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Research Article

A COMPARATIVE STUDY TO ASSESS THE EFFECTIVENESS OF CERVICAL CANCER SCREENING METHOD BY VISUAL INSPECTION WITH ACETIC ACID VERSUS VISUAL INSPECTION WITH LUGOL'S IODINE

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ABSTRACT

Back ground of study: Cervical cancer is the second commonest cancer among Indian women (As per Globocan 2018). Cervical cancer is a preventable disease as it has a well –defined, long pre-malignant phase which can be detected by regular screening tests and follow up. Unfortunately, most women in India don't seem to be aware about the screening.When compared to other screening method VIA/VILI shows better results and sensitivity and it is easy to use, cheap, easy available and accessible test which is done in a minimum time of 10 minutes with no pain and immediate finding which then can be followed in case of positive. Statement of the problem: A comparative study to assess the effectiveness of cervical cancer screening method by visual inspection with acetic acid versus visual inspection with Lugol's iodine among women attending OPD at Bhagyoday Tirth charitable hospital Sagar Madhya Pradesh. Objectives of the study: (1) To assess the women for cancer cervix screening by VIA method. (2) To assess the women for cancer cervix screening by VILI method. (3) To compare the effectiveness of VIA and VILI method. (4) To associate the finding of VIA and VILI with selected demographic variables. Methodology: The present study was done to evaluate the effectiveness of cervical cancer screening method among women. In this study, the approach was qualitative approach and non –experimental research design was used. The sample consisted of 100 women, selected through non probability convenient sampling technique.Result and discussion:The data collected was analysed using descriptive and inferential statistics. The present study revealed that the mean score of VIA among women was 0.08 ±0.27 as against mean 0.13±0.34 of VILI among women who underwent screening for cancer. The calculated't' value is t=1.092 was not found to be statistically significant. So there is no significant difference between VILI and VIA in screening cancer.The study findings revealed that there is no association with the findings of VIA and VILI method of screening cervical cancer among women and their selected demographic variables except for age at menarche (2=9.136, df=2, p = 0.028). Conclusion: The findings revealed that positive for VIA was 8(8%), negative for VIA was 92(92%), positive only for VILI was 13(13%), positive for both VIA and VILI 8(8%), negative for VILI 87(87%) and positive for only VILI 5(5%) denoting false positive which infers that VILI is the effective method of screening cervical cancer among women.

Keywords :-Cervical Cancer, Visual Inspection with Acetic Acid, Visual Inspection with Lugol's Iodine, Colposcopy

INTRODUCTION

Cervical cancer is the second commonest cancer among Indian women. Cervical cancer is a preventable disease as it has a well–defined, long pre-malignant phase which can be detected by regular screening tests and follow up. Unfortunately, most women in India don't seem to be aware about the screening. [1]

Cervical malignancy is the cancer in the lining of the cervix. Cervical malignancy does not form suddenly, gradual changes takes place from a normal cervix to pre-cancerous to cancer. These changes usually take several years, but sometimes it can happen in less than a year. For some women pre-cancerous stage may

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resolve without any treatment. If these pre cancers are treated, cancer can be prevented. [2] The cervix uteri can be examined, palpated, scraped, cultured and biopsied perhaps more than any other area in the female body. These lead to extensive screening program for early detection and treatment of the disease thereby contributing remarkable lowering of mortality from cervical cancer. The easy access to cervix has also lead to the evolution of the skillful application of radiation technique to this cancer, resulting in the best overall cure rate for any malignancy in human body. [3]

The study about cancer Shrestha S Dhaka P (2016)conducted work to find the knowledge, attitude and practice about cervical cancer screening. It was a descriptive cross-sectional, data collected by semi-structured interview. Out of ninety six women, mean age was 39.83 ± 6.67 and 91.6% respondents followed.[4].

Statement Of The Problem

A comparative study to assess the effectiveness of cervical cancer screening method by visual inspection with acetic acid versus visual inspection with Lugol's Iodine among women attending OPD at Bhagyoday Tirth charitable hospital Sagar Madhya Pradesh.

Objectives

(1) To assess the women for cancer cervix screening by VIA method.
(2)To assess the women for cancer cervix screening by VILI method.
(3)To compare the effectiveness of VIA and VILI method.
(4)To associate the finding of VIA and VILI with selected demographic variables.

Hypothesis

H1: There have been a significant difference between VIA and VILI screening method among women.
H2: There have been a significant association between VIA and VILI screening method with selected demographic variables.

MATERIAL AND METHODS

The research setting for the study was conducted in Bhagyoday Tirth Charitable Hospital Sagar after getting formal permission. This is 300 bedded multispecialty Hospital, which is equipped with all facilities. This hospital has all the specialty departments and OPD. The monthly statistics of gynaecology OPD is 500.

Tools and Techniques

This section deals with the demographic variable. This is the characteristics of the sample. This sample includes details of women like age, marital status, menstrual flow, family history of cervix cancer, age at menarche and number of abortion etc.

Scoring Method

After extensive review of literature, discussion with the experts and investigators professional experience, the demographic variables was developed to assess the effectiveness of cancer screening method.
PART – I - Demographic variable.
PART – II – Performing visual examination by using Acetic Acid.
PART - III - Performing visual examination by using Lugol's Solution.
PART- IV- Performing Colposcopy.

Data Collection Process

The main study was conducted after getting formal permission from the Principal of BhagyodayTirth nursing College, written permission BhagyodayTirth Hospital Approval will be obtained from the Nursing superintend. The data are going to be collected for a time scale of 1month from 16-8-2019 to 16-9-2019. A total of 100 samples who fulfilled the inclusion criteria of sample selection were selected using Non-probability convenient sampling technique. A brief self-introduction along with an explanation of the purpose of the study was given to the samples. After obtaining written informed consent from them, data collection will be commenced. Samples were made to sit comfortably in a well-ventilated area. At first, demographic details were obtained separate room was arranged with labour table with all necessary articles needed? Women's with positive visual examination with acetic acid and visual examination with Lugol's iodine was referred to gynaecologist for further investigations and treatment. All ethical principles were attach to all over the period of the study.

Analysis and Interpretation

The data collected was organized, tabulated and analysed according to the objectives. Data analysis begins with description that applies to the study in which the data are numerical with some concepts. Descriptive statistics allows the researcher to organize the data and to examine the quantum of information and inferential statistics is used to decide the relationship and causality.

RESULTS

The mean score of VIA among women was 0.08(SD ±0.27) as against mean 0.13(SD±0.34) of VILI among women who underwent screening for cancer. The calculated' value is t=1.092 was not found to be statistically significant. From the above it is evident that statistically there is no significant difference between VILI and VIA in screening cancer. The findings shows that with regard to age, most of them 42(42%) were in the

age group of 35 – 40 yr, 30(30%) were in the age group of 30 – 35 yr and 28(28%) were in the age group of 40 – 45 yrs. Regarding marital status, most of them 70(70%) were married, 18(18%) were widowed, 7(7%) were divorced and 5(5%) were unmarried. With respect to menstrual history, most of them 50(50%) had menstruation after 28 days, 30(30%) had menstruation more than 28 days and 20(20%) had menstruation less than 28 days. Considering the educational status of women, most of them 34(34%) were educated up to school level, 28(28%) had higher secondary education, 19(19%) were illiterate, 13(13%) were diploma/certificate and 6(6%) were graduate / post graduate. Regarding religion, most of them 58(58%) were Hindus, 19(19%) were Jains, 12(12%) belonged to other religion and 11(11%) were Muslims. Age at menarche revealed that, most of them 55(55%) were aged below 13 yr, 25(25%) were aged below 14 yr, 19(19%) were aged below 12 yr and only one (1%) were aged above 14 yr. With regard to number of abortion, most of them 79(79%) had no abortion, 18(18%) had only one abortion and 3(3%) had two abortions.

Nursing Practice

Community health nurses can play a major role in educating the women about cause, sign and symptom of cervical cancer. Community health nurse can implement the education campaigns, mass screening programs using VIA/VILI involving mass media to join their hands in identifying the cases of cervical cancer. Community health nurse needs to ensure and motivate the women by proper education to maintain personal hygiene, safer sex practice.

Nursing Education

The nurse educator should be competent enough to train the students about VIA/VILI so they can perform in the Community health nursing posting to educate the public /women's. Encourage the nursing students for effective utilization of evidence based practice.

Nursing Administration

Nurse administrators can organize formal educating programme for women's and mass health education campaigns in prevention of cervical malignancy and management of cancer by informing about cancer screening method.

Nursing Research

Disseminate the findings of the study through conferences, seminars and by publishing in journals and websites. Promote more research in developing alternative methods and in different settings.

Table 1. Association of cervical cancer screening among women by VIA method with selected demographic variables.

Demographic Variables	Negative		Positive		Chi-Square value
	No.	%	No.	%	
Age					X^2=4.762 DF=2 p = 0.092 N.S
30 - 35 yr	28	28.0	2	2.0	
35 - 40 yr	36	36.0	6	6.0	
40 - 45 yr	28	28.0	0	0	
Marital Status					X^2=2.756 DF=3 p = 0.431 N.S
Married	63	63.0	7	7.0	
Unmarried	5	5.0	0	0	
Widowed	18	18.0	0	0	
Divorced	6	6.0	1	1.0	
Menstrual History					X^2=0.181 DF=2 p = 0.913 N.S
28 days	46	46.0	4	4.0	
Less than 28 days	18	18.0	2	2.0	
More than 28 days	28	28.0	2	2.0	
Educational status					χ^2=3.449 DF=4 p =0.486 N.S
Illiterate	19	19.0	0	0	
Schooling	31	31.0	3	3.0	
Higher secondary	25	25.0	3	3.0	
Diploma / Certificate	11	11.0	2	2.0	
Graduate/Postgraduate	6	6.0	0	0	
Religion					χ^2=4.789

Hindu	55	55.0	3	3.0	DF=3 p = 0.188 N.S
Muslim	9	9.0	2	2.0	
Jain	16	16.0	3	3.0	
Others	12	12.0	0	0	
Age at menarche					χ^2=3.953 df=3 p =0.267 N.S
Below 12 yrs	19	19.0	0	0	
Below 13 yrs	48	48.0	7	7.0	
Below 14 yrs	24	24.0	1	1.0	
Above 14 yrs	1	1.0	0	0	
Number of abortion					χ^2=2.397 df=2 p = 0.302 N.S
None	74	74.0	5	5.0	
One	15	15.0	3	3.0	
Two	3	3.0	0	0	
Three	-	-	-	-	
More than three	-	-	-	-	

Table 2. Association of cervical cancer screening among women by VILI method with selected demographic variables

Demographic Variables	Negative		Positive		Chi-Square value
	No.	%	No.	%	
Age					χ^2=0.341 df=2 p = 0.843 N.S
30 - 35 yrs	27	27.0	3	3.0	
35 - 40 yrs	36	36.0	6	6.0	
40 - 45 yrs	24	24.0	4	4.0	
Marital Status					χ^2=3.737 DF=3 p = 0.291 N.S
Married	58	58.0	12	12.0	
Unmarried	5	5.0	0	0	
Widowed	17	17.0	1	1.0	
Divorced	7	7.0	0	0	
Menstrual History					χ^2=1.149 DF=2 p = 0.563 N.S
28 days	44	44.0	6	6.0	
Less than 28 days	16	16.0	4	4.0	
More than 28 days	27	27.0	3	3.0	
Educational status					χ^2=5.136 DF=4 p = 0.274 N.S
Illiterate	14	14.0	5	5.0	
Schooling	29	29.0	5	5.0	
Higher secondary	26	26.0	2	2.0	
Diploma / Certificate	12	12.0	1	1.0	
Graduate Post graduate	6	6.0	0	0	
Religion					χ^2=4.705 DF=3 p = 0.195 N.S
Hindu	47	47.0	11	11.0	
Muslim	11	11.0	0	0	
Jain	18	18.0	1	1.0	
Others	11	11.0	1	1.0	
Age at menarche					χ^2=9.136 DF=2 p = 0.028 S*
Below 12 yr	17	17.0	2	2.0	
Below 13 yr	46	46.0	9	9.0	
Below 14 yr	24	24.0	1	1.0	
Above 14 yr	0	0	1	1.0	
Number of abortion					χ^2=0.565 DF=2 p = 0.754
None	68	68.0	11	11.0	

One	16	16.0	2	2.0	N.S
Two	3	3.0	0	0	
Three	-	-	-	-	
More than three	-	-	-	-	

Table 3. Frequency and percentage distribution of screening for cervical cancer among women by VIA.

Domain	Positive		Negative	
	Frequency	%	Frequency	%
VIA	8	8.0	92	92.0
Colposcopy	16	16.0	84	84.0

Frequency and percentage distribution of screening for cancer among women byVIA.

Domain	Positive		Negative	
	Frequency	%	Frequency	%
VILLI	13	13.0	87	87.0
Colposcopy	19	19.0	81	81.0

Percent Positivity of VIA/VILI with Colposcopy

COLPOSCOPY	CIN-1	CIN-2	CIN-3
VIA	84	8	8
VILI	81	6	13

Comparison of the findings of VIA over VILI among women undergoing cervical cancer screening.

Domain	Positive		Negative		False Positive	
	Frequency	%	Frequency	%	Frequency	%
VIA	8	8.0	92	92.0	0	0
VILI	13	13.0	87	87.0	0	0
VIA vs. VILI	8	8.0	87	87.0	5	5.0
Overall	**8**	**8**	**87**	**87.0**	**5**	**5.0**

Compare the results of VIA over VILI among women undergoing screening for cervical cancer.

Domain	Mean	S.D	Mean Difference	S.D Difference	't' test
VIA	0.08	0.27	0.05	0.46	t = 1.092
VILI	0.13	0.34			p = 0.277, N.S

DISCUSSION

The selected demographic variables of the study were age, marital status, menstrual history, education, religion, age at menarche and no. of abortion. The study findings revealed that there had been no significant difference between VIA and VILI screening method. None of the demographic variables had shown statistically significant association with findings of VIA method of screening cervical cancer among women. But the demographic variable age at menarche had shown statistically association with findings of VILI method of screening cervical cancer (χ^2=9.136, DF =2, p = 0.028)among women at p<0.05 level and the other demographic variables had not shown statistically significant association with findings of VILI method of screening cervical cancer among women. Hence the VILI is the effective method of screening cervical cancer among women.

CONCLUSION

The present study assessed the effectiveness of cervical malignancy screening method among women's attending OPD. The regular screening of population by VIA/VILI is a cost effective method for early detection of premalignant and malignant cervical lesions and down staging of carcinoma cervix. The procedure is simple, inexpensive and can be performed in the outpatient department. Hence, it should be recommended routinely as a method of improving reproductive health. Considering the high rate of cervical neoplastic in developing countries, there is a great need for an organised, well-targeted screening program. It should

involve periodic gynaecological examination along with education of women about danger signals. It will certainly bring the high mortality due to carcinoma cervix and above all will alleviate the suffering caused by this disease.

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