Gynaecological Malignancies in Calabar, Nigeria: A Tertiary Hospital Based Study

A. J. Omotoso[1*], P. Odusolu[2], E. L. Ekpe[3], U. Okon[2] and O. Oshatuyi[4]

[1]*Department of Pathology, University of Calabar, Calabar, Nigeria.*
[2]*Department of Obstetrics and Gynaecology, University of Calabar, Calabar, Nigeria.*
[3]*Department of Chemical Pathology, University of Calabar, Calabar, Nigeria.*
[4]*ARISH Specialist Laboratory (Diagnostic, Research and Forensic), Calabar, Nigeria.*

Authors' contributions

Article Information

Original Research Article

ABSTRACT

Background: Gynaecological malignancies are important cause of female mortality and morbidity worldwide. The distribution and frequency of these tumors vary from one region to the other.
Aim: This study is aimed at determining the prevalence and pattern of gynecological malignances in Calabar, Nigeria.
Method: A descriptive study of the cancer of the female genital tract of 154 patients was undertaken using the histology register of Pathology Department, University of Calabar Teaching Hospital, Calabar, Nigeria to retract gynecological malignancies for a period of 11 years.
Results: Result showed that the most prevalent gynecological malignancies occurred in the uterine cervix accounting for 56% of all the gynecological malignancies seen within the specified duration

_____

Corresponding author: E-mail: ayomemee@gmail.com;

studied with peak prevalence occurring at the fifth decade of life. The least prevalent was cancer of the vagina representing only 1.9% of cases evaluated.

Conclusion: The study revealed that prevalence of gynecological malignancies is high. There is therefore the need for increased awareness through outreaches, symposia, educational programs, health talks, etc., to enhance reduction of the menace drastically.

1. INTRODUCTION

Malignancy is a condition in which abnormal cells divide without control and can spread to other areas. Gynaecological malignancies affect the female reproductive tract and could lead to death if not detected early and treated [1].

Gynaecological malignancy is an important public health issue in the developing world [2]. The significant challenge in the developing world are the lack of and inadequate cancer awareness, uncertain epidemiology, variable pathology and lack of proper screening facilities. Delayed presentation often results in poor clinical outcome, which could be averted by early detection of these cancers and prompt initiation of treatment [2].

The most common kinds of gynaecological malignancies affect the cervix, ovaries and endometrium (uterus), other less common areas are the vulva, vagina and fallopian tubes. And malignancies are mostly found in women in the 5th decade of life (50-59 yrs). Gynaecological cancers are divided histologically (classification based on type of cells in which it began) into carcinomas (cancers that begin in the epithelium of the organs of the female reproductive system) and sarcomas (cancers that begin in bone, cartilage, fat, muscle, blood vessels, or other connective or supportive tissue of the female reproductive tract). Patients with sarcomas are usually younger than those with carcinomas [1]. Gynaecological malignancies affects women in developing world at a time of life when they are critical to the social and economic stability of their families [3].

2. METHODS

A descriptive study of the cancer of the female genital tract (involving the cervix, uterus, ovary, vagina and vulva) was done using materials from the University of Calabar Teaching Hospital, Calabar over a period of 10 years (1996-2005). The histology registers of Department of Pathology, University of Calabar Teaching Hospital, Calabar was accessed and gynaecological malignancies were retracted for the study period.

The data and results collated were analyzed using Microsoft Excel 2016 and IBM SPSS Version 21. The data was analyzed using inferential statistics (frequencies and percentage), analysis of variance and graphical charts to present the results of our findings.The level of significance was set at 0.05.

3. RESULTS

One hundred and fifty-four (154) cases of gynaecological malignancies were seen during the study period. More gynaecological malignancies was recorded in the year 2000 while the least was recorded in the year 1999. The age of the women ranges from 7 years to 85 years with mean age of 48.08 (SD 14.40). The largest numbers of gynaecological malignancies occurred in women from the fifth of life with 41 (26.62%) of the women belonging to this age bracket. The highest mean age was in women with vulva cancer followed by women with uterine cancer. The lowest mean age was in women with vagina cancer. There was no statistical significance difference in the mean age of the women in this study as all the means were presented in homogenous subsets after a post hoc test following analysis of variance (ANOVA) with F = 2.906, P=0.010

Cancer of the uterine cervix (cervical cancer) accounts for the most prevalent gynaecological malignancy in this study with a prevalence of 59% followed by Cancers of the Corpus Uteri with a prevalence of 21% (of which the prevalence of endometrial cancer was 13.64%, Myometrium 1.30% and Uterus (unspecified) was recorded as 6.49%). The third prevalent malignancy was ovarian cancer accounting for 10% followed by cancer of the vulva 8% while vaginal cancer was rare accounting for only 2%. There was no case of fallopian tube malignancy during the study period.
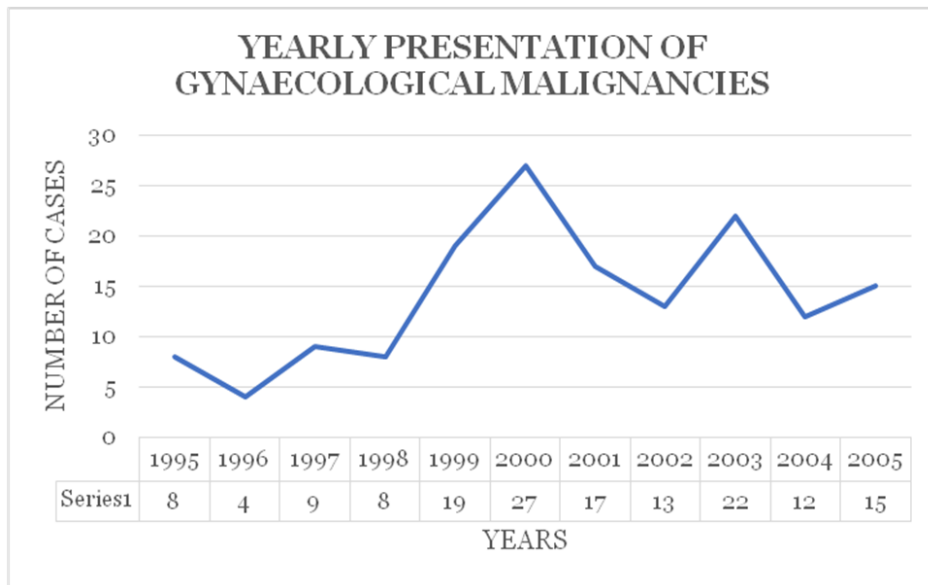
YEARLY PRESENTATION OF GYNAECOLOGICAL MALIGNANCIES

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Series1	8	4	9	8	19	27	17	13	22	12	15

Fig. 1. Yearly presentation of gynaecological malignancies

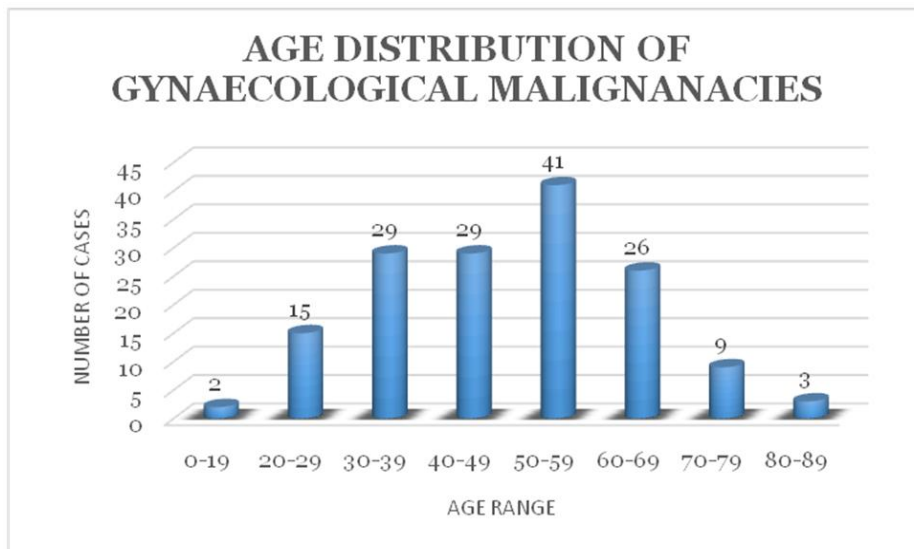## AGE DISTRIBUTION OF GYNAECOLOGICAL MALIGNANACIES

Fig. 2. Age distribution in gynaecological malignancies

The distribution of histopathological subtypes of gynaecological malignancies were shown in Table 3. Squamous cell carcinoma was the most common cancer recorded in the study.

Gynaecological malignancies were observed most in the fifth decade, (age range 50-59). A decline was also observed with increase in age among the women in this region.

The table shows the age distribution of gynaecological malignancies in relation to their anatomic positions. Cervical cancer is the commonest of all and the presentation was observed to peek at the fifth decade of life among the study population.

The highest mean age was in women with vulva cancer followed by women with uterine cancer. The lowest mean age was in women with vagina cancer. There was no statistical significance difference in the mean age of the women in this study (F = 2.906, P=0.010)

Cancer of the cervix (cervical cancer) is the commonest gynaecological malignancy observed

having a prevalence of 59% of the total patients with gynecological malignancy that visited the University of Calabar Teaching Hospital for therapy followed by cancer of the corpus uteri (21%), cancer of the ovary accounts for 10%, vulva cancer 8% while vagina cancer prevalence was 2%.

Table 1. Age/anatomic distribution of gynaecological malignancies

Site	≤19	20-29	30-39	40-49	50-59	60-69	≥70
Cervix	0	7	15	18	27	16	8
Corpus uteri							
• Endometrium	0	3	4	0	8	4	2
• Myometrium	0	0	1	0	1	0	0
• Uterus (unspecified)	0	1	2	3	2	1	1
Ovary	2	3	4	3	2	1	0
Vulva	0	1	1	4	1	4	1
Vagina	0	0	2	1	0	0	0
Total (%)	2 (1.30)	15 (9.74)	29 (18.83)	29 (18.83)	41 (26.62)	26 (16.88)	12 (7.79)

Table 2. Relative frequency and age distribution of gynaecological malignancies

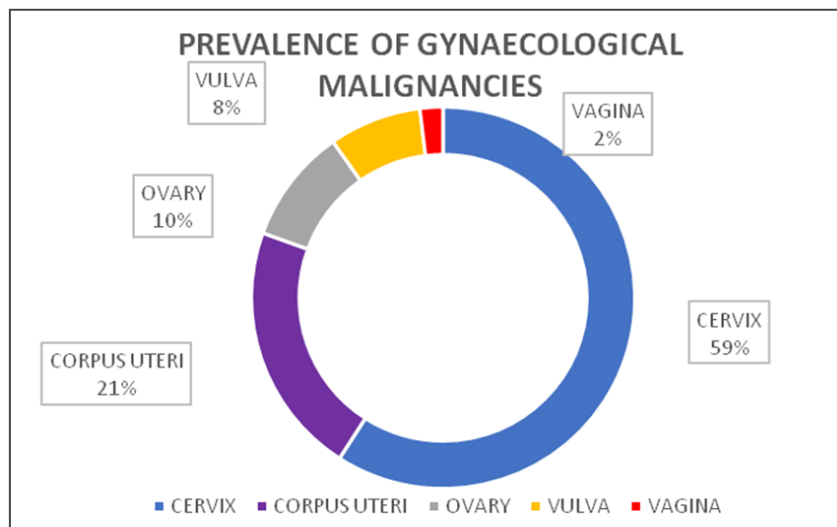| Site	Frequency	Percentage	Age		Anova
			Age range	mean ± sd	
Cervix	91	59.09	21-85	50.07 ± 13.57[a]	F = 2.906
Corpus uteri					P= 0.010
• Endometrium	21	13.64	25-70	48.57 ± 14.65[a]	
• Myometrium	2	1.30	35-57	46.00 ± 15.56[a]	
• Uterus (unspecified)	10	6.49	23-70	46.30 ± 13.52[a]	
Ovary	15	9.74	7-60	35.87 ± 14.60[a]	
Vulva	12	7.79	25-80	52.50 ± 15.30[a]	
Vagina	3	1.95	30-40	35.33 ± 5.03[a]	
Total	15 4	100	7-85	48.08 ± 14.40	

Fig. 3. Prevalence of gynaecological malignancies

Table 3. Distribution of tumour site and histopathological types

Tumour site	Histopathological type	Number of cases (%)
Cervix	Adenocarcinoma	
	• Unspecified	1 (1.10)
	• Well differentiated	2 (2.20)
	• Infiltrating	1 (1.10)
	Carcinoma *in-si-tu*	3 (3.30)
	Endometroid ca cystadenocarcinoma	1 (1.10)
	Squamous cell ca	1 (1.10)
	• Unspecified	
	• Infiltrating	29 (31.87)
	• Invasive	8 (8.79)
	• Well differentiated	31 (34.07)
	• Moderately differentiated	1 (1.10)
	• Poorly differentiated	2 (2.20)
	• Small cell	2 (2.20)
	• Large cell	5 (5.49)
	Total	4 (4.40)
		91 (100)
Endometrium	Adenocarcinoma	
	• Undifferentiated	1 (4.79)
	• Well differentiated	2 (9.52)
	• Moderately differentiated	3 (14.29)
	Endometraial Ca	
	• Poorly differentiated	1 (4.79)
	• Undifferentiated	1 (4.79)
	• Choriocarcinoma	1 (4.79)
	• Squamous cell ca	
	• Unspecified	
	• Infiltrating	5 (23.81)
	• Invasive	1 (4.79)
	• Well differentiated	3 (14.29)
	• Large cell	1 (4.79)
	• Metastatic	1 (4.79)
	Total	1 (4.79)
		21 (100)
Myometrium	Infiltrating adenosquamous ca	1 (50.00)
	Infiltrating squamous cell ca	1 (50.00)
	Total	2 (100)
Uterus (otherwise unspecified)	Adenocarcinoma	
	• Infiltrating	1 (10.00)
	• Moderately differentiated	1 (10.00)
	Burkitt lymphoma	1 (10.00)
	Choriocarcinoma	1 (10.00)
	Cystadenocarcinoma	1 (10.00)
	Squamous cell ca	
	• Unspecified	1 (10.00)
	• Infiltrating	3 (30.00)
	• Invasive	1 (10.00)
	Total	10 (100)

Tumour site	Histopathological type	Number of cases (%)
Ovary	Adenocarcinoma	1 (6.67)
	Burkitt lymphoma	3 (20.00)
	Endometrioid ca	1 (6.67)
	Papillary cystadenocarcinoma	1 (6.67)
	Papillary adenocarcinoma	4 (26.67)
	Serous cystadenocarcinoma	2 (13.33)
	Squamous cell ca	
	• Unspecified	1 (6.67)
	• Infiltrating	1 (6.67)
	• Invasive	1 (6.67)
	Total	15 (100)
Vulva	Endometrioid cancer	1 (8.33)
	Squamous cell ca	
	• Unspecified	7 (33.33)
	• Invasive	4 (58.33)
	Total	12 (100)
Vagina	Squamous cell ca	
	• Unspecified	2 (66.67)
	• Invasive	1 (33.33)
	Total	3 (100)

4. DISCUSSION

Gynaecological malignancies accounted for 12.78% of all the 1207 malignant tumours histologically studied over the period of eleven years, this is quite high when compared with other studies [4-9]. 11.7% was reported in a study conducted in Kano [4], in Abakaliki [5] (8.4%), 5.4% in Jos [6], 4.18% in Port Harcourt [7], 2.8% Ghana [8] and 0.32% was reported in Pakistan [9]. More gynaecological tumours were seen in the year 2000 compared with the amount seen in other years in this study. Cancer of the cervix was the most prevalent gynaecological malignancy seen, with a prevalence of 59% (91) of the total gynaecological malignancies. This finding is consistent with other reports from other parts of Nigeria, and other parts of Africa [4-7,8].

Majority of the gynaecological malignancies occurred within the age bracket 30-69 years, similar with what was obtained from other studies from Abakaliki [5], Enugu [10,11], and Port Harcourt [7]. The mean seen in this study was 48.08 ± 14.40, this is similar to the mean age from a study in Bangladesh that focuses on gynaecological cancers from surgical specimens by Rahman et al. [12]. There was no observable statistical difference between the tumour site and age distribution of the gynaecological malignancies (F=2.906, P=0.010) with a p-value of 0.05. The highest mean age was seen in cancer of the vulva with mean age of 52.50 ± 15.30 while the least was seen among those with vagina cancer with mean age of 35.33 ± 5.03.

Cervical cancer is the 4th most common cancer affecting women worldwide, after breast, colorectal, and lung cancers [13] but second most common malignancy in developing countries [14]. In this study also, cancer of the cervix accounted for the most prevalent gynaecological malignancy in our centre, with a prevalence of 59% in our eleven years study. This agrees with studies from other centres locally [4-7] and some international reports [2,8-9,12].

The prevalence of cancer of the corpus uteri was 21%, the prevalence of endometrial cancer was 13.64%. In this study, endometrial cancer accounts for the second most prevalent gynaecological malignancy. In the previous studies from other centers in Nigeria [4-7,10-11, 14], Ovarian cancer is mostly reported to be more prevalent than endometrial cancer. The mean age of cancer of corpus uteri in this study was 48.57 ± 14.65 for endometrial cancer, 46.00

±15.56 for cancer of the myometrium and 46.30 ± 13.52 for cancer of the uterus (site unspecified). There is no significant statistical difference in the mean ages of the individuals with cancers of the corpus uteri. The mean age reported for cancer of the corpus uteri in this study is similar with 41.58 ± 10.04 that was reported by Rahman et al. [12] and lower than 58.0 ± 11.5 that was reported by Nwankwo et al in Enugu [10].

Ovarian cancer was the third commonest malignancy in our study, accounting for 9.74% of gynaecological malignancies. The prevalence is low when compared with other findings from different centres in Nigeria. 23.6% in Kano [4], 21.2% in Enugu [11], 19.2% in Abakaliki [5], 15.3% was reported in Jos [6]. The mean age ovarian cancer occurrence in outer study was 35.87 ± 14.60 which was lower than the 46.7 ± 11.3 reported in Enugu [10].

Cancer of the vulva accounts for 7.79% which is in concordance with 7.1% which was reported by Agboeze et al in Abakaliki [5]. Ulla et al reported 17.8% in a hospital based study in Pakistan [9], this *is* significant higher than the 7.79% observed in our study. Nwankwo et al also reported 4.3% in Enugu, Eastern Nigeria [10], 2.7% was reported in a study by Dhakal et al on the histological pattern of gynecological cancers in Nepal [15]. The mean age of 52.50 ± 15.30 was also observed in this study. Cancer of the vulvar are of two types, one resulting from intraepithelial neoplasia caused by human papilloma virus (HPV) infection the same committed virus causing cancer of the cervix and the order which results from the alterations of p53 or from chronic inflammation by non-neoplastic epithelial disorders [16].

Cancer of the vagina accounts for 1.95% of gynaecological malignancies in our centre. Cancer of the vagina is usually not common as seen in previous studies from other parts of Nigeria [4-7,10-11]. 1.4% was reported in a study in Jos [6], 0.9% was reported in Enugu [10], and no case of vagina cancer was reported in a study in Kano and in Abakaliki [4,5]. A relatively low prevalence of 0.2% was reported in Ghana [8], 1.08% was reported in Dhaka, Bangladesh by Rahman et al. [12] 3.5% was also reported in Sudan [17], and 4.44% was reported in a study in Pakistan [9]. The mean age seen in this study was 35.33 which is comparable to 37.67 that was reported by Rahman et al in Bangladesh [12].

Squamous cell carcinoma accounts for majority of the gynaecological malignancies seen in our study as presented in Table 3.

Some common symptoms of gynaecological cancers/malignancies include: Abnormal vaginal bleeding or discharge, pelvic pain/pressure, bloating, abdominal or back pain, itching or burning sensations felt in/around the vulva. Both endometrial and cervical cancers are more likely to be diagnosed in the early stages because of their symptoms and the availability of effective screening tools. Regrettably, ovarian cancer is denoted the "silent killer" among the gynaecologic cancers because it is often not diagnosed until an advanced stage when a cure is difficult.

Geographic variation of cancer cases involves regional variations in presence of major risk factors, availability of medical facilities, use of the available medical facilities, age and quality of the treatment prescribed for the patient [18,19]. In 2007, about 72% of all deaths from cancer occurred in low- and middle-income countries, and the incidence is increasing [20]. Studies have shown that about 85% of cervical cancers occur in less developed regions mainly due to poverty, lack of knowledge and ignorance [21]. Cervical Cancer accounts for over 60% of the gynaecological burden in developing countries despite being preventable by current technologies [22]. Human Papilloma Viruses (HPV) are the principal causes of cervical cancers.

A study by A.O. Oguntayo et al. [22] shows that gynaecological malignancies possesses a great financial burdens and most women who otherwise escaped maternal mortality might eventually become victims of cancer death, hence, prevention of gynaecological malignancies is of top most importance.

5. CONCLUSION

The morbidity and mortality resulting from gynaecological malignancies is progressing at an increasing rate, but can be effectively reduced through regular screening programs, life style, use of vaccination and through nationwide educational awareness and enlightenment programs. Endometrial cancer cases were seen to be on the rise, nationwide facilities for screening and regular gynaecological examinations and detailed follow-up surveillance system can drastically reduce the mortality and

morbidity resulting from gynaecological malignancies.

CONSENT

As per international standard or university standard, written patient's consent has been collected and preserved by the author(s).

ETHICAL APPROVAL

As per international standard or university standard written ethical permission has been collected and preserved by the author(s).

COMPETING INTERESTS

Authors have declared that no competing interests exist.

REFERENCES

1. Rosai J. Uterus Corpus in Ackerman's surgical pathology (7th Edition) St Louis: C. V. Mosby Company. 1989;1050-1097.

2. Madhutandra Sarkar, Hiraldal Konar, Raut DK. Gynecological malignances: Epidemiological characteristics of the patients in a tertiary care hospital in India. Asian Pacific J Cancer Prev. 2012;13: 2997-3004.

3. Rose I Anorlu. Cervical cancer: The sub-Saharan African perspective, reproductive health matters. 2008;16:32:41-49

4. Omole-Ohonsi A, Habib UR. Pattern of gynaecological cancers in Kano J. Clin Med. 2011;2(1):103-109.

5. Agboeze J, Ezeonu PO, Onoh RC, Nwali MI, Agwu MR, Egbuji CC. Frequency and pattern of gynecological cancers in federal teaching hospital, Abakaliki, Nigeria. 2015; 4(2):54-57.

6. Sanni W0, Ocheke AN, Oyebode T, Jonah M, Nyango DD, Olugbenga AS, Atiene SS Pattern of gynaecological malignancies in Jos. Trop J Obstet Gynaecol. 2013;30(1): 97-102.

7. Briggs ND, Katchy KC. Pattern of primary gynaecological smalignancies as seen in a tertiary hospital situated in the Rivers State of Nigeria. Int J Gynecol Obstet. 1990; 31:157-61.

8. Nkyekyer K. Pattern of gynaecological cancers in Ghana. East Afri. Med. Jorl. 2000;77(10):534-538.

9. Ullah E, Lail RA, Taj N, Alam MI. Malignant and benign lesions of female genital tract – an experience at a tertiary care hospital in Bahawalpur - Pakistan. Biomedica. 2012; 28(2):149-152.

10. Nwankwo KC, Okafor OC, Ezeqwui HU. Pattern of female genital tract malignancy in University of Nigeria teaching hospital Enugu. J. Coll. of Med. 2011; 16(1):30-35.

11. Okeke TC, Onah N, Ikeako LC, Ezenyeaku CCT. The frequency and pattrn of female genital tract malignancies at the University of Nigeria Teaching Hospital, Enugu, Nigeria. Annals of Med. & Health Resec. 2013;3(3):345-348.

12. Rahman MA, Siddika ST, Mazid MA. Gynaecological cancers in surgical specimens – A hospital based analysis. Med. Today. 2014;26(2):79-82.

13. World Health Organisation. Latest world cancer statistics global cancer burden rises to 14.1 million new cases in 2012: Marked increase in breast cancers must be addressed. 2013;2.

14. Akinde OR, Phillips AA, Olubanji A, Oguntunde, Afolayan OM. Cancer mortality pattern in Lagos University Teaching Hospital, Lagos, Nigeria; 2014.

15. Dhakal HP, Pradhan M. Histological pattern of gynaecological cancers. J Nepal Med Assoc. 2009;48(176):301-305.

16. Kenneth O Simbiri, Hem Chandra Jha, Mukendi Kashalala Kayembe, Erle Robertson. Oncogenic viruses associated with vulva cancer in HIV-1 Patients in Botswana. Infectious Agents and Cancer. 2014;9(24):1-9.

17. Duria AM Rayis, Azza Zulfu, Khalid Yassin, Alwiya Merghani, Assma AA, Fagiri, Sawsan Abdel Raheem. Histopathological pattern of gynaecological malignancies: National Health Laboratory (NHL), Sudan. Journal of Health Sciences and Nursing. 2018;3(1):1-8.

18. Allard JE, Maxwell GL. Race disparities between black and white women in the incidence, treatment, and prognosis of endometrial cancer. Cancer Control Jan. 2009;16(1):53–6.

19. Yap S, Matthew RP. Racial and ethnic disparities in cancers of the uterine orpus. JNatl Med Assoc. 2006;98(12):1930–3.

20. World Health Organization. The global burden of disease: 2004 update. WHO, Geneva; 2008.

21. WHO/ICO Information Centre. Human papillomavirus and related cancers in world: Summary report 2010, [Internet]. Barcelona, Spain: WHO/ICO Information Centre on HPV and Cervical Cancer (HPV Information Centre); 2010.
[Cited 2012 May 31]

22. Oguntayo AO, Zayyan M, Akpar M, Abimbola ODK, Adewuyi SA. The burden of gynecological cancer management in Northern Nigeria. Open Journal of Obst. & Gyn. 2013;3:634-638.

Peer-review history:
The peer review history for this paper can be accessed here:
http://www.sciencedomain.org/review-history/25565