kabir M, Iliyasu Z *et al*, where they found 94.7% had positive attitude towards pap smear²³ but only 20% had pap smear²⁴. Another study by M Urasa, E Darj *et al* from TanZania where 0.8% had pap smear. Above studies shows majority (90%) had positive attitude and good awareness for pap smear, still they are not going for it. We found only 0.8 to 20% taking pap. This shows they need to have health education and motivation to utilize this service. No organize screening programme are available due to high cost in adequate infrastructure and trained persons.

CONCLUSIONS

This study shows the interneers, students have sound knowledge about CaCx and its prevention with HPV vaccine . but Nurses, Para medical staff did not have adequate knowledge about the disease and it prevention. Good number of respondents aware of the disease and vaccination but when its comes to the uptake very less have taken pap smear and vaccination. To prevent CaCx, preventive measures should be taken either by Govt. or NGO's in the form of creating awareness in the public and immunization with HPV vaccine either free cost or at a subsidized rate and to be included in National immunization schedule and to be made compulsory. So that the disease will be eradicated from the society for future generations.

REFERENCES

- 1 Knowledge and awareness of Ca Cx and it is prevention in interneers, Nursing staff – Sayed Faizen ali, Samia Ayub *et al*, PLUS ONE 5(6) : e1059. Doi : 10.1371 /journal. Pone. 0011059
- 2 Khan MJ, Patridge EE, Wang SS, Schiffman M — Socio-economic status and risk of CIN grade 3 in oncogenic HPV DNA positive women – *Cancer* 2005; **104**: 61-70(PUBMED).
- 3 Boulet G Horvath C Broeck DV, Sahebbali S, Bogers J — Human papiloma virus E6 and E7 oncogenes. *Int J Biochem Cell Biol* 2007; **39**: 2006 – 11: E Pub 2007 July 19 (PUBMED).
- 4 Palefsky J — Biology of HPV in HIV infection *adv Dent Res*. 2006; **19**: 99-105 (PUBMED).
- 5 Silins I, Ryd W, Strand A, Wadell G, Törnberg S, Hansson BG, *et al* — Chlamydia trachomatis infection and persistence of human papillomavirus. *Int J Cancer* 2005; **116**: 110-5.
- 6 American cancer society (accessed 9/5/07, www.cancer.org).
- 7 Awareness of CaCx, Pap smear among female UG in ibadan – <http://tsspace.library.utoronto.ca/bitstream/1807/4943/1/rh/04043.pdf>
- 8 Mutyaba T, Mmiro FA, Weiderpass E — Knowledge, Attitudes and Practices on Cervical Cancer Screening among the Medical Workers of Mulago Hospital, Uganda. *BMC Med Educ* 2006; **6**: 13.
- 9 Negri E, La Vecchiac, B Osetti — Risk of cervical cancer in women with family H/o breast and female genital cancer. *INT J Cancer* 2005; **117**: 880 (PUBMED).
- 10 McIntyre-Seltman K, Castle PE, Guido R, Schiffman M, Wheeler CM, ALTS Group — Smoking is a risk factor for cervical intraepithelial neoplasia grade 3 among oncogenic human papillomavirus DNA-positive women with equivocal or mildly abnormal cytology. *Cancer Epidemiol Biomarkers Prev* 2005; **14**: 1165-70.
- 11 Awodele O, Adeyomoye AAA, Awodele DF, Kwashi V, Awodele IO, Dolapo DC — A Study on Cervical Cancer Screening Amongst Nurses in Lagos University Teaching Hospital, Lagos, Nigeria. *J Cancer Educ* 2011; **26**: 497-504.
- 12 Winer R L, Hughes JP — condom use and rise of HPV infection in young woman. *New England J of Medicine* 2006; **354**: 2645-54.
- 13 Wawer MJ — The Lancet Jan 7, 2011 : online edition – Aaron AR Tobian – John Hopkins university, Baltimore.
- 14 Kristi monson, Pharma D, Arthur Schoenstodt MD.
- 15 Hopkins TG, Wood NJ — Hammer smith hospital, health professionals attitude and knowledge regarding HPV vaccine. *Journal of Paediatric and Child Health* 2009; **43**: 652-5.
- 16 Choi KA, Kimj — Korean Journal of Ob & Gy 2008; 51: 617 – 623 – Korea.
- 17 [www.cdc.gov/vaccine Safety/vaers/gradasil.html](http://www.cdc.gov/vaccine/Safety/vaers/gradasil.html) accessed Dec. 4, 2011.
- 18 Sussman A L , Helitzer D, *et al* – *Annfammed* 2007 July – Aug: 5(4) : 298-304.
- 19 Journal of the National cancer institute, your life, USA today.com/health/09.
- 20 Lancet 2006, 367 : 436 – 42 S A L man D A, Teret S P *et al*
- 21 US Food and drug administration New release : FDA approves New indication.
- 22 FDA vaccines, Biologic accessed Oct 21st 2009.
- 23 Urasa M, DarjE — Knowledge of Cervical Cancer and Screening Practices of Nurses at a Regional Hospital in Tanzania. *Afr Health Sci* 2011; **11**: 48-57.
- 24 Kabir M, Iliyasu Z, Abubakar IS, Mahboob S — Awareness and Practice of Cervical Cancer Screening among Female Health Professionals In Murtala Mohammed Specialist Hospital, Kano. *Niger Postgrad Med J* 2005; **12**: 179-82.