

ORIGINAL RESEARCH ARTICLE

Gynaecological cancer-related deaths in a tertiary hospital: A four-year retrospective review

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Abstract

The aim of this study is to describe the profile, causes of death, and associated complications among women who died with a diagnosis of gynecological cancer during a four-year period in a gynae oncology unit in a tertiary hospital. The study is based on a retrospective review of clinical records of patients. There were 368 gynecological cancer admissions during the study period and 51 gynecological cancer-related deaths (13.8%); however, only 48 (13%) of the 51 files were available for analysis. The mean age of the women who died was 52.7 years (SD \pm 16.92). Most of the women who died were South African citizens (41, 85%), black (44, 91.7%) and unemployed (37, 77.1%). The most common comorbidities were hypertension and HIV which occurred at similar frequencies (20, 41.7%), followed by diabetes mellitus (7, 14.6%). The three most common cancers were cervical (18, 37.5%), ovarian (13, 27.1%), and endometrial (12, 25.0%). All women who died (48, 100%) had some form of cancer-related complications on admission to the hospital. The most common complication at presentation was obstructive uropathy (16, 31.3%) followed by ascites (11, 21.6%) and pleural effusion (8, 15.8%). Just less than half of the patients (22, 45.8%) received palliative treatment due to advanced-stage disease, and the remainder, (20, 41.6%) and (5, 10.4%) surgical and radiation therapy, respectively. The surgical procedure performed was staging laparotomy for ovarian and endometrial cancer (19, 95%) and radical hysterectomy and lymph node dissection for operable cervical cancer (01, 5%). Forty-nine complications were recorded among the 20 women who underwent surgical treatment. The most common complications were sepsis and hemorrhage followed by organ injury. (*Afr J Reprod Health* 2024; 28 [7]: 30-34).

Keywords: Gynecological Cancer; Deaths; Causes; Complications

Résumé

Le but de cette étude est de décrire le profil, les causes de décès et les complications associées chez les femmes décédées avec un diagnostic de cancer gynécologique au cours d'une période de quatre ans dans une unité de gynécologie-oncologie d'un hôpital tertiaire. L'étude est basée sur une revue rétrospective des dossiers cliniques des patients. Il y a eu 368 admissions pour cancer gynécologique et 51 décès d'origine gynécologique (13,8 %) ; cependant, seulement 48 (13 %) des 51 dossiers étaient disponibles pour analyse. L'âge moyen des femmes décédées était de 52,7 ans (ET \pm 16,92). La plupart des femmes décédées étaient des citoyennes sud-africaines (41, 85 %), noires (44, 91,7 %) et au chômage (37, 77,1 %). Les comorbidités les plus courantes étaient l'hypertension et le VIH, qui survenaient à des fréquences similaires (20, 41,7 %), suivis du diabète sucré (7, 14,6 %). Les trois cancers les plus courants étaient le cancer du col de l'utérus (18, 37,5 %), de l'ovaire (13, 27,1 %) et de l'endomètre (12, 25,0 %). Toutes les femmes décédées (48, 100 %) ont présenté une forme ou une autre de complications liées au cancer lors de leur admission à l'hôpital. La complication la plus fréquente lors de la présentation était l'uropathie obstructive (16, 31,3 %), suivie de l'ascite (11, 21,6 %) et de l'épanchement pleural (8, 15,8 %). Un peu moins de la moitié des patients (22, 45,8 %) ont reçu un traitement palliatif en raison d'un stade avancé de la maladie, et le reste (20, 41,6 %) et (5, 10,4 %), une chirurgie et une radiothérapie, respectivement. L'intervention chirurgicale réalisée était une laparotomie de stadification pour un cancer de l'ovaire et de l'endomètre (19, 95 %) et une hystérectomie radicale et un curage ganglionnaire pour un cancer du col de l'utérus opérable (01, 5 %). Quarante-neuf complications ont été enregistrées parmi les 20 femmes ayant bénéficié d'un traitement chirurgical. Les complications les plus courantes étaient la septicémie et l'hémorragie, suivies de lésions organiques. (*Afr J Reprod Health* 2024; 28 [7]: 30-34).

Mots-clés: Cancer gynécologique; Décès; Causes; Complications

Introduction

Despite advances in medical science, technology, and treatment modalities, cancer is the second most

common cause of death after complications of heart diseases worldwide, and 70% of the global burden of cancer deaths occur in low- and middle-income countries (LMIC)¹. Causes of death in

cancer patients are multiple, ranging from the progressive effects of the disease that manifest as primary or secondary organ failure, complications of treatment (e.g. bleeding, neutropenia, sepsis), or, in some cases, complications related to the comorbidities^{2,3}. It is therefore critical for the cancer treatment units to continuously review the causes of deaths and associated factors in order to improve the quality of care. The aim of this exercise would be to identify modifiable factors and utilize the information to improve patient outcomes⁴. Unlike maternal mortality audits, which have become the standard practice in many clinical units worldwide, audits of cancer-related deaths have not yet become a global practice. This is despite the fact that gynecological cancers are a significant cause of morbidity and mortality among women globally.

Gynecological cancers are a major cause of morbidity and mortality among women worldwide. The International Agency for Research on Cancer estimates that gynecological cancers contribute approximately 19% of the 5.1 million cancer-related deaths worldwide, with most of these deaths attributed to cervical cancer^{5,6}. Cervical cancer-related mortality varies between countries, ranging between 0.77/100 000 in Israel and 14.87/100 000 in Chile. In SA, the age-standardized mortality rate for cervix cancer is lowest among white women living in metropolitan areas at 3.6 / 100,000 and highest among historically non-metropolitan colored and black women at 30.2 and 25.7/100 000 respectively⁵. The above figures suggest that historically colored and black African women in South Africa are at the highest risk of dying from cervical cancer. The purpose of this study was to investigate the profile, causes of death, and related complications among women who died with a diagnosis of gynecological cancer admitted to our gynae oncology unit over a four-year period (1st July 2015 until 31st July 2019).

Methods

This is a retrospective cross-sectional review of patients' clinical record between the period 1st July 2015 to 31st July 2019 at Charlotte Maxeke Johannesburg Academic Hospital (CMJAH). The hospital is one of the 10 National Hospitals in South Africa and a teaching hospital in association with the University of the Witwatersrand. It has a

bed capacity of 1088 beds (28 of which are gynecological oncology inpatient beds), well-functioning ICU High care facilities, Blood bank, National Health laboratory, radiation and medical oncology services and all surgical and medical specialists, and subspecialist services. The study included all women who died of gynecological cancer at the study site during the study period.

Details of women who died from gynecological cancer during the study period at the study site were obtained from the gynecological ward and theatre registries. This information was used to access patient clinical files from the Patient Clinical Records Department. The following information was extracted from the files using a purposefully designed data sheet: patient demographic information, cancer diagnosis, treatment, complications, and cause of death. The data was transferred to an Excel spreadsheet and analyzed using descriptive statistics on the Statistical Package for Social Sciences (SPSS). The Chief Executive Officer (CEO) of CMJAH granted permission for the study, and ethical approval, from the Human Research Ethics Committee (Medical) of the University of Witwatersrand (Clearance number: M200880).

Results

There were 368 gynecological cancer related admissions and 51(13.8%) cancer-related deaths during the study period. This translates into a gynecological cancer mortality rate of 13,858.7 / 100 000. However, only 48 (94.1%) of the 51 files were available for analysis. The mean age of the women who died was 52.7 years (SD ±16.92). Majority of the women who died were South African citizens (41, 85%), black (44, 91.7%) and unemployed (37, 77.1%). The most common comorbidity was hypertension and HIV which occurred at similar frequencies (20, 41.7%), followed by diabetes mellitus (7, 14.6%) (Table 1).

The three most common cancers were cervical (18, 37.5%), followed by ovarian (13, 27.1%) and endometrial (12, 25.0%) (Table 1). The stages for cervical cancer were as follows: 1 stage 1B, 1B2 stage 3B, 3 stage 4A, and 2 stage 4B. There were 11 stage IVA and 2 stage IVB ovarian cancer, 1 stage 3 and 1 stage 4 GTN, and 2 stage

Table 1: Profile of the study population

Parameter	N (%)
Citizenship	
South Africans	41(85%)
Non -south African	7(15%)
Race	
Blacks	44(91.6%)
Whites	3(6.3%)
Colored	1(2.1%)
Indians	0(0%)
Employment status	
Employed	11(22.9)
Unemployed	37(77.1)
Co morbidities	
Hypertension	20(41.7)
HIV	20(41.7)
Diabetes Mellitus (DM)	7 (14.6)
Others (Stroke)	1(2,1)
Cancer type	
Cervical	18 (37.5)
Ovarian	13(27.1)
Endometrial	12 (25.0)
Vulva	3 (6.3)
Gestational Trophoblastic Neoplasia (GTN)	2 (4.2)

Table 2: Medical complications at presentation*

Complication	N (%)
Obstructive uropathy	16 (31.3)
Ascites	11 (21.6)
Pleural effusion	8 (15.7)
Lung metastasis	3 (5.8)
Infection	3 (5.8)
Thromboembolism	3 (5.8)
Liver metastasis	2 (3.9)
Cardiac failure	2 (3.9)
Bone metastasis	2 (3.9)
Brain metastasis	1 (2.0)
Total	51 (100)

(*The number adds up to more than 48 because some patients presented more than one complication).

Table 3: Treatment modality

Type of treatment	N (%)
Palliative	22 (45.8)
Surgery	20 (41.6)
Radiotherapy	5 (10.4)
Chemoradiation	1 (2.1)
Chemotherapy	0(0)
Total	48

Table 4: Complications after surgical treatment

Complication	N (%)
Sepsis	15 (30.6)
Hemorrhage (severe)	14 (28.6)
Vessel injury	5(10.2)
Bladder injury	4(8;2)
Bowel injury	4 (8.2)
Nerve injury	4(8.2)
Ureteric injury	3 (6.1)
Total	49 (100)

1B and 1 stage 3C vulva cancer. All women who died (48, 100%) presented with some form of cancer-related complications on admission (Table 2). The most common complication at presentation was obstructive uropathy (16, 31.3%) followed by ascites (11, 21.6%) and pleural effusion (8, 15.8%), the latter two, occurring exclusively in women who died of ovarian cancer related complications. Of the 16 patients who had obstructive uropathy, 15 (93.8%) presented with advanced, non-operable cervical cancer stages 3B and greater. Table 2.

Most of the patients (22, 45.8%) received palliative treatment for advanced-stage disease, followed by those who were treated with surgery (20, 41.6%) and radiation therapy (5, 10.4%). None of the patients in this cohort received chemotherapy alone. The surgical procedures performed were staging laparotomy for ovarian and endometrial cancer (19, 95%) and radical hysterectomy and lymph node dissection for operable cervical cancer (01, 5%) (Table 3).

A review of the post-treatment complications appears in Table 4. It should be noted that a total of 49 complications were documented for the 20 women who underwent surgical treatment, as some individuals experienced multiple complications hence the numbers are more than 48. Among these, sepsis and bleeding ranked as the most prevalent complications, followed by organ injury, which affected several different organs.

Discussion

Cervical cancer was the primary cause of death in this study, followed by ovarian and endometrial cancers. This aligns with a study conducted in

Malawi⁷ but differs from regional (sub-Saharan Africa) and global reports, which rank cervical cancer as the second most common cause of cancer-related deaths among women, after breast cancer⁸⁻⁹. Breast cancer was not included in this study, as it is within the scope of practice of general surgeons. In both our study and that from Malawi, women presented with advanced disease. The above might be suggesting a lack of effective screening programs. The average age of women who died was 52.7 years. This contrasts with a study from Denmark, which found a 2-3-fold increase in mortality among women aged 70 and above¹⁰. We can conclude from this data that most of the women who died in our study were relatively young compared to other units. The differences in the age group could be due to the differences in access to healthcare services between South Africa and Denmark. However, despite a decline in mortality rates from 1980 to 2012 in the Denmark study, the mortality rate among elderly women remains 3-4 times higher compared to younger women¹⁰. This finding provides further support for our hypothesis that access to healthcare services is a major factor which we postulate, is better for younger women. The majority of women who died had late-stage disease, and obstructive uropathy was the most common medical complication upon admission. This is consistent with a report from Arab countries¹¹. In our study population, the primary cause of death was infection, followed by haemorrhage. While the studies varied in design and sample size, Allanson et al.² and Martin et al.¹³ also reported an increased risk of surgical site sepsis of at least 11% among cancer patients undergoing surgery. This is because cancer patients have compromised immunity. Sepsis (20.8%) and extensive bleeding (7.4%) have been reported as specific mortality-associated complications in cervical cancer patients¹⁴. The reasons why patients in our study experienced complications related to malignancy and treatment at an early age are not clear. We cannot determine if HIV played a role, as complications are known to increase with age, especially in elderly patients¹⁵. The high rate of organ injury emphasizes the importance of referring these patients to specialized centers due to the complexities of cancer surgery.

Conclusion

This is the first attempt to review gynecological-related deaths in our institution. Cervical cancer is the leading cause of cancer deaths in our institution, affecting mainly black African women of the postmenopausal age group. The most common cause of death was sepsis followed by hemorrhage. Most of the women who died had advanced disease suggesting lack of effective screening cancer programs. This study provides limited information on the profile as well as complications and causes of death among women with gynecological cancer and related factors. We recommend the introduction of a routine and more robust audit/review of cancer-related deaths in our institution and units managing women with gynecological cancer worldwide as part of quality improvement strategies.

Limitations

This was a retrospective study with a small sample size conducted in one center. Furthermore, we did not include patients who could have died at home and other demographic factors that could have contributed to development of cancer and death due to lack of information. Despite this limitation, the study highlights the importance and need for a formalized audit of gynecologic oncology-related deaths.

Recommendations

We recommend documenting socio-demographic information for all women with cancer, in addition to medical information, to facilitate audit of gynecological cancer-related deaths. This will ensure that vital information is easily accessible during clinical reviews. We also advocate for regular audits of cancer-related deaths and admissions as a quality enhancement strategy in all gynecological cancer treatment units globally.

References

1. World Health Organization. "Cancer." World Health Organization, 3 Feb. 2022, www.who.int/news-room/fact-sheets/detail/cancer. Accessed: 26 March 2024

2. Sundriyal D, Kumar P, Kumar U and Sehwat A. Chemotherapy in geriatric patients with poor performance status small cell lung cancer: Series from a tertiary care center. *Aging Med* 2022; 5: 138-141.
3. Iyer R, Gentry-Maharaj A., Nordin A, Burnell M, Liston R, Manchanda R, Das N, Desai R, Gornall R, Beardmore-Gray A, Nevin J, Hillaby K, Leeso, S, Linder A, Lopes A, Meechan D, Mould T, Varkey S, Olaitan A, Rufford B and Menon U. Predictors of complications in gynaecological oncological surgery: a prospective multicentre study (UKGOSOC-UK gynaecological oncology surgical outcomes and complications). *British Journal of Cancer* 2015; 112(3): 475-484.
4. Singh K and Gupta B. Surgical Complications in Gynaecological Oncology. In: Singh, K and Gupta, B. (Ed). *Gynecological Oncology*. Cham: Springer, 2022,73-85.
5. Bailie RS, Selvey CE, Bourne D and Bradshaw D. Trends in cervical cancer mortality in South Africa. *Int J Epidemiol* 1996;25(3):488-493.
6. Sankaranarayanan R and Ferlay J. Worldwide burden of gynaecological cancer: the size of the problem. *Best Pract Res Clin Obstet Gynaecol* 2006;20(2):207-225.
7. Taulo F, Malunga E and Ngwira A. (2008). Audit of gynaecological cancers Queen Elizabeth Central Hospital, Blantyre. *Malawi Medical Journal* 2008; 20(4): 140-142.
8. Jedy-Agba E, Joko WY, Liu B, Buziba, N G, Borok M, Korir A, Masamba L, Manraj, SS, Finesse A, Wabinga H, Somdya N and Parkin, D M. Trends in cervical cancer incidence in sub-Saharan Africa. *British Journal of Cancer* 2020; 123(1): 148-154.
9. Shepherd JH. Uterus-conserving surgery for invasive cervical cancer. *Best Practice & Research Clinical Obstetrics & Gynaecology* 2005;19(4): 577-590.
10. Ør Knudsen A, Schledermann D, Nyvang GB, Mogensen O and Jørn Herrstedt J. On behalf of the Academy of Geriatric Cancer Research (AgeCare). Trends in Gynecologic Cancer among Elderly Women in Denmark, 1980-2012. *Acta Oncologica* 2016; 55(suppl 1): 65-73.
11. Ortashi O. Gynecological cancer services in Arab countries: present scenario, problems, and suggested solutions. *Asian Pac J Cancer Prev* 2013;14(3):2147-2150.
12. Allanson ER, Powell A, Bulsara M, Lee HL, Denny L, Leung Y and Cohen P. Morbidity after surgical management of cervical cancer in low- and middle-income countries: A systematic review and meta-analysis. *PLoS One* 2019;14(7): e0217775.
13. Martin AL, Stewart JR, Girithara-Gopalan H, Gaskins JT, McConnell NJ and Medlin EE. Trends and Complications of Vulvar Reconstruction After Vulvectomy: A Study of a Nationwide Cohort. *Int J Gynecol Cancer*. 2018;28(8):1606-1615.
14. Zaczek T and Palczak R. Powikłania po operacjach radykalnych u chorych na raka szyjki macicy [Complications following radical surgery in women with uterine cervix cancer]. *Ginekol Pol* 1978;49(3):223-227.
15. Horvath S, George E and Herzog TJ. Unintended Consequences: Surgical Complications in Gynecologic Cancer. *Women's Health* 2013;9(6):595-604.