A PROSPECTIVE STUDY ON CLINICAL EVALUATION, TREATMENT PATTERN AND ADVERSE EFFECTS OF ANTICANCER DRUGS IN VARIOUS GYNAECOLOGICAL CANCER PATIENTS

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ABSTRACT

Objective: The aim was to determine the prevalence, clinical presentation, treatment pattern, outcomes and adverse drug reactions of the treatment regimen in gynecological cancer patients.

Methods: This is a prospective observational study conducted at St. Ann's Cancer Hospital, Warangal, Telangana State, from January 2014 to September 2014. 100 patients of gynecological cancer admitted in the hospital were divided into three groups, i.e. breast, cervical and ovarian cancer. Patients receiving chemotherapy (CT) were interviewed for information on type of adverse effects (AE) and the other pertinent information such as demographics, diagnosis, treatment pattern, drugs used to manage the AE were collected from the patient's medical records. The data were categorized based on the type of cancers and AE of therapy.

Results: A total of 50 patients were with breast cancer, 40 patients were with cervical cancer and 10 patients were with ovarian cancer. Among breast cancer patients, 24 patients (48%) belonged to a clinical sub group, 18 patients (45%) belonged to the early subgroup in cervical cancer and 5 patients (50%) belonged to the advanced subgroup in ovarian cancer. Most of the patients with breast cancer were reported with Stage IIIa (13 members, i.e. 26%), Stage I (13 members, i.e. 32.5%) in case of cervical cancer, Stage IIa (30%) and Stage IV (30%) in case of ovarian cancer. Surgery, followed by CT and radiotherapy (RT) was preferred in all cancer patients studied, i.e. 78%, 67.5%, 80% of breast, cervical and ovarian cancers respectively. 78% of patients with breast cancer, 67.5% of patients with cervical cancer and 80% of patients with ovarian cancer have shown complete response respectively. Hair loss/alopecia is the most common AE seen in 98 patients, followed by nausea and vomiting in 72 patients, nail pigmentation in 46 patients, pain in abdomen in 44 patients, loss of appetite in 31 patients, constipation in 29 patients, diarrhea in 27 patients, rash/dermatitis in 19 patients and headache in 13 patients.

Conclusion: Breast cancer was found to be predominant. Most of the patients in gynecological cancer patients were found to be in the clinical stage group and an advanced stage group indicating lack of awareness about various cancers. Combination therapy (CT, RT and surgery) is said to have a major effect on cancer patients, which resulted in improved quality of life and symptoms. All patients receiving cytotoxic drugs suffer one or more AE. The prevalence of AE was considerably high in spite of the using existing premedications.

Keywords: Gynecological cancer, Tumor, Nodal, Metastasis staging, Combination therapy, Adverse effects

INTRODUCTION

Cancer has become a vital public health problem with over 800,000 new cases occurring per annum in India. It is assessed that there are nearly 2.5 million cases within the country with nearly 400,000 deaths occurring because of cancer [1]. Cancers of the female reproductive system and breast features a high incidence amongst Indian women. Cancer registries have also highlighted that 70% of cancers in females occur within the people of 35-64 years, which these cancers exercise an adverse influence on the productive role of women in our society [2]. In step with the National Cancer Registry Program recent report for the 2008, the load of breast and cervical cancers together was 23.6-38.7% of total cancers in North Eastern states, whereas in all other states these 2 cancers contributed 35.2-57.7% of the overall cancers [3].

Cancers of the breast, cervical and ovary are the most significant hormone-dependent cancers in women [4] and Indian women generally present late at advanced stages of gynecological cancer when very little or no profit will be derived from any sort of medical care [5]. A woman's reproductive history plays a vital role in the risk of these cancers [4]. One study reported cancer incidence of breast, cervix, corpus uteri and ovary in India for 16-22 year period up to the year 2003 [6]. A recent study reported breast, cervix and cervical cancer incidence for urban center town for a 30 year period from 1976 to 2005 [7]. Recent world

cancer statistics indicates that the incidence of gynecological cancer is rising, and the increase is also happening at a quicker rate in the population of the developing countries that until now enjoyed the low incidence of the disease. This prevailing situation supported by recent information suggests that health behavior could also be influenced by the level of awareness regarding gynecological cancer [5]. Summary of update on trends in risks of leading cancers is very important for designing cancer management activities and policy choices [3].

Most of the India's population stays in rural areas and also the proportion of rural women is high. Rural women's health and her access to the health facility are further compromised because of socio-cultural, economical, and environmental factors [8]. Over 70% patients report for diagnostic and treatment services at a complicated stage of disease, leading to poor survival and high mortality rates [2]. The presently available evidence from previous studies suggests that a shift towards the early stages of the disease could be achieved by health education and improved awareness among the people [9].

Chemotherapy (CT) is used as a part of a multimodal approach to the treatment of the many tumors [10]. Several adverse effects (AE) of anticancer drugs are an extension of their therapeutic action, which is not only selective for malignant cells, however in addition, affects all dividing cells [11]. Cancer CT drugs fairly often show adverse drug

reactions (ADRs). Nausea, vomiting, myelosuppression, mucositis are quite common ADRs as a result of cancer therapy [12]. Compromising dose intensity of anti-neoplastic therapy by delaying or reducing doses will compromise outcomes of therapeutic aid. The dosage regimen and also the administration of the drug will greatly have an effect on their efficacy and toxicity [13].

Need of the study

There's a scarcity of knowledge relating to the incidence, prevalence, safety profile of cancer therapy in gynecological cancer patients in and around Warangal zone, Telangana region. The necessity of our study was to assess the incidence and treatment outcomes in all gynecological cancer patients. The objective of our study was to work out on the prevalence, clinical presentation, treatment pattern, the response of the treatment and pattern of adverse drug reactions occurring in gynecological cancer patients in a tertiary care hospital of Warangal zone, Telangana region.

METHODS

This was a prospective study conducted at St. Ann's General and Cancer Hospital, a tertiary care hospital set up, Hanamkonda, Telangana, India for a period of 9 months from January 2014 to September 2014. Patients visiting the cancer hospital were screened clinically and diagnostically for gynecological cancer and also patients with a history of gynecological cancer were also recruited over a period.

Inclusion criteria

Persons who came to the cancer clinic with a history of pain, blood discharge, and inflammation of breast/cervix/vagina were recruited. Histological types of various types of gynecological cancer with adequate organ function and strictly diagnosed as gynecological cancer were only recruited. Written consent was taken from people concerned within the study.

Exclusion criteria

Patients with uncontrolled infections, concurrent severe medical problems unrelated to the malignancy, history of allergic reactions to compounds chemically related to cobalt, pregnant or lactating, psychic problems like altered mental status, schizophrenia were excluded from the study.

Data needed for our study was principally collected from patients, patient's care takers, patient profile forms and laboratory information. Once the patient was known symptomatic for specific gynecological cancer, clinical analysis (dividing patients into groups based on disease progression, i.e. early, advanced and clinical subgroups) and tumor, nodal, metastasis (TNM) staging of the patients was also noted. Treatment given in patients was evaluated, i.e. whether the patient was on any therapy regimen/whether undergoing any surgery/ on combination of therapy and surgery. Adverse drug reactions, hematological toxicities and non-hematological toxicities of the treatment were noted in recruited patients. The response study was conducted on patients to assess the response of the therapy on the basis of Response analysis Criteria in Solid Tumors (RECIST) criteria.

Primary efficacy parameter

Total lesion space was considered as the primary efficacy parameter in our study. Patients who received complete cycles of chemo and radiotherapy (RT) were evaluated for response. The response study was conducted on all patients recruited. This was performed by observing CT-scan reports before and at the end of the therapy for total lesion space. The response was categorized according to the RECIST criteria [14].

RECIST criteria

1. Complete response = Disappearance of all target lesions. Some pathological lymph nodes (whether target or non-target) must have reduction in short axis to <10 mm.
2. Partial response (PR) = At least a 30% decrease in the sum of diameters of target lesions, taking as reference the baseline sum diameters.

3. Progressive disease (PD) = At least a 20% increase in the sum of diameters of target lesions, taking as reference the smallest sum on study (this includes the baseline sum if that is the smallest on study)
4. Stable disease (SD) = neither sufficient shrinkage to qualify for PR nor sufficient increase to qualify for PD, taking as reference the smallest sum diameters while on study.

The non-hematological toxicities were conducted on all gynecological cancer patients recruited. The toxicity included nausea/vomiting, alopecia, dermatitis associated with radiation, diarrhea, etc. was asked to the patient during and after every cycle of the treatment. Toxicities were graded according to the Common Terminology Criteria for Adverse Events v3 (CTCAE version3, NCI) [15]. (Table 1)

RESULTS

In this study, 100 gynecological cancer patients were recruited in the study during a period of 9 months. Of 100 cancer patients, 50 were breast cancer patients, 40 were cervical and 10 were ovarian cancer patients as shown in Table 2. Out of 50 patients in breast cancer, 17 patients reported as having age in between 30 and 40 years, 19 patients were in between 41 and 50 years (highest incidence-38%), 8 patients were in between 51 and 60 years and 6 patients were in between 61 and 80 years. In case of cervical cancer, 12 patients were in between 30 and 40 years age group, 10 patients were in between 41 and 50 years, 14 patients were in the range of 51-60 years (highest incidence 35%) and 4 patients were in between 61 and 80 years. In case of ovarian cancer, 2 patients were in between 30 and 40 years, 3 patients with a range of 51-60 years and 5 patients were in the range of 61-80 years (highest incidence 50%) as shown in Table 3 and Fig. 1.

Menopausal state

Among breast cancer patients, 33 patients were in premenopausal (highest incidence) stage, and 17 patients were postmenopausal. Among cervical cancer patients, 22 patients were premenopausal (highest incidence) and 18 patients were postmenopausal and in ovarian cancer patients, most of the patients (8 patients) were post-menopausal (highest incidence 80%) and 2 patients were premenopausal as shown in Table 4.

Disease progression

Table 5 and Fig. 2 show that among breast cancer patients, 2 patients belonged to an early subgroup, 24 patients belonged to clinical subgroup (highest incidence, i.e. 48%) and 4 patients belong to advanced subgroup. Among cervical cancer patients, 18 patients belonged to early subgroup (highest incidence, i.e. 45%), 11 patients and 1 patient belonged to clinical and advanced subgroups respectively. Among ovarian cancer patients, 5 patients belonged to clinical subgroup and 5 patients belonged to advanced subgroup.

TNM staging

Distribution of breast, cervical and ovarian cancer patients based on TNM staging were shown in Table 6. Most of the breast cancer patients were reported with Stage IIB (7 members, i.e. 14%) and with Stage IIIA (13 members, i.e. 26%). In the case of cervical cancer maximum number of patients was reported with Stage I (13 members, i.e. 32.5%) and Stage IIB (9 members, i.e. 22.5%). In the case of ovarian cancer, patients with Stage IIA (30%) and Stage IV (30%) were of higher incidence rather than other stages.

Histopathological features

Distribution of histological features in various gynecological cancer patients is shown in Table 7, Figs. 3-5. Among breast cancer patients, infiltrating ductal cell carcinoma (IDCC) was the most prominent histological feature seen in 58% of the patients, whereas in cervical cancer patients, squamous cell carcinoma (SCC) and well differentiated invasive SCC (WDISCC) with secondary deposits had equal incidence rates of 35%. In ovarian cancer patients, well differentiated papillary adenocarcinoma (WDPAC) was of higher incidence in 60% of the patients
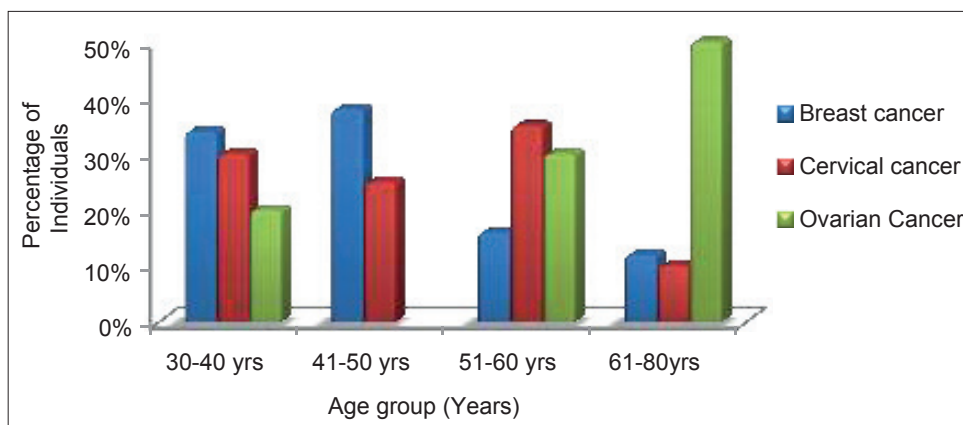
Fig. 1: Graph showing percentage of individuals with gynecological cancers in different age groups
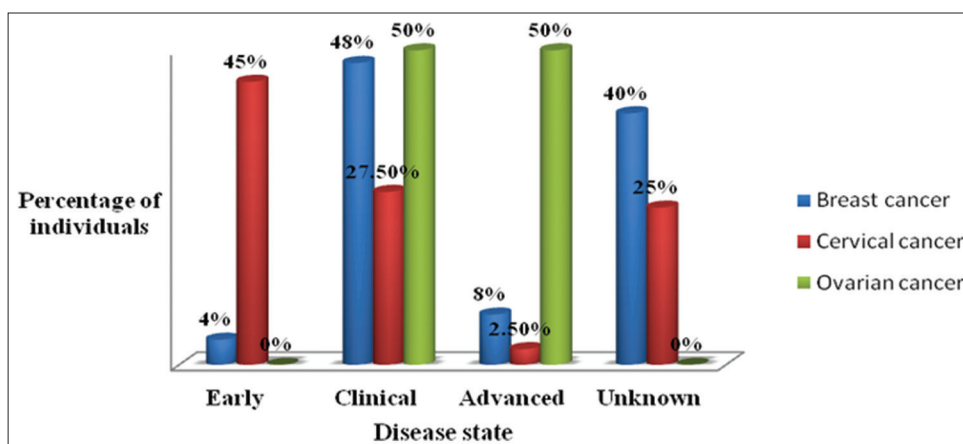

Fig. 2: Graph showing percentage of gynecological cancer patients in different diseased states

Table 1: Non-hematological toxicity grades according to CTCAE version 3, NCI criteria

Adverse event	Grade I	Grade II	Grade III	Grade IV	Grade V
Nausea/vomiting	1 episode in 24 hrs	2-5 episodes in 24 hrs	≥6 episodes in 24 hrs	Life threatening consequences	Death
Hair loss/alopecia (scalp or body)	Thinning or patchy	Complete	-	-	-
Rash/dermatitis	Faint erythema or dry desquamation	Moderate to brisk erythema; patchy moist desquamation, mostly confined to skin folds and moderate edema	Moist desquamation other than skin folds and Bleeding induced by minor trauma or abrasion	Skin necrosis or ulceration of full thickness dermis; spontaneous bleeding from involved site	Death
Diarrhea	Increase of <4 stools per day over baseline	Increase of 4-6 stools per day over baseline	Increase of ≥7 stools per day over baseline; incontinence	Life-threatening consequences (e.g., hemodynamic collapse)	Death

CTCAE: Common Terminology Criteria for Adverse Events

Table 2: Distribution of patients with gynecological cancers

Type of cancer	No. of individuals (%)
Breast cancer	50 (50)
Cervical cancer	40 (40)
Ovarian cancer	10 (10)

and found to be greater than WDISCC with secondary deposits seen in 40% of the patients.

Treatment patterns

Surgery followed by CT and RT is the most preferred treatment for all the three types' cancer patients, i.e. 78%, 67.5%, 80% of breast, cervical and ovarian cancers respectively as shown in Table 8.

Table 3: Age wise distribution in breast, cervical and ovarian cancer patients

Age (years)	Breast cancer (%)	Cervical cancer (%)	Ovarian cancer (%)
30-40	17 (34)	12 (30)	02 (20)
41-50	19 (38	10 (25)	00
51-60	08 (16)	14 (35)	03 (30)
61-80	06 (12)	04 (10)	05 (50)
Total no. of patients	50	40	10

RECIST criteria

Among total gynecological cancer patients studied, 78% of patients with breast cancer, 67.5% of patients with cervical cancer and 80% of
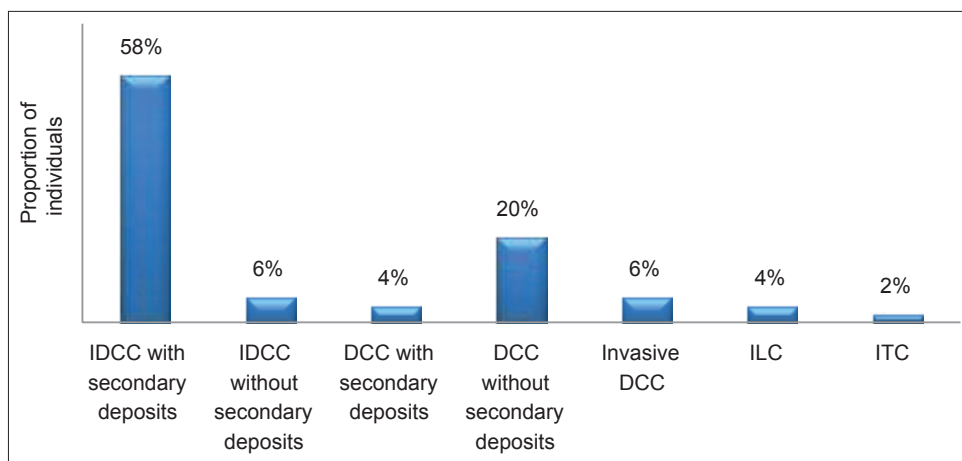
Fig. 3: Graph showing patients with different histo-pathological features in breast cancer
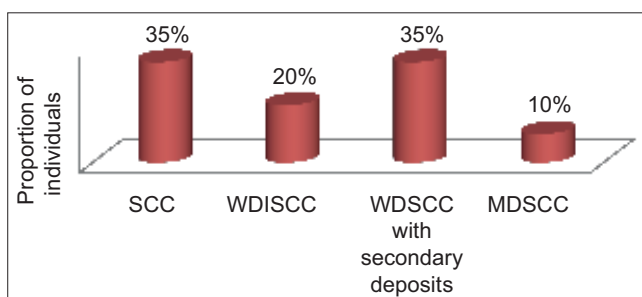

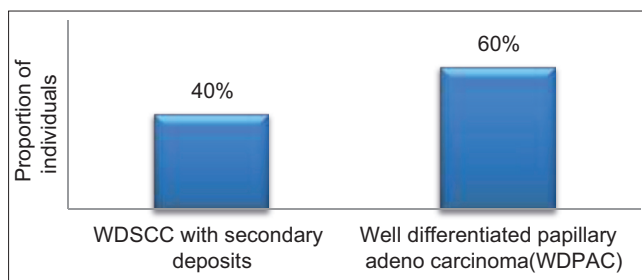**Fig. 4: Graph showing patients with different histo-pathological features in cervical cancer**

Fig. 5: Graph showing patients with different histo-pathological features in ovarian cancer

Table 4: Distribution of pre and post-menopausal patients in all Gynecological cancers

Menopause	Breast cancer patients (%)	Cervical cancer patients (%)	Ovarian cancer patients (%)
Before	33 (66)	22 (55)	02 (20)
After	17 (44)	18 (45)	08 (80)

Table 5: Distribution of breast, cervical and ovarian among early, clinical and advanced stages of cancer

Type of cancer	Early (%)	Clinical (%)	Advanced (%)	Unknown (%)
Breast	02 (4)	24 (48)	04 (8)	20 (40)
Cervical	18 (45)	11 (27.5)	01 (2.5)	10 (25)
Ovarian	0	05 (50)	05 (50)	0

Table 6: Distribution of breast, cervical and ovarian cancer patients based on TNM staging

Stage	Breast cancer patients (%)	Cervical cancer patients (%)	Ovarian cancer patients (%)
I	2 (4)	13 (32.5)	0
II A	4 (8)	5 (12.5)	1 (10)
II B	7 (14)	9 (22.5)	3 (30)
III C	13 (26)	2 (5)	1 (10)
III B	3 (6)	1 (2.5)	2 (20)
IV	1 (2)	0	3 (30)
Unknown	20 (40)	10 (25)	0

TNM: Tumor, nodal, metastasis

Table 7: Inter-observation of histo-pathological features in various gynecological patients

Type	Breast cancer (%)	Cervical cancer (%)	Ovarian cancer (%)
SCC	-	14 (35)	-
WDSCC	-	08 (20)	-
WDISCC with secondary deposits	-	14 (35)	04 (40)
MDSCC	-	04 (10)	-
WDPAC	-	-	06 (60)
IDCC with secondary deposits	29 (58)	-	-
IDCC	03 (6)	-	-
DCC	10 (20)	-	-
DCC with secondary deposits	02 (4)	-	-
Invasive DCC	03 (6)	-	-
Infiltrating tubular carcinoma	02 (4)	-	-
Infiltrating lobular carcinoma	01 (2)	-	-

DCC: Ductal cell carcinoma, IDCC: Infiltrating ductal cell carcinoma, WDPAC: Well differentiated papillary adeno carcinoma, MDSCC: Moderately differentiated squamous cell carcinoma, WDSCC: Well differentiated squamous cell carcinoma, SCC: Squamous cell carcinoma

patients with ovarian cancer patients have shown complete response respectively as shown in Table 9.

Adverse events

Hair loss/alopecia is the most common AE seen in 98 patients, followed by nausea and vomiting in 72 patients, nail pigmentation in 46 patients, pain in abdomen in 44 patients, loss of appetite in 31 patients, constipation in 29 patients, diarrhea in 27 patients rash/dermatitis in 19 patients and

head ache in 13 patients. Data about AE and grading is shown in Table 10, Fig. 6. AE without grading is shown in Table 11 and Fig. 7.

Hematological toxicities

Treatment for cancer also resulted in hematological toxicities like anemia seen in 45 patients, followed by leucopenia in 23 patients, neutropenia in 7 patients and thrombocytopenia in 3 patients. Data is shown in Table 12.

Table 8: Treatment patterns in all gynecological cancer patients

Type of treatment	Breast cancer patients (%)	Cervical cancer patients (%)	Ovarian cancer patients (%)
CT	-	-	-
Surgery+CT+RT	39 (78)	27 (67.5)	8 (80)
Surgery+CT	11 (22)	-	-
CT+RT		13 (32.5)	2 (20)

RT: Radiotherapy, CT: Chemotherapy

Table 9: RECIST for breast, cervical and ovarian cancers

Response to treatment	Breast cancer patients (%)	Cervical cancer patients (%)	Ovarian cancer patients (%)
Complete response	39 (78)	27 (67.5)	8 (80)
Partial response	11 (22)	13 (32.5)	2 (20)
Progressive disease	-	-	-
Stable disease	-	-	-

RECIST: Response Evaluation Criteria in Solid Tumors

DISCUSSION

The present study was conducted in the oncology department of cancer hospital to explore clinical evaluation, treatment outcomes and adverse reactions in various gynecological cancers patients, i.e. breast cancer, cervical cancer and ovarian cancer. In the present study, it was observed that a predominant number of patients visited the cancer hospital were of breast cancer (50%), followed by cervical cancer (40%) and ovarian cancer (10%). Similar order of prevalence were reported by Poddar S, *et al.*, [16] i.e. breast (40%), cervical (11.4%), ovarian (8.6%), as the most prevalent cancers in females. A study conducted by Asthana *et al.*, [17] found that breast cancer patients were 31.4% and cervical cancer patients were 18.58% in Chennai population.

Table 10: Grading of adverse events caused by cancer treatment

Adverse event	Grade I	Grade II	Grade III
Nausea/vomiting	10 (13.88)	42 (58.33)	20 (27.77)
Hair loss/alopecia	16 (16.32)	82 (83.67)	0
Rash/dermatitis	13 (68.42)	6 (31.57)	0
Diarrhea	7 (25.92)	7 (25.92)	13 (48.14)

Table 11: Other adverse events of cancer treatment

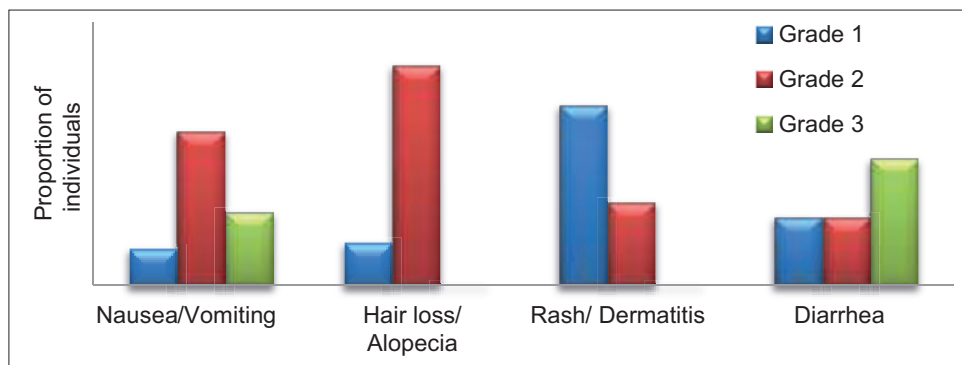| Adverse event	Number of individuals (%)
Constipation	29 (29)
Loss of appetite	31 (31)
Nail pigmentation	46 (46)
Headache	13 (13)
Pain in abdomen	44 (44)

Fig. 6: Graph showing percentage of adverse events (with grades) in all patients recruited
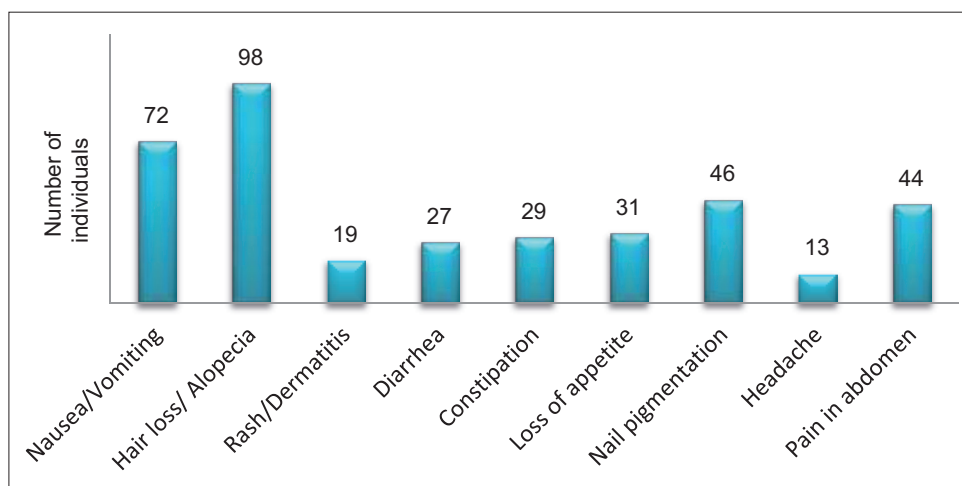

Fig. 7: Bar graph showing no. of patients with adverse effects

Table 12: Various hematological toxicities in cancer patients due to treatment followed

Adverse event	Number of individuals
Anemia	45 (45)
Leucopenia	23 (23)
Neutropenia	55 (55)
Thrombocytopenia	3 (3)

Most of the gynecological cancer patients in our study were found to be above 40 years of age. In ovarian cancer patients, most of the patients were in the age group 61-80 years (50%), in cervical cancer 51-60 years (35%) and in breast cancer patients 41-50 years age group (38%). The mean age of breast cancer patients was 46.26 years. Similar findings were noted in the study conducted by Ramchandra Kamath *et al.,* [18] who reported that the average age of the breast cancer cases was 45.64 years (SD 9.336) and also similar findings were noted in the study conducted by Meshram *et al.,* [19], which reported most of the breast cancer patients between 40 and 49 years of age with the average age of 48.4 years for cases. The mean age of cervical cancer patients in our study found to be 48.02 years. In India, the peak age for cervical cancer incidence is 45-54 years, which is similar to the rest of South Asia [20]. The mean age of ovarian cancer patients was 55.5 years in our study, which is similar to the study conducted by N Srinivasa Murthy *et al.,* [21] where they found that the mean age of occurrence of ovarian cancer varied between 52.2 and 59.5 years in the various registries. Most of the patients were in the premenopausal state than in the postmenopausal state, which was similar to study conducted by I dos Santos Silva *et al.,* [4]. Early age marriage, early and multiple childbirths, child breast feeding for an extensive period, prolonged use of oral contraceptives is the norm in most Indian societies. However, the urban, educated category is moving distant from this trend, with late-age child births and small or no breastfeeding due to changing social values and also the demands of jobs for working women. These changes are partially liable for the increasing trend of gynecological cancer incidence in premenopausal stage in Indian women [22].

Disease progression also varied in our study in different gynecological cancer patients. A predominant number of breast cancer patients were found to be in clinical stage group of cancer while in cervical cancer early stage group patients were predominant and in ovarian cancer clinical and advanced subgroups were found to be predominant. Most of the patients reported in our study were in advanced stages of disease. 26% of the patients with breast cancer were in stage III-A similar to reports of Saxena S, *et al.,* [23] which reported that the majority of patients present with Stage III-B (35%) and III-A (27%). 32.5% of the patients with cervical cancer were in Stage I and 22.5% of patients were in IIb similar to study conducted by Guangwen *et al.,* [24] which reported 25% I-B and II-B. 30% of ovarian cancer patients were in II-B and IV stages of cancer respectively. These findings slightly differed from the study conducted by Chan, *et al.,* [25] where 35.9% of patients had Stage III, and 33.7% had Stage IV disease. Patients also had different clinical pathology of gynecological cancers in our study. Many number of breast cancer patients (58%) had IDCC with secondary deposits, which was in concordance with a survey of the American cancer society [26] and Sandhu *et al.,* [27] study. Cervical cancer patients had SCC (35%) and also well differentiated SCC with secondary deposits (35%) and ovarian cancer patients were with WDPAC (60%).

All the results from analyzing the histological grades shown in the previous reports and our study found that higher the degree of histological differentiation was, the higher 5-year survival rate would be [24]. After analyzing the age, tumor size, staging, histological grades and pathological classifications of gynecologic cancers, we found that clinical stage and pathological classification were independent prognostic factors. It meant that the higher the clinical stage, the poorer the prognosis would be.

Predominant therapy given in patients recruited in our study was combination therapy (CT, radiation and surgery). 78% of the breast cancer patients were treated with combination therapy similar to findings of Kuraparthy, *et al.,* [28], 67.5% of the cervical cancer patients were given combination therapy similar to study by Guangwen, *et al.,* [24] and 80% of the ovarian cancer patients were treated with combination therapy similar to reports of Basu, *et al.,* [29]. This pattern of therapy, i.e. combination therapy showed complete response in patients among all stages of the disease than with patients who were given any one form or two forms of treatment, which is on par with the study of Scheele, *et al.,* [30]. It has been reported that the survival of patients with cancer has improved in recent years in many countries, attributable to an earlier stage at diagnosis and probably attributable to the introduction of combination CT with cisplatin [31].

The present study also founded several adverse reactions after administration of treatment. In our study, 86.53% of the patients receiving anti-neoplastic drugs developed ADR which was in concordance with a study conducted by Prasad, *et al* [32]. Hair loss was found to be a predominant adverse event in 98% of the patients, and most of them were under grade II (83.67%). Nausea and vomiting were accounted for 72% of the patients, and most of the patients were under Grade II (58.3%). In other studies also these were found to be the commonest ADRs (16). The most common mechanism of CT induced nausea and vomiting is through activation of chemoreceptor trigger zone [33]. Since vomiting is a common problem associated with cancer CT, strategies should be made to prevent and manage the vomiting in patients undergoing cancer CT. Dermatitis was found to be in 19% of the patients, and many showed Grade II rash/dermatitis (31.57%). Diarrhea was found to be in 27% of the patients with 48% showing Grade III Diarrhea. Other AE found in our study were nail pigmentation (46%), pain in abdomen (44%), loss of appetite (31%), constipation (29%) and headache (13%) patients. Pattern of adverse events seen in our study were in concordance with findings of Kirthi, *et al.,* [17]. Treatment for cancer also resulted in hematological toxicities like neutropenia (55%), anemia (45%), leucopenia (23%), and thrombocytopenia (3%). In other study by Mallik, *et al.,* neutropenia was found to be most common ADR [34]. While destroying cancer cells, chemo therapy may also harm rapidly dividing cells of bone marrow leading to myelo-suppression thus affecting white blood cells, platelets and red blood cells. Anemia owing to CT evoked myelosuppression typically happens 2-3 weeks after the administration of therapy and may be managed by blood transfusion and erythropoietin. Cisplatin, cyclophosphamide, 5-fluoro uracil, paclitaxel and adriamycin were commonly used for the treatment of cancer and found to be the vital drugs to cause ADRs in our study.

CONCLUSION

The present study helped us to identify the cases with predominant type of gynecological cancers and to assess the stage of diagnosis in such patients in the Warangal Zone of Telangana region where they will be benefitted by an acceptable dose of medicine management as the primary modality of treatment.

Breast cancer was found to be the predominant type among all types of gynecological cancers studied. The predominant age group was between 41 and 50 years in breast cancer, 51-60 years in cervical cancer and 61-80 years with ovarian cancer. Most of the patients in gynecological cancer patients were found to be in the clinical stage group and an advanced stage group indicating lack of awareness about various cancers. The present study also concluded that combination therapy (CT, RT and surgery) said to have a major effect on cancer patients, which resulted in improved quality of life and symptoms. All patients receiving cytotoxic drugs suffer one or additional AE. Nausea, vomiting, decreased appetite; alopecia, anemia, nail discoloration and anorexia were the most frequently reported AE. Pre-medications commonly used were ondansetron, dexamethasone, aprepitant and proton pump inhibitors on an individual basis or together to forestall ADRs. The

prevalence of AEs was considerable high in spite of using existing pre-medications. Attempts to reduce the AEs related to the anticancer drugs ought to be targeted on increasing awareness about AEs through educational intervention and the development of preventive measures for improved quality of life and also additional findings in our study stress the necessity for early and acceptable management of cancer to scale back mortality of patients.

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