ORIGINAL ARTICLE

HISTOPATHOLOGICAL PATTERN OF ENDOMETRIAL CANCERS IN KANO, NORTH-WESTERN NIGERIA: A 5-YEAR RETROSPECTIVE REVIEW

HARUNA MS[1], SULE AA[2].

ABSTRACT

Background and Objective: Endometrial cancers occur globally with wide geographical variation in prevalence and histopathological pattern related to the level of socioeconomic development in the society. The objective of this study was to determine the age, frequency distribution and histopathological spectrum of endometrial cancers in Kano, North-western Nigeria.

Materials and Methods: This was a 5-year retrospective study from 2nd January, 2011 to 31st December, 2015 of all endometrial cancers diagnosed at the pathology department of Aminu Kano Teaching Hospital, Kano, Nigeria.

Results: Forty-one cases of endometrial cancers were diagnosed during the five-year study period. The ages range from 32 to 80 years (mean age of 56.5 years) and relative peak age of incidence occurring in the 51 -60 years group. Carcinomas accounted for the majority (32 cases, 78%) of endometrial cancers distantly followed by malignant mesenchymal tumours (7 cases, 17.1%), while theremaining 2 cases (4.9%) were malignant mixed Mullerian tumours. Most lesions were Grade 2 or 3.

Conclusion: Malignant tumours of the endometrium are relatively uncommon in Kano afflicting people in the sixth and seventh decades, which were similar to most published reports in Nigeria and sub-Saharan Africa but at variance with the developed world where endometrial cancer is the most common invasive cancer of the female genital tract. Higher histological grades characterize our patients hence the need to control modifiable risk factors like sedentary life style, obesity and oestrogen usage.

KEYWORDS: Endometrial cancer, histopathological pattern, carcinoma.

INTRODUCTION

Endometrial cancer occurs globally with wide geographical variation in prevalence and histopathological pattern related to the level of socioeconomic development in the society. In North America, Europe and Australia, it is the most frequently diagnosed malignancy of the female genital tract, representing 6% of all cancer cases and the fourth most common female cancer following breast, lung and colorectal.[1-4] However, Asia and Africa have the lowest rates and it is the third most common gynaecologic cancer in most developing countries.[5,6]

Endometrial cancer appears most frequently during menopausal period, 75% of cases occur after menopause. Women younger than 40 make up 5% of cases and 10 – 15% of cases occur in women under 50. The worldwide median age of diagnosis is 63 years of age.[7] As with many other cancers, prolonged oestrogen exposure, endometrial hyperplasia, obesity, nulliparity, diabetes mellitus, tamoxifen usage, increasing age, polycystic ovarian

Department of [1]Morbid Anatomy and Forensic Medicine, Usmanu Danfodiyo University, Sokoto/Aminu Kano Teaching Hospital, Kano.
[2]Pathology, Bayero University Kano/Aminu Kano Teaching Hospital, Kano.

Correspondence to:
DR ALFA ALHAJI SULE
Pathology Department,
Bayero University, Kano, Nigeria.
eMail:- alphasul2002@yahoo.com

syndrome, hereditary nonpolyposis colon cancer among others are strongly associated with an increased risk of developing endometrial cancer.[8] The vast majority of endometrial cancers are adenocarcinomas (80%). They are divided into type 1 and 2 which are oestrogen dependent and oestrogen-independent respectively. Perimenopausal abnormal uterine bleeding is the dominant manifestation.[9]

There is a paucity of information on endometrial cancers despite the gradually increasing incidence in Nigeria.[10]There has, however, been no publication on this disease from Kano, the most populous state in Northen Nigeria, hence this review. The aim of this study was to determine the age, frequency distribution and histopathological spectrum of endometrial cancers as seen in the histopathology department of Aminu Kano Teaching Hospital, Kano and to compare our findings with those from the previous series.

MATERIALS AND METHODS

This was a 5-year retrospective study from 2nd January, 2011 to 31st December, 2015 of all endometrial cancers recorded in the histology registers and patient case notes of the Aminu Kano Teaching Hospital, Kano, Nigeria.The following variables were obtained; age, frequency and histopathological type.

Histology slides on all cases were retrieved and reviewed by the study authors. Fresh sections were cut from archival paraffin blocks when slides could not be retrieved. All specimens had been fixed in 10% formal saline, then routinely processed for paraffin embedding. Microtome sections were cut at 4µ and stained with haematoxylin and eosin. The diagnosis was based on 2003 World Health Organization classification of tumours of the uterine corpus.[11] The data was subsequently analysed using SPSS version 20 and presented as graph and frequency table.

RESULTS

Forty-one cases of endometrial cancers were diagnosed during the five-year study period. The ages range from 32 to 80 years (mean age of 56.5 years). The overwhelming majority (61%) of cases were within the sixth to seventh decades of life, peaking in the sixth decade. Epithelial tumours occurred in a slightly older age group (sixth to seventh decades) than mesenchymal tumours (fifth to sixth decades). Most (65.9%) of these cases were endometrial biopsies,while 14 cases were hysterectomies.

Table 1 depicts the age and frequency distribution of different histological subtypes. Carcinomas accounted for the majority (32 cases, 78%) of endometrial cancers distantly followed by malignant mesenchymal tumours (7 cases, 17.1%), while the remaining 2 cases (4.9%) were malignant mixed Mullerian tumours. Of the adenocarcinomas, more than half (59.4%) were endometrioid, followed by papillary serous (15.6%), and other less common subtypes. Moderately and poorly differentiated histologic variants comprised 19% and 53% respectively. Figures 1 – 4 show photomicrographs of papillary serous adenocarcinoma, mucinous adenocarcinoma, endometrial stromal sarcoma and malignant mixed Mullerian tumour respectively.

Table 1: Histological types and age distribution of malignant tumours of the endometrium in Kano

Histologic type	31-40 years	41-50 years	51-60 years	61-70 years	71-80 years	N(frequency in percentage)
Epithelial tumours						
Endometrioid adenocarcinoma	2	2	8	5	2	19 (46.3)
Mucinous adenocarcinoma	1	-	1	-	-	2 (4.9)
Papillary serous adenocarcinoma	-	1	1	2	1	5 (12.2)
Squamous cell carcinoma	-	1	-	-	-	1 (2.4)
Transitional cell carcinoma	-	1	-	-	-	1 (2.4)
Undifferentiated carcinoma	-	1	1	1	-	3 (7.3)
Messenchymaltumours						
Endometrial stromal sarcoma LG	-	1	1	-	1	3 (7.3)
Undifferentiated end. Sarcoma	-	-	1	-	-	1 (2.4)
Leiomyosarcoma	1	1	1	-	-	3 (7.3)
Mixed epith. &mes. Tumours						
MMMT	-	-	1	1	-	2 (4.7)
Secondary (metastasis)	-	-	-	1	-	1 (2.4)
Total	**4**	**8**	**15**	**10**	**4**	**41(100)**

MMMT=malignant mixed Mulleriantumour. End=endometrial. Epith=epithelial. Mes=messenchymal

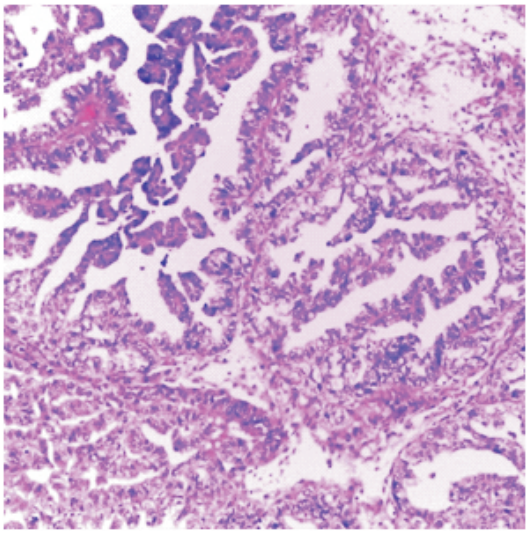

Figure:1 Papillary serous adenocarcinoma (H&Ex10)

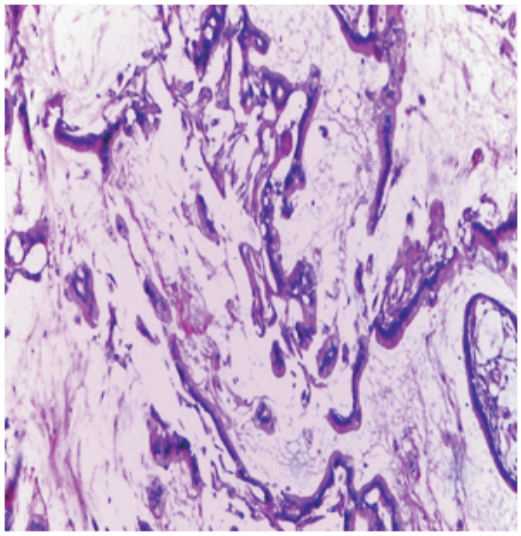

Figure:2 Mucinous adenocarcinoma (H&Ex10)

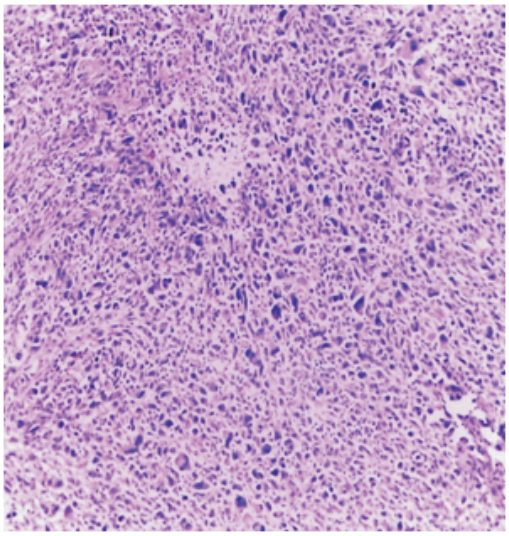

Figure: 3 Endometrial stroma sarcoma (H&Ex10)

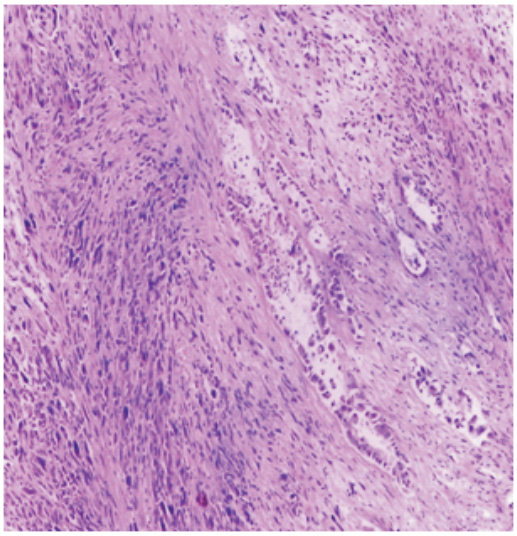

Figure: 4 Malignant mixed Mulleriantumour (H&Ex10)

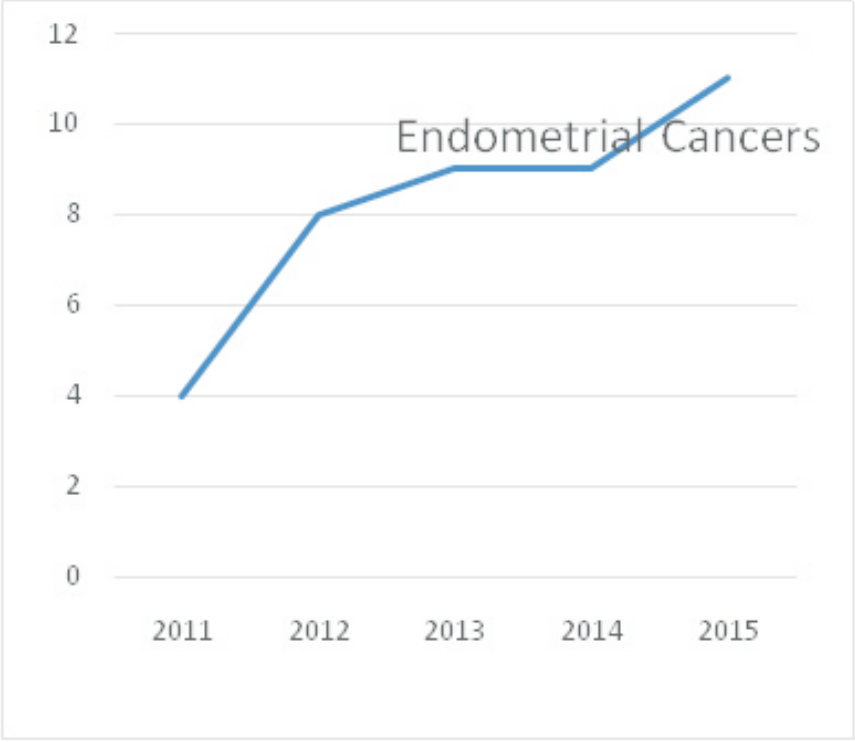

Figure 5: Graph of frequency distribution of Endometrial Cancers in Kano from 2011 to 2015

DISCUSSION

A total of forty-one cases of endometrial cancers were seen during the study period which represents 10.6% of all gynaecological malignancies in Kano. This is in keeping with reports from Abakaliki, Ghana, Botswana, Malawi, Zimbabwe, Pakistan and other sub-Saharan countries, but at variance with the Western societies where much higher rates were observed.[12-18] These discrepancies are predominantly attributed to increase in obesity rates in developed nations, the sharp increase in the life expectancy and lower birth rates, all of which have an aetiologic relationship with endometrial cancer. In general terms, it is widely accepted that cancer of the endometrium is a disease of affluent societies, with incidence rates closely correlating with a nation's gross domestic product.[19]

In this series, the mean age was 56.5 years. While this corroborates studies from Maiduguri, Jos, Port Harcourt and Zambia, it is somewhat lower than 63 years observed in Caucasians. This affirms the fact that increasing age plays a role in the development of endometrial cancer. Racial variations and environmental factors could also explain the disparities.[20-23]

Most (65.9%) of these cases were endometrial biopsies with 14 hysterectomies. Perhaps as with other common malignancies in our environs, many patients present late in obvious clinically advanced stage inoperable tumours.

The overwhelming majority of endometrial cancers in this study were adenocarcinomas (78%%), which is the main histological type reported in all series.[24] Approximately 70% [69.8%] were either grade 2 or grade 3 of endometrioid adenocarcinomas, papillary serous adenocarcinomas and malignant mixed Mullerian tumours. They are associated with myometrial invasion, early spread and worse prognosis.[25] However, histologic variants associated with favourable prognosis were observed in the United States and other Western societies because the majority of patients present at an early stage resulting in only 4% of cancer deaths in women. The unfavourable prognosis was also observed among African-American women.[26] These dissimilarities are inferred to be due to lack of access to care, socio-economic status, cultural barriers, inequity in treatment and tumour biological behavior among other factors.

Furthermore, there was a gradual increase in frequencies of endometrial malignancies over the years in the study period (Figure 5). This is mainly due to increased awareness of the disease, sedentary life style, prolonged oestrogen exposure and improved documentation in our environment.

The constraint of the review was that it was a retrospective hospital-based study with the problems of inadequate clinical, laboratory and treatment outcome data that may be of additional prognostic significance. These are best appraised using a structured prospective study.

In conclusion, endometrial cancers are relatively uncommon in Kano, afflicting people in the sixth and seventh decade, which were similar to most published reports in Nigeria and sub-Saharan Africa but at variance with the developed world where endometrial cancer is the most common invasive cancer of the female genital tract. Higher histological grades and far-advanced diseases characterize our patients, hence the need to address the burden of this malignancy in our environment by controlling modifiable risk factors such as sedentary life style, obesity and oestrogen usage among others. We proposed further appraisal to unveil factors responsible for these late presentations and the high-grade tumours in our own environment.

ACKNOWLEDGEMENT

We are grateful to the Chief Laboratory Scientist of Aminu Kano Teaching Hospital; Mr Sani Abubakar for laboratory technical work.

REFERENCES

1. Siegel R, Ma J, Zou Z, Jemal A. Cancer statistics, 2014. CA Cancer J Clin. 2014;64:9-29
2. Ferlay J, Soerjomataram I, Ervik M, Dikshit R, Eser S, Mathers C, et al. GLOBOCAN 2012. Cancer Incidence and Mortality Worldwide: IARC Cancer Base No. 11 [Internet]. Lyon, France: International Agency for Research on Cancer; 2014.
3. Parkin DM, Whelan SL, Ferlay J, Raymond L, Young J, editors. Cancer incidence in five continents. Volume vii. Lyon, France: IARC SC. Publication no. 143; 1997.
4. Mack TM, Cozen W, Quinn MA. Epidemiology of cancer of the endometrium, ovary, vulva and vagina In: Coppleson M, Monaghan JM, Morrow PC, Tattersall MHN, editors. Gynecologic Oncology. Second edition. New York: Churchill-Livingstone; 1992. p. 31-54.
5. Burke WM, Orr J, Leitao M, Salom E, Gehrig P, Olawaiye AB, Brewer M, Boruta D, Villella J, Herzog T, Abu Shahin F. "Endometrial cancer: A review and current management strategies: Part I". Gynecologic Oncology 2014;134(2):385–92.
6. Rose PG. Endometrial carcinoma. N Eng J Med. 1996;335:640–649
7. Saso S, Chatterjee J, Georgiou E, Ditri AM, Smith JR, Ghaem-Maghami S. "Endometrial cancer". BMJ 2011;343:3954–3954.
8. Hecht JL, Mutter GL: Molecular and pathologic aspects of endometrial carcinogenesis. J ClinOncol 2006;24:4783-91.
9. McMeekinDS., et al., Chapter 23. Corpus: Epithelial Tumors. In Principles and Practice of Gynecologic Oncology, 5th Edition, R.R. Barakat, et al., Editors. 2009, Lippincott Williams & Wilkins: Baltimore. p. 683-686.
10. Mohammed A, Ahmed SA, Oluwole OP, Avidime S. Malignant tumours of the female genital tract in Zaria, Nigeria: Analysis of 513 cases. Annals of African Medicine 2006; 5(2): 93-96.
11. *Silverberg SG, Kurman RJ, Nogales F, et al*. Tumours of the Corpus Uterine. In: Tavassoli FA, Devilee P, editors. Pathology and Genetics of Tumours of the Breast and Female Genital Organs. Lyon: IARC; 2003:217-57.
12. Agboeze J, Ezeonu P O, Onoh R C, Nwali M I, Agwu M R, Egbuji C C. Frequency and Pattern of Gynecological Cancers in Federal Teaching Hospital, Abakaliki Journal of Basic and Clinical Reproductive Sciences ·2015;4 (2):54-7.
13. Nkyekyer K. Pattern of gynaecological cancers in Ghana. East. Afr Med J 2000;77:534-8.
14. Tanko MN, Kayembe MA, Cainelli F, Vento S. Malignant Tumours of the Genital Tract among Botswana Women. Ghana Med J 2012;46(3):142-6.
15. Taulo F, Malunga E, NgwiraA.Audit of gynaecological cancers in Queen Elizabeth Central Hospital, Blantyre. Malawi Med J 2008;20:140-2.
16. Kasule J. The pattern of gynecological malignancy in Zimbabwe. East Afr Med J 1989;66:393-9.
17. Jamal S, Mamoon N, Mushtaq S, Luqman M, Moghal S. The pattern of gynecological malignancies in 968 cases from Pakistan. Ann Saudi Med 2006;26:382-4.
18. Stewart BW, Kleihues P. Cancers of female reproductive tract. In: World

cancer report. Lyon: IARC Press;
19. Parazzini F, La Vecchia C, Bocciolone L, Franceschi S. the epidemiology of endometrial cancer GynaecolOncol, 1991;41:1-16.
20. Kyari O., Nggada H., Mairiga A. Malignant tumours of female genital tract in North Eastern Nigeria. East African Medical Journal 2004; 81(3): 142 – 5
21. Mandong BM, Ujah IAO. A ten-year review of gynaecological malignancies in Jos University Teaching Hospital, Jos, Nigeria (1990-1999). Sahel Med J 2003;6:49-52.
22. Nwosu SO, Anya SE. Malignancies of the female genital track at the University of Port Harcourt Teaching Hospital: a ten year review—1990-1999. Niger Postgrad Med J 2004; 11(2): 107-9.
23. Bowa K., Wood C., Chao A., Chintu C., Mudenda V., Chikwenya M. A review of the epidemiology of cancers at the University Teaching Hospital , Lusaka, Zambia. Trop Doct. 2009; 39(1): 5-7
24. . Duong LM, Wilson RJ, Ajani UA, Singh SD, Eheman CR. Trends in endometrial cancer incidence rates in the United States, 1999–2006. J Womens Health (Larchmt) 2011; 20(8): 1-7.
25. Adekanbi AOA, Jimoh MA, Ajani MA, Fawole AO. Endometrial Cancer in Ibadan: Epidemiological and Clinico-pathological Features- 10 Year Review. New York Sci J 2016;9(3):19-23.
26. Siegel R, Ward E, Brawley O. Jamal A. Cancer statistics. The impact of eliminating socioeconomic and racial disparities on premature cancer deaths. CA: A Cancer Journal for Clinicians 2011; 61(4):212-36.

Cite this article as: Haruna MS, Sule AA. Histopathological Pattern of Endometrial Cancers In Kano, North-western Nigeria: A 5-year Retrospective Review Bo Med J 2016; 13(2):141 - 147.
Source of Support: Nil, **Conflict of Interest:** None declared.