

Original Research Article**An Immunohistochemical study of Human Papilloma Virus 16 (HPV 16) Expression in the Various Types of Carcinoma Cervix in the Rural Population of Tamilnadu****Sylvester N.^a, Suban Mohammed Gouse^b, K.R. Gopalakrishan^c, B. Krishnaswamy^d**

^aAssistant Professor, Department of Pathology, Kamineni Institute of Medical Sciences, Nalgonda, Marketpalli, Telangana 508254, India.
^bAssistant Professor & Division Head Division, Dept. of Pathology, Ibn Sina National College, Jeddah, Kingdom of Saudi Arabia. ^cReader
^dProfessor & Head, Dept. of Pathology, Rajah Muthaiya Medical College and Hospital Annamalai University, Annamalai Nagar, Chidambaram, Tamil Nadu 608002, India.

Abstract**Corresponding Author:**

K.R. Gopalakrishan,
Reader, Dept. of Pathology,
Rajah Muthaiya Medical College
and Hospital, Annamalai
University, Annamalai Nagar,
Chidambaram, Tamil Nadu
608002, India.

E-mail:
krgkrish.saba@gmail.com

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Objective: To Study and observe the immunoexpression of HPV 16 in the various types of carcinoma cervix (Ca Cx) diagnosed in the rural tertiary care hospital in Tamilnadu.

Materials & Method: The biopsies 243 cases of carcinoma cervix which was diagnosed in the Division of Pathology for the period of 5 years from January 2011 and December 2016 were included for the study. A Total of 43 cases were selected for the immunohistochemical staining (AVIDIN-BIOTIN Method) to find the immunoexpression for HPV 16. A positive immunoexpression of 48.8% was observed for HPV 16 out of which 51.3% are Squamous cell carcinoma and 1 case of Carcinosarcoma of cervix. 6 cases of Adenocarcinoma and 1 case of small cell carcinoma was negative for HPV 16 immunoexpression.

Conclusion: Regular and periodic screening for all women above 30 years for cervical cancer and Screening of the most common high-risk HPV types should be done. Cervical cancer awareness programs should have regular follow up.

Keywords: Carcinoma Cervix; High Risk Human Papilloma Virus; HPV 16; Immunoexpression.

Introduction

Carcinoma cervix is one of the leading malignant neoplasms in the world as well as in Indian subcontinent. It is one of the major cause of morbidity and mortality which disproportionately affects the poorest population of developing countries [1,9]. Carcinoma cervix relatively affects young female population. The association of several risk factors which include promiscuity, multiple sexual partners, and intercourse at an early age, oral contraceptives, and smoking was demonstrated by epidemiological studies. However, the association of viral infection was considered an important factor for over a century. The present study was undertaken to analyse the histopathologic pattern of carcinoma cervix and to study

the association of HPV 16 immunoexpression in selected cases in the rural population of Tamilnadu.

Materials and Method

A total of 243 biopsies, diagnosed as carcinoma of cervix in the Department of Pathology, Rajah Muthiah Medical College and Hospital, Annamalai University, Chidambaram, for the period of 5 years from January 2011 and June 2016 were included in the study. A 4 micrometre thickness sections from paraffin embedded blocks were subjected to routine Haematoxylin and Eosin staining procedure. HPV 16 immunostaining with Streptavidin Biotin Conjugate Method (ABC Method) was

carried out in selected cases. The data was analysed for the histopathological types of carcinoma cervix and positive immunostaining. The positive control was provided by Biogenix.

Observation

Two hundred sixty nine cases of Female Genital Tract (FGT) malignancy cases were diagnosed in the study period. In that, carcinoma cervix accounted for 243 cases (90.3%). The commonest histopathological diagnosis of Carcinoma cervix was Squamous cell carcinoma, 235

cases (95.3%) followed by adenocarcinoma of cervix 6 cases (2.5%) & 1 case of carcinosarcoma (0.41%)

Out of the 43 cases of Ca cx selected for the immunohistochemical (including all variants) 48.8% showed positive immunoexpression for HPV 16 (The positive control was provided by Biogenix). The most common positive staining for HPV 16 was observed in Squamous cell carcinoma of cervix (51.3%). Carcinosarcoma and Small cell carcinoma of cervix showed negative immunoexpression for HPV 16.

Table 1: Incidence of Malignancies in Women

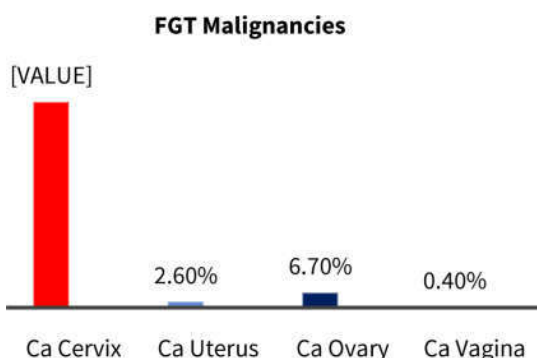
1	Total number of biopsies	26,026
2	Total number of malignancies	1511 (5.8%)
3	Malignancies in women	758 (50.1%)
4	Malignancies of Female Genital Tract	269 (35.5%)
5	Malignant tumors of breast	162 (21.4%)
6	Malignant tumors of other systems	327 (43.1%)

Table 2: Incidence of FGT Malignancies

1	Malignant tumors of cervix	243 (90.3%)
2	Malignant tumors of uterine body	7 (2.6%)
3	Malignant tumors of ovary	18 (6.7%)
4	Malignant tumors of vagina	1 (0.4%)

Table 3: Positive immunoexpression for HPV 16 in the Carcinoma cervix cases

S. No.	Histopathological type	Number of Cases of Ca Cx	Positivity for HPV 16
1	Squamous cell Carcinoma	39	20 (51.3%)
2	Adenocarcinoma	1	1
3	Small cell carcinoma	2	0
4	Carcinosarcoma	1	0
	Total	43	21 (48.8%)



Graph 1:

Discussion

Carcinoma of cervix (Ca Cx) is the second leading cause of death in female malignancy [1,2]. Although Human Papilloma Viral (HPV) infection proved 100% to be the cause of cancer cervix [3]. HPV 16 & 18 is responsible for about 70-80% of the cervical cancer worldwide [4]. A

uniquely lethal character of the Ca Cx by HPV infection is it strikes the women a very early and relatively young age [5]. The distribution of HPV 16 is around 50 – 60% in India and various parts of the world [6,7]. In the present study we tried to estimate the prevalence of the HPV 16 in the specimen of carcinoma cervix in the rural region medical college hospital. The prevalence of HPV 16 in the present study is around 51% which is comparable with the other incidence rate [8,9]. Although multifactorial causes are implicated in CaCx, early age exposure to HPV virus is attributed to almost all cases of the carcinoma cervix [10,11]. The screening program which is already in existence like Visual Inspection with Acetic acid (VIA) along with PAP smear should include the detection of HPV strains, at least the high-risk strains HPV 16 & 18 [11]. Since HPV 16 prevalence in asymptomatic is also high [12]. Easy accesses should be available to the awareness programs in the rural and underdeveloped areas. Awareness program essentially in the native language about cervical cancer and the screening modalities along with personal hygiene. Follow-up in positive cases of screened. There

are very good model projects which uses cost effective HPV screening, self-sampling and effective and result-oriented low-cost treatment modalities [13], which we can adapt to decrease the burden of Ca Cx and to give effective treatment for the HPV positive cases.

Conclusion

The Carcinoma cervix, although showed an alarming rate of increase in Indian population and with more than substantial evidence of the major causative factor, Human Papilloma Virus (HPV 16). There are no nationwide screening programs for detection of HPV in cervical cancer, almost 80% of Ca Cx is by HPV infection. It is suggested to screen the at least the most common high-risk Human Papilloma Virus, namely HPV 16 along with the routine screening modalities at the level of rural medical college hospitals and try to adapt cost effective screening and treatment model projects.

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