

STUDY OF MANAGEMENT AND HEALTH EDUCATION OF CERVICAL CANCER

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ABSTRACT

Objective: The main objective of the study was to assess the management of cervical cancer by chemotherapy and to provide health education for women attending oncology OPD. **Methodology:** A prospective observational study was conducted in oncology department of tertiary care hospital. The data was collected from the out-patient and in-patient department after considering inclusion and exclusion criteria for a period of 6 months and a total of 160 patients were analyzed with data collection form by interviewing the patients about the Socio-demographic questionnaire, EORTC scale for the evaluation of symptoms and QOL (Quality of life). Statistical tools like Chi-square test were applied to the data by using SPSS software. **Result:** In a total of 160 cervical cancer patients, majority of cervical cancer patients were under age group of 50-60 years (50%), illiterates (81.25%), menopausal (93.75%) loco- regional spread (91%) and having post vaginal bleeding(30%). Higher number of patients were treated with cisplatin. Among the platinum co-ordination complexes like cisplatin (90.6%) were commonly prescribed, carboplatin (6.25%), paclitaxel(3.16%) was only used for metastatic cancer. The results of our study showed that different health education methods (such as calls, mother/daughter education, educational brochures, face to face interviews) are effective in modifying cervical cancer screening behaviour of women. The Educational message focused on the importance of receiving vaccine and sexually transmitted infections, regular screening, overcoming the side effects of chemotherapy such as metallic taste produced by use of cisplatin overcome by chewing the sugar free gums. **Conclusion:** Cervical cancer occurs over age 30 and commonly seen in Postmenopausal women. The present study showed that the cisplatin is effective for the treatment of cervical cancer. Different interventions like limiting number of sexual partners, increase in condom use, reduce cigarette smoking, vaccination against high-risk HPV, delay first sexual intercourse until the late teens, avoid using birth control pills and health behaviour changes provides an effective base for cervical cancer prevention. To further improve QOL of patients interventions focusing on social and psychological support and physical rehabilitation may be needed.

KEYWORDS: Cervical cancer, chemotherapy, Health education, HPV (Human Papilloma Virus), Quality of life (QOL), European Organization for Research and Treatment of Cancer scale (EORTC).

INTRODUCTION

Cervical cancer is a disorder in which malignant (cancer) cells form in the tissues of the cervix. The cervix is the lower (decrease), slender finish of the uterus (the hollow, pear - shaped organ where a foetus (or) embryo develops) & prompts to vagina (birth canal).^[1] The cervix is comprised of endocervix (glandular cells) and exocervix (squamous cells). Where squamous cells and glandular cells meet in cervix called TRANSFORMATION ZONE.^[2]

Cervical cancer is the fourth most harmful (common) malignant growth(cancer). Of the assessed 570,000 new

cervical cases annually, HPV 16 and HPV 18 recorded for 71% of cases; while HPV types 31, 33, 45, 52, 58 recorded for another 19% of cervical cancer cases.^[3] Cervical malignancy(cancer) will happen in 1 in 53 Indian ladies in course of their lifetime compared with 1 in 100 ladies in more developed areas of the world.^[4]

Early cervical cancer may not develop signs or symptoms. Women should have regular check ups, including the HPV test.^[5] Abnormal vaginal bleeding, Bleeding and spotting that occurs between regular periods, Bleeding after intercourse (postcoital bleeding), Bleeding after menopause (postmenopausal bleeding), Increased vaginal discharge, pelvic pain, pain during

intercourse, abdominal pain. Advanced stage signs and symptoms include - swelling of the legs, problems with urinating or having bowel movement, blood in urine (hematuria).^[6]

Risk factors of cervical cancer include - early age of sexual debut, long term use of oral contraceptives, young age at first full term pregnancy, multiple sexual partners or high risk partners,^[7] genetic polymorphism, immunosuppression,^[8] history of sexually transmitted infection like chlamydia infection, history of HPV- 16, 18, 31, 33, 35,45, 52, 58, tobacco smoke.^[9] The Pathogenesis widely related to disrupting cell cycle growth - the high risk HPV E6 and E7 gene products are involved in viral replication and oncogenesis bind to P53 and prevents its normal activities which is G1 arrest, apoptosis, DNA repair.^[10] Diagnosis of cervical cancer include- the HPV test,^[11] PAP test,^[12] colposcopy,^[13] cervical biopsy.^[14]

Chemotherapy used for cervical cancer are - platinum co-ordination complexes like cisplatin, carboplatin and paclitaxel, topotecan.^[15] Cisplatin and carboplatin were vital for clinical management in decreasing the symptoms of cervical cancer,^[16] and is accompanied by some of the side effects like neutropenia, metallic taste, alopecia, anaphylaxis, nephrotoxicity, ototoxicity, nausea, vomiting, diarrhea.^[17]

During chemotherapy, some patients get a low count of neutrophils called **neutropenia**, as a result patients are more prone to infections. So, it is important to correct neutropenia.^[18] Limit the number of sexual partners. Practice safe sex - using physical barriers (condom)^[19] Get an HPV vaccine. **HPV VACCINE DOSIN - 2-Dose schedule:** 2 doses of HPV vaccine, given atleast 6 months is recommended for people younger than 15years. Avoid early marriages and early intercourse. Get regular screening, **3-Dose schedule** - 3 doses of HPV vaccine (0, 1-2, 6 months) is recommended for adolescents, young adult ages 15-26 & for people with weakened immune systems. For metallic taste - chew sugar free gums and maintain good oral hygiene, like brushing teeth before and after each meal. Dietary modifications include antioxidants like carrot, pumpkins, broccoli, kiwi and folic acid supplements like green leafy vegetables, avocados and cruciferous vegetables like cabbage, cauliflower should taken.^[20]

The main objectives of the study is to find out the prescription patterns in treatment of cervical cancer, classify types of cervical cancer, evaluate various symptoms using EORTC scale, QOL of patients using EORTC scale.

MATERIALS AND METHODS

A prospective observational study conducted in oncology department in a tertiary care hospital for duration of 6 months.

The data was gathered from the in-patient and out-patient department by interviewing the patients and reviewing their prescriptions. The data collection format was verified and authenticated by the hospital preceptors for the study. Study involved 160.

Subjects who were diagnosed with cervical cancer. Patients under 18years, pregnancy, hysterectomized patients, lactating patients are excluded from the study.

Written informed consent was taken from patient or care provider to collect data. The data form includes Socio-demographic information like age, gender, weight, marital status, educational status, Past Medical History, social history, family history, history of cervical cancer, types of cervical cancer, chemotherapy chart and EORTC scale attached to it.

Statistical Analysis: Descriptive statistics was done by using SPSS software to determine mean and standard deviation of collected data. The statistical tool Chi square test was performed to determine P-value between the different variable with data collected (side effects vs Drugs, symptom scale vs drugs, functional item scale vs drugs). The P-value is used in determining the statistical significance within statistical hypothesis for drug related problem in schizophrenia patients to baseline visit. The P-value was set at <0.05 and confidence interval was 95%.

RESULTS

In present study around 160 cases were included as per our criteria. **Table -1** indicates socio demographic background of cervical cancer patients. Majority of the patients with cervical cancer are under 50-60 yrs (50%). Postmenopausal women (93.7%) are more prone to cervical cancer when compared to premenopausal women. Most of the patients are having the history of cervical cancer between 0-5yrs (62.5%). Number of patients with past medical history are (32%). patients with Loco-regional stage are more in number (91%) when compared to local and metastatic stage. Post vaginal bleeding (30%) were observed more among the patients than other symptoms. The p value was found to be clinically significant (P-value < 0.05) for the entire variables at confidence interval 95%.

Table 1: Mean, Standard deviation, P- value table.

Category:	Sub category	Number of Patients:	Standard Deviation:	P-value:
Age	30-40yrs	10	7.158	0.0010
	40-50yrs	30		
	50-60yrs	80		
	>60yrs	40		
Menopausal status	Postmenopausal	150	0.496	0.0078
	Premenopausal	10		
Educational status	Literates	30	8.844	0.0049
	Illiterates	130		
History of Cervical cancer	0-5yrs	100	0.378	0.0065
	5-10yrs	50		
	>10yrs	10		
Stages of cervical cancer	Local	5	22.063	0.0010
	Loco-regional	145		
	Metastasis	10		
Social History	Smoking	5	0.352	0.0052
	Alcohol	15		
	Toddy	20		
Past Medical History	HTN	35	-	-
	DM-2	15		
Symptoms	Postvaginal bleeding	48	30.118	0.0035
	White discharge	40		
	Postcoital bleeding	28		
	Lower back ache	20		
	Intermittent spotting	20		
	Lower abdominal pain	4		

Table -2: Eortc Scales.

Category:	Sub category	Standard Deviation:	P-value:
Symptom scale	Symptom experience	30.118	0.0054
	Body image		
	Sexual / vaginal functioning		
	Lymphoedema		
	Peripheral neuropathy		
	Menopausal symptoms		
	Sexual worry		
Functional items scale	Sexual activity	22.063	0.0011
	Sexual enjoyment		
Quality of life scale	-	8.260	0.0001

Table 3: Prescription patterns of Chemotherapy drugs.

Drugs	Sub category:	No of patients:
Cisplatin	Platinum co-ordination complexes	145
Carboplatin	Platinum co-ordination complexes	10
Paclitaxel	Taxanes	5

Table 4: Weeks of chemotherapy under observation.

WEEKS OF CHEMOTHERAPY UNDER OBSERVATION	No of patients:
1 Week	10
4 Weeks	150

Table-5: Drug related problems with Chemotherapy drugs.

Side effects:	No of patients observed
Alopecia	50
Nausea	160
Vomiting	160
Neutropenia	50
Diarhea	100
Constipation	90
Hypersensitivity reactions	40

Table - 2 represents the EORTC scale items like symptom scale, function item scale and Quality of life scale. **Fig 1** represents the comparison of mean scores of EORTC QLQ CX-24 between pre-treatment and current treatment. Symptom experience (SE), Lymphoedema (LY), Menopausal symptoms (MS), Sexual worry (SXW), Sexual activity (SA), Sexual enjoyment (SXE) are higher during pre-treatment. **Fig 2** represents comparison of mean scores of EORTC QLQ C-30 between pre-treatment and current treatment. Quality of life of patients is improved in current treatment when compared to pre-treatment. Physical functioning, Role functioning, Emotion functioning, Cognitive functioning, Social functioning, Symptom scale are higher in pre-treatment when compared to current treatment.

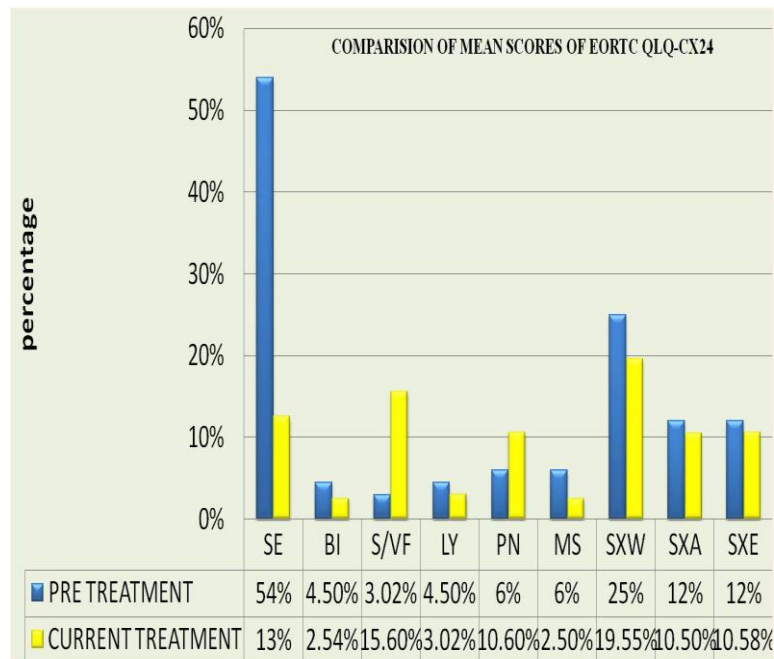


Fig. 1: EORTC CX-24.

A high score representing greater degree of symptoms for following dimensions – SE, Symptom experience; BI, Body image; S/VF, Sexual/ vaginal functioning; LY, Lymphoedema; PN, Peripheral neuropathy; MS,

Menopausal symptoms; SXW, Sexual worry. A high score representing a lesser degree of problems for the following dimensions – SXA, Sexual activity; SXE, Sexual enjoyment.

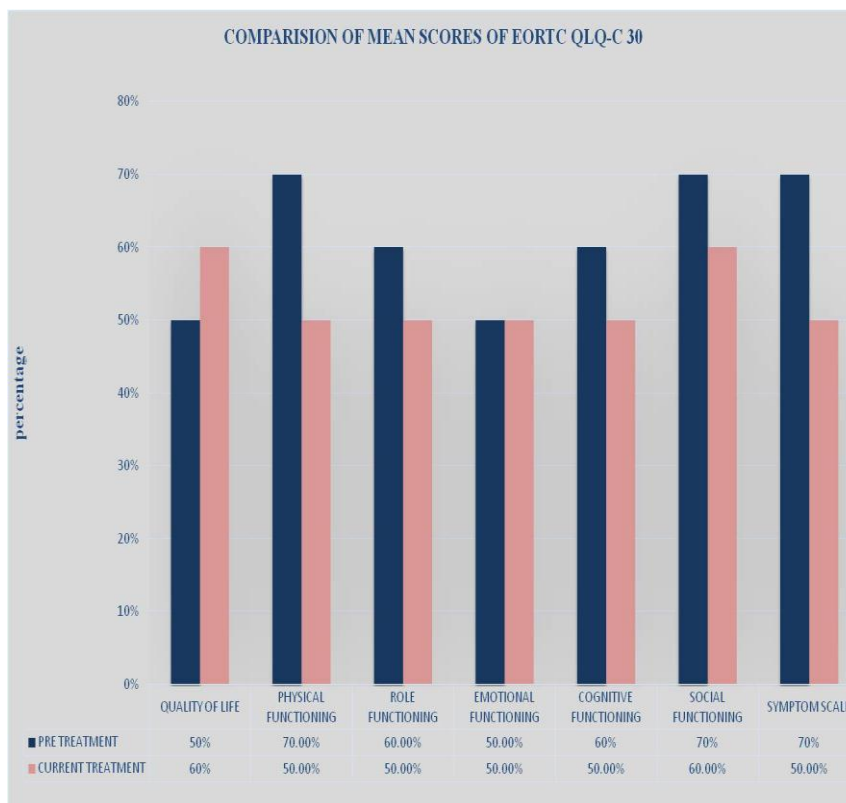


Fig. 2: EORTC QLQ C-30.

A high score for QOL represents a high QOL (Quality of life).

A high score for FUNCTIONAL SCALE (physical functioning, role functioning, emotional functioning,

cognitive functioning, social functioning) represents a high / healthy level of functioning.

A high score for SYMPTOM SCALE represents a high level of symptomatology.

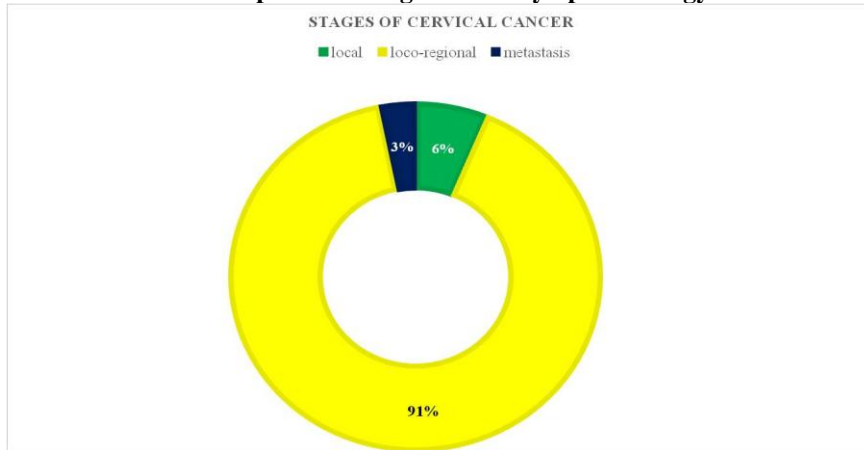


Fig. 3: Stages Of Cervical Cancer.

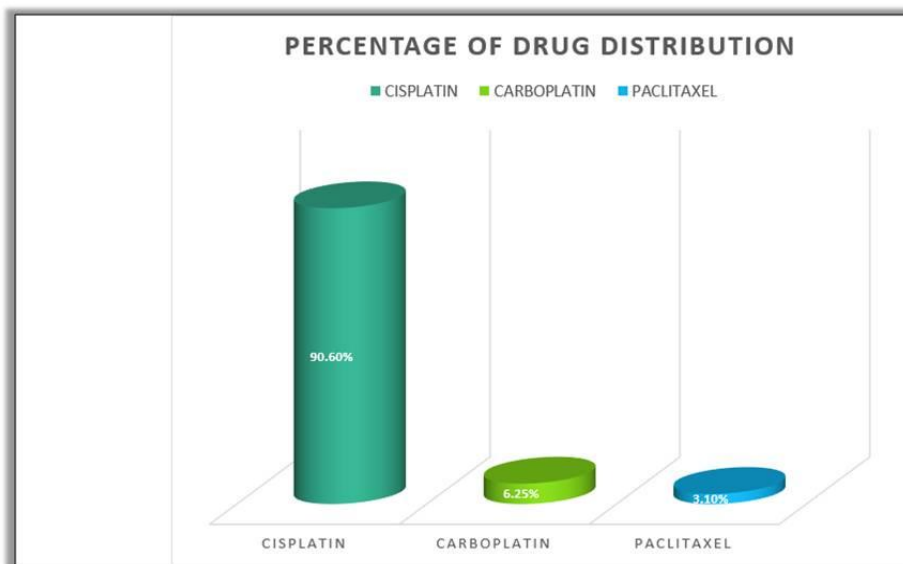


Fig. 4: Frequency Of Drugs Used.

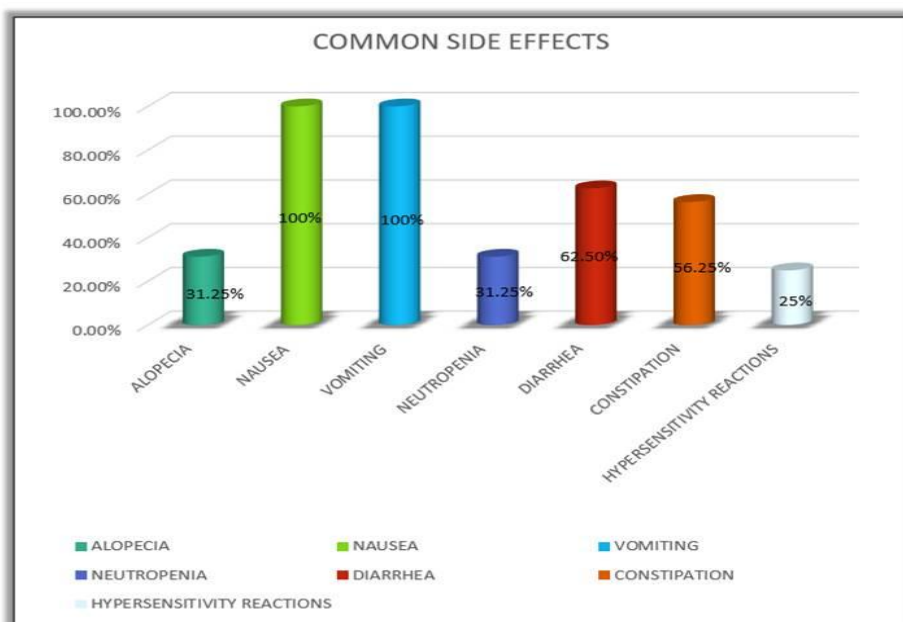


Fig. 5: Common Side Effects Of Therapy.

As per prescription pattern cisplatin (90.6%) was more preferred than carboplatin (6.25%) as mentioned in **Table-3** and **Fig 4**. Most of the patients (93.75%) were under 4 Weeks of observation as shown in the **Table - 4**. Drug related problems with chemotherapy drugs are mild (81.2%), moderate (12.5%), severe (6.25%). Most common side effects observed were nausea, vomiting, diarrhea, constipation, neutropenia etc indicated in **Table – 5** and **Fig 5.1**.

Whereas **Fig 3** explains about the stages of cervix cancer observed as per our study were loco-regional is found to be mostly seen in subjects which was about 91% of total subjects considered or the study.

The chi square test was performed between variables like Weight vs Height (0.003), Stages vs Drugs (0.003), Side effects vs Drugs (0.002), Symptom scale vs Drugs (0.0048), Functional item scale vs Drugs (0.0045), Quality of life scale vs Drugs (0.001).

Here is the information regarding life style modifications, dietary modifications, vaccination we had provide to patients undergoing chemotherapy, initial stages patients and patients at risk of cervix cancer

LIFE STYLE MODIFICATIONS

During chemotherapy some patients get low count of neutrophils called **neutropenia**, as a result patients are more prone to infections. Infections during chemotherapy can be serious so it is important to know to correct the neutropenia.

Good hygiene is always important, precautions to protect

Wash your hands with soap and water before eating
 Keep your bottom area clean with soap and water after going to the toilet
 Shower with soap immediately after sex which might wash the virus off the skin
 Wash or peel fruits and vegetables before you eat them
 Chemotherapy can reduce number of red blood cells in blood this can lead to **Anemia**, adding Iron rich foods to diet can help to increase red blood cells. Foods that contain high levels of iron.

For sore mouth - Clean your mouth and teeth tenderly each day morning evening and after each meal, utilizing a soft bristled, toothbrush Keep your lips moist by utilizing Vaseline or flavoured lip emollient Avoid neat spirits, hot spices garlic onion and salty food Chew gum to help you to produce more saliva to keep your mouth moist

For Diarrhoea - Eat less fiber (Avoid raw fruits fruit juices cereals and vegetables).

Drink plenty of liquid to replace the fluid lost

For loss of appetite - Eating small meals and snacks throughout the day can be easier to manage.

For metallic taste - chew sugar free gums and maintain good oral hygiene like brush your teeth before and after each meal.

Dietary modifications

Antioxidants (vitamin A,C,E) – Carrot, pumpkins, broccoli, strawberries, kiwi, almonds should be taken these antioxidants prevent the types of free radical damage that have been associated with cancer development.

Folic acid supplements like green leafy vegetables beans peanuts, avocados should be taken for the formations of new cells.

Cruciferous vegetables – cabbage, cauliflower (contains INDOLE-3 CARBINOL). These vegetables contain chemicals called glucosinolates that fight cancer in several ways.

Side effects like loss of libido, vaginal dryness during and after treatment suddenly stop producing estrogen – may require estrogen replacement therapy or a topical estrogen cream.

Avoid smoking and alcohol.

Avoid emotional stress – by meditation, yoga.

Limit the number of sexual partners.

Practice safe sex – use physical barriers (condom)

Get an HPV vaccine

Avoid early marriages and early age intercourse.

Get regular screening.

HPV VACCINE DOSING

2- Dose schedule: 2 doses of HPV vaccine, given atleast 6months is recommended for people younger than 15years.

3-Dose schedule: 3 doses of HPV vaccine (0, 1-2, 6 months) is recommended for adolescents, young adult ages 15-26 & for people with weakened immune systems.

The minimum intervals are 4weeks between 1st and 2nd dose and 12 weeks between 2nd and 3rd dose & 5months between 1st and 3rd dose.

Table 6.1: Representation of Cervical Screening According To ACOG (American Cancer Of Obstetricians And Gynecology), ASCCP (American Society For Colposcopy And Cervical Pathology), USPSTF (United States Preventive Services Task Force).

TESTS	ACOG	ASCCP	USPSTF
PAP ONLY	Every 3years	Every 3years	Every 3years
PAP-HPV COTEST	Every 5years Age 30-65	Every 5years Age 30-65	Every 5years Age 30-65
HIGH RISK HPV ONLY	Every 3years Age > 25	Every 3years Age > 25	Every 3years Age 30-65

Table - 6.1: Represents HPV vaccination.

NAME OF THE HPV VACCINE	HPV VACCINE PROVIDE PROTECTION AGAINST STRAINS	DURATION OF PROTECTION
Bivalent vaccine (Cervarix)	HPV 16, 18	8.4 years
Quadrivalent vaccine (Gardasil)	HPV 6, 11, 16, 18	5 years
9 valent vaccine (Gardasil 9)	HPV 6, 11, 16, 18,31,33,45,52,58	7-8 years

DISCUSSION

A prospective observational study, “STUDY OF MANAGEMENT AND HEALTH EDUCATION OF CERVICAL CANCER” was conducted in tertiary care hospital in the outpatient and inpatient department. The data was collected for 160 patients using data collection forms.

As per our study among 160 patients, in our study most of the cervical cancer patients were between the age of 50-60yrs (50%). Similar nature of findings reported by Marc Arbyn et al.^[21]

In the present study, EORTC symptom scale was more (85%). Post vaginal bleeding, white discharge, post coital bleeding were the most frequent symptoms reported by 70% of people. A study by Sarah E

Stumbar,^[22] et al showed nearly 80% of patients were presented with similar symptoms.

Squamous cell carcinoma is the most frequent type of cervical cancer (90%), followed by adenosquamous carcinoma (10%), which is similar to that of Aswathy Sreedevi et al.^[23] Cisplatin(91%) was the most common drug, followed by carboplatin (7%) which is similarly seen in the other study of Haroon Li.^[24] The Chi square test was performed in our study showed that P-value was clinically significant, for all socio-demographic details, symptoms and EORTC scales, and therapy.

It was observed from our study that, platinum co-ordination complexes produce some of the side effects like alopecia, nausea, vomiting, diarrhea, nephrotoxicity, metallic taste, loss of libido, ototoxicity, anaphylaxis, leucopenia, neutropenia. Neutropenia and leucopenia is

the most commonly seen side effect. Paclitaxel was used in metastatic cancer. No ADRs were reported in our study.

CONCLUSION

Cervical cancer occurs over age 30 and is commonly seen in the older age group (50-60 years) and in illiterates. In present study, cisplatin is preferred for cervical cancer.

Among the platinum co-ordination complexes, Cisplatin and Carboplatin were vital for clinical management in decreasing the symptoms of cervical cancer and it is accompanied by some of the side effects, but dose adjustments are done to avoid these effects. Paclitaxel was the most commonly used drug for metastatic cancer. To overcome the nephrotoxicity, it is important to be hydrated.

Different health education methods (such as calls, mother/daughter education, educational brochures, face to face interviews) are effective in modifying cervical cancer screening behavior of women. The Educational message focused on the importance of receiving vaccine and sexually transmitted infections, regular screening, overcoming the side effects of the chemotherapy. Encouraging women to follow cervical screening guidelines is also important.

The study recommends that proper involvement of clinical pharmacist service is to identify and avoid drug related problems as implicated. By doing so, mortality and further complication must be prevented. Our study shows that the most of the patients were treated with cisplatin. We observed that Minimal side-effects were managed with Adrenaline and Hydrocortisone and by dose adjustment. The drug interactions were moderately found which can be overcome by alteration of frequencies.

In the present study, the prescription of Anticancer drugs was found to be rational. However to ensure, safe effective and well balanced therapeutic management of chemotherapy, prescribers should be aware of appropriate dose, dosage regimen and overall indications. Health education plays an important role in improving knowledge and perceptions, and increasing self - efficacy of women about cervical cancer and screening.

We suggest the design of cervical cancer prevention education within the students curriculum to increase knowledge such that the spread of virus is minimized and these health sciences students are prepared to educate the communities as part of their future practice in health professions.

A detailed explanation about the nature of the disease and the drugs prescribed would increase the participation

of patients in treatment. So the awareness on health care providers, prescribers and pharmacists will be valuable.

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