

## Original Research Article

**Pattern of Utilization of Anticancer Medications at a Tertiary Care Hospital in South-South Nigeria**Onwusah DO<sup>\*1</sup>, Korubo GJ<sup>1</sup><sup>1</sup>Department of Clinical Pharmacy and Management, Faculty of Pharmaceutical Sciences  
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**Abstract:** Globally, cancer constitutes a major cause of morbidity and mortality with increasing incidence and prevalence. Drug utilization studies promote rational use of drugs. This retrospective, observational and descriptive study assessed the prescribing pattern of anticancer medications in a tertiary care hospital in South-South Nigeria. Ethical approval to conduct the study was obtained from the hospital ethics committee before data collection. The hospital medical records of January 2005 to December 2014, of 782 adult cancer patients aged 18 years and above were consecutively selected. Altogether, 30 types of cancer were observed. The results also indicated that cancer was more common in females 456 (58.3%) than in males 326 (41.7%). Overall, patients between 61 and 70 years were affected more by cancer, while breast cancer affected more patients between 41 to 50 years. Overall 33 anticancer drugs were prescribed at a frequency of 1548 (100.0%). Anticancer drugs were commonly prescribed in combination. Overall, Cyclophosphamide + Epirubicin + 5FU was the most frequently prescribed combination regimen 99 (38.1%) for breast cancer patients, while overall, Flutamide was the most frequently prescribed single agent regimen 154 (76.2%) for patients with prostate cancer. Moreover, the most commonly prescribed anticancer drug was cyclophosphamide 214 (13.82%). This study has thus provided information on the prescribing pattern of anticancer medications at a tertiary health facility in South-South Nigeria, and has indicated the need for periodic prescription audit and review in order to promote rational drug prescribing.

**Keywords:** Anticancer Medications, Cancer, Chemotherapy, Prescribing Pattern, South-South Nigeria.

**INTRODUCTION**

Cancer is a major cause of illness and death worldwide. An estimated 14.1 million new cancer cases and 8.2 million deaths occurred in 2012, compared to the estimated number in 2008 which had 12.7 million new cases and 7.6 million deaths respectively with a global cancer prevalence of about 32.5 million people who were still alive in 2012 [1, 2]. It represents the second most common cause of mortality constituting about 12% of all deaths after cardiovascular disease, killing more people than HIV/AIDS, Tuberculosis and Malaria. It constitutes an enormous burden particularly in the developing countries. However, cancers of the lung, female breast, colorectal and stomach made up over 40% of all cases diagnosed worldwide in 2012 [3-4].

Lung cancer was the most common cancer (16.7% of all new cases) in men while breast cancer was the most common cancer diagnosed in women (25.2% of all new cases in women). Over 50% of all

cancer deaths each year are due to lung, stomach, liver, colorectal and female breast cancers [5].

The most common cancers reported in Nigeria include breast, cervix, prostate, colorectal, liver cancers, and Non-Hodgkin's Lymphoma. The incidence of cancer in a developing country such as Nigeria continues to increase and female cancers are leading. This increase is predicated on lifestyle changes due to westernization and poor awareness of the risk factors for cancer [6]. In Nigerian men, the most common cancers include cancers of the prostate, liver and lymphomas; while in Nigerian women, cancers of the cervix and breasts are commonest with minimal regional variation [7-9].

The main treatment modalities used in the management of cancer include surgery, radiation therapy and chemotherapy. Other types of cancer treatment options include targeted therapies, differentiating agents, hormonal therapy and immunotherapy and these other forms of chemotherapy.

The relative effectiveness of these treatment modalities depend on the type of tumor and the stage of its development. Chemotherapy may be used alone or as an adjunct to other forms of therapy. The ideal chemotherapeutic drug would target and destroy only cancer cells. However, only a few such ideal drugs exist [10-12]. In recent years, chemotherapy has gained a foremost position in treatment recommendations; therefore, it has become a necessary part of the management of cancer [13].

Supportive care in cancer management involves the treatment of signs and symptoms of cancer or the management of adverse effects associated with cancer chemotherapy. The adverse effects associated with cancer chemotherapy may be temporary, uncomfortable and/or life threatening leading to dose reduction and treatment delays with even a switch to other therapy [14]; hence, the need for supportive care drugs.

Nevertheless, in recent years there have been significant changes in the utilization pattern of anticancer drugs which includes the prescribing pattern of anticancer medications and this has been attributed to a better understanding of the pathophysiology of cancer, the introduction of newer drugs, significant variation in individual response to medications, availability of different regimens and the intolerability of combination regimens. This has led to the necessity of observing and evaluating cancer chemotherapy [15].

As the incidence and prevalence of certain cancers are increasing in Nigeria [16-17], the need to assess the prescribing pattern of anticancer medications becomes imperative, particularly in South-South Nigeria, where there is paucity of data on anticancer medication prescribing. This study therefore aimed to assess anticancer medications prescribing among adult cancer patients who received treatment at the Hematology/Oncology clinics of the University of Port Harcourt Teaching Hospital (UPTH) in Nigeria.

## MATERIALS AND METHODS

### STUDY DESIGN AND SETTING

This was an observational, cross-sectional retrospective review of the medical records of adult cancer patients managed at the Hematology/Oncology clinics of the University Of Port Harcourt Teaching

Hospital (UPTH), a tertiary care hospital in Port Harcourt, Rivers State, South-South, Nigeria.

### STUDY SAMPLE

The study sample were 782 adult cancer patients, aged 18 years and above who presented over a ten year period of January 2005 to December 2014, and received treatment for different types of cancers at the hospital.

### ETHICAL CONSIDERATION

Ethical approval to conduct this study was granted by the University of Port Harcourt Teaching Hospital Ethical committee and the Research Ethics Group of the Centre for Medical Research and Training, College of Health Sciences, University of Port Harcourt, Port Harcourt, Nigeria.

The medical records of adult cancer patients aged 18years and above, who received chemotherapy at the Hematology/Oncology clinics for treatment of any type of cancer, and met the inclusion criteria were included in this study.

### DATA COLLECTION

The medical records of eligible adult cancer patients who received chemotherapy at the hematology/oncology clinics over a ten-year period of January 2005 to December 2014 were included in this study. The medical records of 782 patients were consecutively selected. The study was conducted from November 2015 to February 2016 after ethical approval to conduct the study was obtained. A structured proforma was used for data collection and the patients' medical records were reviewed to obtain necessary patient information. Information retrieved included cancer types and chemotherapy regimens prescribed prescription patterns of chemotherapy drugs and co-prescribed medications.

### DATA ANALYSIS

Data collected were analyzed using the Statistical Package for the Social Sciences (SPSS) version 20 (IBM Corporation, Chicago, IL, USA) for descriptive statistics such as frequencies and percentages.

## RESULTS

### Gender-wise distribution of patients

**Table 1: Demographic profile of patients, Gender-wise distribution of patients**

Gender	Frequency	Percentage (%)
Males	326	41.7
Females	456	58.3
<b>TOTAL</b>	<b>782</b>	<b>100</b>

Age-wise distribution of patients

Age group (years)	18-20	21-30	31-40	41-50	51-60	61-70	71-80	> 80	Total
Frequency	28	75	112	145	142	153	104	23	782
Percentage (%)	3.6	9.6	14.3	18.5	18.2	19.6	13.3	2.9	100

**Patients' gender and age**

A total of 782 adult cancer patients' medical records were reviewed and analyzed. Overall, the results showed that cancer was more common in females 456 (58.3%) than in males 326 (41.7%). The results also indicated that 3.6% of the patients in the age range of 18-20years, 9.6% were between 21-30years;

14.3% were in the age range of 31-40years; 18.5% were in the age range of 41-50years; 18.2% were in the age range of 51-60years; 19.6% were in the age range of 61-70years; 13.3% were between 71-80years while 2.9% were above 80years.

**Breast cancer**

**Table 2: Chemotherapy regimens prescribed by cancer type**

Paclitaxel + Epirubicin	62 (23.8%)
Cyclophosphamide + Adriamycin+ Paclitaxel	10 (3.8)
Cyclophosphamide + Adriamycin + 5-FU	32 (12.3%)
Cyclophosphamide + Epirubicin + 5-FU	99 (38.1%)
Cyclophosphamide + Paclitaxel	18 (6.9%)
Cyclophosphamide + Epirubicin	15 (5.8%)
Cyclophosphamide + Paclitaxel + 5-FU	9 (3.5%)
Cisplatin +Adriamycin	11 (4.2%)
Paclitaxel + Epirubicin+ 5-FU	4(1.5%)
<b>Breast cancer (n=260)</b>	

**Prostate cancer**

Flutamide	154 (76.2%)
Gemcitabine	6 (3.0%)
Oxaliplatin	14 (5.4%)
Bicalutamide	18 (9.0%)
Docetaxel +Prednisolone	10 (5.0%)
<b>Prostate cancer (n=202)</b>	

**Liver cancer**

Cisplatin + Oxaliplatin	34 (59.6%)
Gemcitabine + Oxaliplatin	23 (40.4%)
<b>Liver cancer (n=57)</b>	

**Cervical cancer**

Gemcitabine + Cisplatin	24 (51.1%)
Cisplatin + Paclitaxel	10 (21.3%)
Carboplatin + Paclitaxel	4 (8.5%)
Cisplatin + Ifosphamide	9 (19.1%)
<b>Cervical cancer (n=47)</b>	

**Ovarian cancer**

Gemcitabine + Cisplatin	6 (30.0%)
Cisplatin + Paclitaxel	14(70.0%)
<b>Ovarian cancer (n=20)</b>	

**Genital tract cancer**

Cisplatin	4 (20.0%)
Cisplatin + Paclitaxel	9 (45.0%)
Methotrexate + Leucovorin	7 (35.0%)
<b>Genital tract cancer (n=20)</b>	

**Colon cancer**

Oxaliplatin + Leucovorin + 5-FU	14 ( 73.7%)
Oxaliplatin + 5-FU	5 ( 26.3%)
<b>Colon cancer (n= 19)</b>	

**Non-Hodgkin's Lymphoma**

Cyclophosphamide + Adriamycin + Vincristine + Prednisolone (CHOP) regimen	12 (80.0%)
Rituximab + CHOP regimen	3 (20.0%)
<b>Non-Hodgkins Lymphoma, NHL (n=15)</b>	

**Pancreatic cancer**

5-Fluorouracil (5-FU)	12 (85.7%)
Capecitabine	2(14.3%)
<b>Pancreatic cancer (n=14)</b>	

**Parotid cancer**

5- Fluorouracil (5-FU)	5(38.5%)
Cisplatin + Adriamycin	1(7.7%)
Cisplatin + Adriamycin + 5-Fluorouracil	7(53.8%)
<b>Parotid cancer (n=13)</b>	

**Hodgkins Lymphoma**

Adriamycin + Bleomycin + Vinblastine+ Dacarbazine	12 (100.0%)
<b>Hodgkins Lymphoma (n=12)</b>	

**Other cancers**

<b>Esophageal cancer:</b> 5-FU + Oxaliplatin	2 patients (100.0%)
<b>Testicular cancer:</b> Cisplatin	3patients (100.0%)
<b>Thyroid cancer:</b> Levothyroxine	1 patient (100.0%)
<b>Endometrial cancer:</b> Cisplatin + Adriamycin	6patients (100.0%)
<b>Bladder cancer:</b> Gemcitabine + Cisplatin	5 patients (100.0%)
<b>Gastric cancer:</b> 5-FU + Leucovorin Cyclophosphamide + Epirubicin + 5-FU Paclitaxel + 5-FU	11 patients 3 (27.3%) 5 (45.5%) 3(27.3%)
<b>Renal cancer:</b> Gemcitabine + 5-FU	5 patients (100.0%)
<b>Soft tissue sarcoma:</b> Adriamycin Ifosphamide	7patients 4(57.1%) 3(42.9%)

<b>Anal cancer:</b> Mitomycin + 5-FU	5 patients (100.0%)
<b>Myeloproliferative disease:</b> Hydroxyurea + Allopurinol	2 patients (100.0%)
<b>Lung cancer:</b> Carboplatin + Paclitaxel Cisplatin + Paclitaxel	7 patients 4 (57.1%) 3 (42.9%)
<b>Chronic Myeloid Leukemia:</b> Hydroxyurea + Allopurinol Imatinib (GLIVEC therapy)	10 patients 7 (70.0%) 3(30.0%)
<b>Lympho proliferative disease</b> Rituximab	7patients
<b>Hemangioma</b> Vincristine	3patients
<b>Pituitary cancer</b> Bromocriptine	1patient
<b>Chronic Lymphocytic Leukemia:</b> Chlorambucil + Prednisolone Cyclophosphamide + Vincristine + Prednisolone	4patients 1 3
<b>Melanoma of the skin</b> Lost to follow up	8patients (100.0%)
<b>Acute lymphocytic leukemia</b> Lost to follow up	7patients (100.0%)
<b>Multiple myeloma</b> Lost to follow up	9patients (100.0%)
<b>Total</b>	<b>103 patients</b>
<b>Other cancers = 103</b>	

Altogether, 30 different types of cancer were observed in this study.

#### Breast cancer

A total of 260 patients received treatment for breast cancer. The most frequently prescribed chemotherapy combination regimen for breast cancer patients in this study was Cyclophosphamide + Epirubicin + 5FU with a frequency of 99(38.1%), while the least prescribed chemotherapy combination regimen for patients with breast cancer was Paclitaxel + Epirubicin + 5FU, with a frequency of 4(1.5%).

#### Prostate cancer

Among 202 male patients treated for prostate cancer, the most frequently prescribed chemotherapy regimen in this study was Flutamide with a frequency of 154 (76.2%); while the least prescribed chemotherapy regimen for patients with prostate cancer was Gemcitabine, with a frequency of 6 (3.0%).

#### Liver cancer

A total of 57patients were treated for liver cancer. Majority of these patients, 34 (59.6%) were treated with chemotherapy combination regimen of Cisplatin + Oxaliplatin; while 23(40.4%) of the patients who had liver cancer received chemotherapy combination regimen of Gemcitabine + Oxaliplatin.

#### Cervical cancer

A total of 47patients received treatment cervical cancer. The most frequently prescribed chemotherapy combination regimen for patients with cervical cancer in this study was Gemcitabine + Cisplatin with a frequency of 24 (51.1%); while the least prescribed chemotherapy regimen for patients with cervical cancer was Carboplatin + Paclitaxel with a frequency of 4(8.5%).

#### Ovarian cancer

A total of 20patients were treated for ovarian cancer. Majority of these patients, 14 (70.0%) were treated with chemotherapy combination regimen of Gemcitabine + Cisplatin; while 6(30.0%) of these ovarian cancer patients received chemotherapy combination regimen of Cisplatin + Paclitaxel.

#### Genital tract cancer

Overall, 20patients were treated for genital tract cancer. The most frequently prescribed chemotherapy combination regimen for patients with genital tract cancer in this study was Cisplatin + Paclitaxel with a frequency of 9(45.0%); while the least prescribed chemotherapy regimen for patients with genital tract cancer was cisplatin with a frequency of 4(20.0%).

#### **Colon cancer**

A total of 19 patients were treated for colon cancer. Combination chemotherapy regimen of Oxaliplatin + Leucovorin + 5FU was administered to a majority 14 (73.7%) of these patients with colon cancer, while 5(26.3%) patients with colon cancer received Oxaliplatin + 5FU.

#### **Non-Hodgkin's Lymphoma**

In this study, 15 patients were treated for Non-Hodgkin's lymphoma. Of these, majority 12(80.0%) received Cyclophosphamide + Adriamycin + Vincristine + Prednisolone (CHOP) regimen and 3(20.0%) were treated with the CHOP regimen + Rituximab.

#### **Pancreatic cancer**

In this study, 14 patients were treated for pancreatic cancer. Majority of these patients 12 (85.7%) received 5FU as single chemotherapy regimen, while 2(14.3%) received Capecitabine single regimen.

#### **Parotid cancer**

A total of 13 patients received treatment for parotid cancer. The most frequently prescribed chemotherapy combination regimen for patients with parotid cancer in this study was Cisplatin + Adriamycin + 5FU with a frequency of 7(53.8%); while the least prescribed chemotherapy regimen for patients with parotid cancer was Cisplatin + Adriamycin with a frequency of 1(7.7%).

#### **Hodgkin's Lymphoma (HL)**

A total of 12 patients were treated for Hodgkin's lymphoma. All 12 patients (100%) patients were treated with the combination chemotherapy regimen of Adriamycin + Bleomycin + Vinblastine + Dacarbazine.

#### **Other cancers**

Additionally, one hundred and three (103) patients were treated for 19 other types of cancer as observed in this study. These other cancers included esophageal cancer, testicular cancer, thyroid cancer, endometrial cancer, bladder cancer, gastric cancer, renal cancer, soft tissue sarcoma, anal cancer, myeloproliferative disease, lung cancer, chronic myeloid leukemia, melanoma, acute lymphocytic leukemia, lymphoproliferative disease, hemangioma, multiple myeloma, pituitary cancer and chronic lymphocytic leukemia.

#### **Esophageal cancer**

Two patients presented with esophageal cancer and were treated with 5-FU + oxaliplatin regimen.

#### **Testicular cancer**

For testicular cancer, three patients presented for treatment and each patient received Cisplatin regimen.

#### **Thyroid cancer**

One patient had thyroid cancer and received levothyroxine regimen.

#### **Endometrial cancer**

Six patients who had endometrial cancer were each treated with Cisplatin + Adriamycin chemotherapy combination regimen.

#### **Bladder cancer**

For bladder cancer, 5 patients presented for treatment and each of them received Gemcitabine + Cisplatin regimen.

#### **Gastric cancer**

Eleven patients had gastric cancer, out of which 3 patients received 5FU + Leucovorin regimen, while 5 patients received Cyclophosphamide + Epirubicin + 5FU regimen, and the remaining 3 patients received Paclitaxel + 5FU regimen.

#### **Renal cancer**

For 5 patients who had renal cancer, they all received Gemcitabine + 5FU regimen.

#### **Soft Tissue Sarcoma**

Out of the seven patients who presented with soft tissue sarcoma, 4 patients received Adriamycin regimen while 3 patients received Ifosphamide regimen.

#### **Anal cancer**

Five patients had anal cancer, and they all received Mitomycin + 5FU as their chemotherapy combination regimen.

#### **Myeloproliferative disease**

For two patients who had myeloproliferative disease, Hydroxyurea + Allopurinol were administered for their treatment.

#### **Lung cancer**

However, seven patients were affected by lung cancer. Out of these, 4 patients with lung cancer received Carboplatin + Paclitaxel regimen while 3 patients received Cisplatin + Paclitaxel regimen.

#### **Chronic Lymphocytic Leukemia**

Four patients presented with Chronic Lymphocytic Leukemia. Of these patients, 1 patient received Chlorambucil + Prednisolone combination chemotherapy regimen, while three patients were

treated with Cyclophosphamide + Vincristine + Prednisolone chemotherapy combination regimen.

**Chronic Myeloid Leukemia**

Moreover, 10 patients were affected by chronic myeloid leukemia, seven of these patients received Hydroxyurea + Allopurinol regimen while 3 patients received Imatinib (GLIVEC therapy) regimen.

**Hemangioma**

Three patients were diagnosed of hemangioma and received Vincristine chemotherapy regimen.

**Lympho proliferative disease**

It was also observed that seven patients were diagnosed of lymphoproliferative disease and each patient was prescribed rituximab.

**Pituitary cancer**

One patient had pituitary cancer and received bromocriptine for treatment.

**Melanoma of the skin**

Eight patients were diagnosed of melanoma of the skin and none of them returned to the hospital for treatment.

**Acute lymphocytic leukemia**

Seven patients presented with acute lymphocytic leukemia and were also lost to follow up on treatment.

**Multiple myeloma**

Nine patients were diagnosed of multiple myeloma and all of these patients were lost to follow-up on treatment.

**TABLE 3: PATTERN OF ANTICANCER MEDICATIONS PRESCRIBING**

Among the 782 patients’ prescriptions reviewed from the patients’ medical records, 33 anticancer medications were used. Altogether, these anticancer drugs were prescribed at a frequency of 1548 (100.0%). Cyclophosphamide was the most commonly used anticancer drug 214 (13.82%), this is closely followed by 5-FU with a frequency of 210 (13.56%). The least prescribed anticancer medications were bromocriptine 1(0.06%), Chlorambucil 1(0.06), and levothyroxine 1(0.06%) respectively.

**TABLE 4: PATTERN OF UTILIZATION OF CO-PRESCRIBED MEDICATIONS**

Other drugs were co-prescribed for various reasons which include the management of adverse effects of cancer as well as adverse effects due to anticancer drugs. These drugs included anti-emetics 123(17.6%) for management of nausea and vomiting; analgesics 303(43.4%) for management of cancer pain; dietary supplements 181(26%); and other drugs 90 (13.0%) which were used for the management of co-morbid health conditions such as peptic ulcer disease (PUD), hypertension, diabetes mellitus and depression.

**Table 3: Patterns of anticancer medications prescribing**

Medications	Frequency of Prescriptions	Percentage
Paclitaxel	150	9.68
Epirubicin	185	11.95
Cyclophosphamide	214	13.82
Adriamycin	98	6.33
5-fluorouracil (5FU)	210	13.56
Cisplatin	154	10.00
Flutamide	154	10.00
Gemcitabine	69	4.45
Oxaliplatin	92	5.94
Bicalutamide	18	1.16
Docetaxel	10	0.65
Prednisolone	29	1.87
Carboplatin	8	0.52
Ifosphamide	12	0.76
Methotrexate	7	0.45
Mitomycin	5	0.32
Leucovorin	24	1.55
Vincristine	21	1.36
Rituximab	10	0.65
Capecitabine	2	0.13
Bleomycin	12	0.76

Vinblastine	12	0.76
Dacarbazine	12	0.76
Levothyroxine	1	0.06
Hydroxyurea	9	0.58
Allopurinol	9	0.58
Imatinib	3	0.19
Bromocriptine	1	0.06
Chlorambucil	1	0.06
Dexamethasone	8	0.52
Etoposide	8	0.52
<b>TOTAL</b>	<b>1548</b>	<b>100.0</b>

**Table 4: Pattern of utilization of Co-prescribed medications**

Medications	Frequency	Percentage (%)
Anti-emetics	123	17.6
Analgesics	303	43.4
Dietary supplements	181	26.0
Others	90	13.0
<b>TOTAL</b>	<b>697</b>	<b>100.0</b>

**DISCUSSION**

Cancer affects both patients and their families including patients’ caregivers both physically and psychologically [18]. Seven hundred and eighty two (782) eligible cancer patients’ medical records files were retrospectively studied. Overall, thirty types of cancer were observed, and 33 anticancer drugs were prescribed. This finding is similar to the study conducted in India in 2015 by Pentareddy *et al.*; [15], where 26 anticancer drugs were prescribed.

Overall, these anticancer medications were prescribed at a frequency of 1548, (100.0%) which is the total proportion of prescribed anticancer drugs in this study. However, this finding is higher than that of the study in 2013 by Khan *et al.*; [20] in Nepal, where the frequency of cytotoxic medications was 427.

Among these anticancer drugs, Cyclophosphamide was the most commonly prescribed anticancer drug at a frequency of 214 (13.82%). This finding is similar to the study in 2013 by Khan *et al.*; [3], where the most frequently prescribed anticancer drugs were the alkylating agents of which Cyclophosphamide had the highest frequency; however, it is not in line with another study where 5FU and Cisplatin were the most commonly prescribed [19].

Moreover, in this study, anticancer medications were frequently prescribed as combination regimen. This finding agrees with the study in India [15], and also with the study by Mayer and Janoff in 2007, where it was stated that combination chemotherapy can enhance treatment effectiveness across a spectrum of human diseases [20] including cancer. However, in this study, breast cancer was the most common cancer. This finding is in line with the

study by Poddar *et al.*; in 2009 [21], where majority of the patients were affected by breast cancer.

For treatment of breast cancer, the most commonly prescribed combination chemotherapy regimen was Cyclophosphamide + Epirubicin + 5-fluorouracil with a frequency of 99 (38.1%). This finding is not in line with the study carried out by Pentareddy *et al.*; [15] in 2015, where the most commonly prescribed chemotherapy regimen for the treatment of breast cancer was Adriamycin + Cyclophosphamide (4cycles) followed by Paclitaxel (4cycles).

Furthermore, other drugs were co-prescribed for supportive care of cancer and treatment of comorbid conditions. These included anti-emetics for treatment of associated nausea and vomiting due to cancer treatment by cancer chemotherapy; analgesics for cancer pain management, dietary supplements; and other drugs for co-morbid health conditions such as peptic ulcer disease, hypertension, diabetes mellitus and depression. In the study in 2014 by Dave *et al.*, [22], adjuvant drugs which included supportive drugs used to manage the adverse effects of anticancer drugs were also frequently prescribed.

**Limitations of the Study**

This study was a retrospective review of the hospital records on the drug utilization pattern among adult cancer patients over a ten-year period of January 2005 to December 2014. Moreover, based on information in some patient’s records, it was observed that some of them were lost to follow up, thus limiting the amount of information obtained. Moreover, there were incomplete or missing information with respect to prescribed chemotherapy since these patients did not

return to the hospital again for further treatment after their diagnoses.

## CONCLUSION

This study showed that cancer affected more females than males. Breast cancer was the most common cancer. Patients most affected by cancer were those between 61-70 years. However, the most frequently prescribed combination regimen was Cyclophosphamide + Epirubicin + 5FU for patients with breast cancer. The most frequently prescribed single agent drug was Flutamide for patients with prostate cancer, and cyclophosphamide was the most commonly prescribed drug overall. This study has therefore provided information on the prescribing pattern of anticancer medications at a tertiary health facility in South-South Nigeria during the study period. Consequently, there is need for a periodic prescription audit and review at the health facility level in order to promote rational drug prescribing. More studies on prescription pattern of anticancer drugs should be carried out in Nigeria due to paucity of data on research in the area of cancer chemotherapy, and particularly in South-South Nigeria, where there is a high risk of developing cancer.

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