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Research Article

# ENDOMETRIAL CANCER IN JAZEERA SPECIALIST HOSPITAL (JSH), MOGADISHU - SOMALIA

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## ABSTRACT

**Aim:** To identify the epidemiological profile and prognostic factors of survival.

**Methods:** From the hospital's Records Department, a list of patients with endometrial cancer from 2010 to 2021 was collected. Only cases that were verified through histopathological testing were included. Those with incomplete medical records or referral cases were not included. For data analysis, both simple and multiple Cox regression methods were employed.

**Results:** There were only 108 instances total, with a mean (SD) age of 62.7 (12.3) years and a Malay ethnicity of 87.0%. 29.1% of cases were grade 1, 43.7% were grade 2, and 27.2% were grade 3. Myometrial invasion (82.2%) and lymphovascular invasion (57.3%) were present in a majority of patients (60.2%) with non-endometrioid types. Age (HR 1.05; 95% CI: 1.02, 1.08; p=0.002) and lymphovascular invasion (HR 2.15; 95% CI: 1.08, 4.29; p=0.030) were the important predictive markers.

**Conclusion:** To lower the chance of death, endometrial cancer patients should receive an earlier diagnosis. The general population should be educated on the disease's symptoms and indicators.

***Keywords:*** *Endometrial Cancer, Mortality, Prognostic Factors*

## INTRODUCTION

The most prevalent gynecological cancer in women is endometrial cancer. It is a significant cause of death in women from cancer [2]. Endometrial cancer is the second most prevalent gynecological cancer worldwide and the sixth most prevalent cancer in women overall. In the developed world, endometrial cancer ranks first among gynecological cancers and second among all female malignancies only behind breast cancer.

Endometrial cancer caused 319,605 new cases and 76,160 deaths globally in 2012, respectively [3]. Over the years 1978 to 2013, the age-standardized incidence and mortality rates of endometrial cancer increased steadily in the majority of developed nations. This trend has been primarily attributed to lifestyle factors (such as the obesity and diabetes epidemic), advancing age, and socioeconomic changes in reproductive factors like parity [4]. A lesser proportion of hysterectomies conducted in adolescence are now being performed as a result of the adoption of uterine-sparing therapies for dysfunctional menstrual hemorrhage. Incidence of endometrial cancer is expected to increase over the next few decades, especially in low- and middle-income nations.

Endometrial cancer risk factors include being obese, having high blood pressure, and having diabetes. Tamoxifen-treated breast cancer patients are more likely to develop endometrial cancer. Every year, a patient using this medication needs to undergo a pelvic exam, and they need to report any vaginal bleeding (other than menstrual blood) right away[6]. Endometrial cancer risk is also higher in women who use estrogen alone. According to projections by the Surveillance, Epidemiology and End Results (SEER) Program of the National Cancer Institute, approximately 66,200 women in the United States are anticipated to be diagnosed with endometrial cancer, and close to 13,330 will pass away from the condition in 2023. The survival rate after five years is 81.3 percent[5].

According to estimates, 46,470 American women will receive a cancer diagnosis in 2011 (6% of all new cancer cases) [7,8,9]. In other words, the lifetime risk of endometrial cancer for a woman born in the United States in 2011 is 1 in 39. More than 287,000 women are expected to receive the disease's diagnosis globally in 2011 [10,11]. Between 1960 and 1975, endometrial cancer cases significantly increased in North America. This has been largely perceived as a result of postmenopausal women's usage of exogenous estrogen for hormone replacement therapy, which has increased significantly.

Endometrial cancer was ranked as the 20th most common cancer in Africa in 2018 by the IACR[12]. This lifetime risk, however, may differ between age and ethnic groups. For instance, the National Cancer Registry (NCR) in South Africa determines that women have a 1 in 145 lifetime risk of developing endometrial cancer. However, the risk varies depending on ethnicity[15]. Despite Africa's cancer surveillance statistics, it is difficult to prevent under-reporting of cancer cases from both public and private hospitals. According to South African estimates of cancer incidence, private hospitals have underreported cancer cases by 28% as a result of data withholding. These figures need to be quantified to accurately reflect the country's overall cancer burden. Therefore, improved cancer surveillance in both the private and public

hospitals will be advantageous for accurate reporting of cancer incidence rates [13].

According to the Ministry of Health (2020) Report, 4.1% of all female cancer diagnoses in 2017 were endometrial carcinoma in Somalia [20]. Endometrial cancer is the eighth most prevalent disease, according to the Somalia Cancer Report 2020. In order to provide the epidemiological evaluation and predictive determinants of survival, this study is a review of all endometrial cancer cases admitted to Jazeera Specialist Hospital in Mogadishu. my goal was to fill up the knowledge gaps about endometrial cancer because there hasn't been much research done on this condition in Somalia up to now. I intend to create focused strategies and initiatives for the early care of endometrial cancer in Somalia by understanding the epidemiological profile and prognostic markers for survival.

## Aim of the Study:

The aim of this study was to identify the epidemiological profile and prognostic factors of survival.

# MATERIALS AND METHODS

## Study Area:

The Jazeera Specialist Hospital, which is situated in Mogadishu, the capital of Somalia, was the site of this study. Established in 2014, the acclaimed Jazeera Specialist Hospital (JSH) is a Public Private Hospital. The hospital is conveniently placed close to the Florence Junction in the city's center of Mogadishu. JSH is the primary source of cancer care services in the region and offers comprehensive healthcare services delivered by multi-professional resident doctors, visiting doctors, and other specialists from across the world.

## Data Source:

The Department of Records provided a list of endometrial cancer patients who were admitted to Jazeera Specialist Hospital between 2010 and 2021. I only considered endometrial cancer cases that have been verified by histopathological testing at Jazeera Specialist Hospital. Those with deficient medical records and referral cases were disqualified.

## Data Collection Methods:

Age, race, diabetic status, menopausal status, type of cancer, grade of cancer, stage of cancer, parity, presence of myometrial invasion, and presence of lymphovascular invasion were all retrieved using a standard checklist. I also recorded the dates of the patient's diagnosis, last visit, and death in addition to the dates of the patient's initial endometrial cancer symptoms. The Research Ethics Committee has approved this study as ethical.

## Data Analysis:

The Statistical Package for the Social Science (SPSS) version 22.0 was used for data entry and analysis. I looked at data distributions and frequencies (%). While categorical data were expressed as frequency and percentage, all continuous variables were expressed as mean and standard deviation (SD) or median and interquartile range (IQR). The prognostic factors were discovered using both simple and

multivariate cox regression. The results are shown as a hazard ratio (HR), a 95% confidence interval (CI), and a p-value. The significance threshold was set at 0.05.

## RESULTS AND DISCUSSION

### Results:

The list from the Jazeera Specialist Hospital's Records Department contained 121 cases of endometrial cancer. Only 108 individuals in total were included in the research because 13 endometrial cancer patients' records were missing. Patients with endometrial cancer tended to be of Malay ethnicity (87.0%). Patients with endometrial cancer were 62.7 years (12.3) old on average (SD). The clinical characteristics of endometrial cancer cases in Jazeera Specialist Hospital are shown in Table 1. Regarding the risk variables, 39.8% of people had diabetes, 63.4% were nulliparous, and 67.6% experienced menopause.

| | | **Frequency (%)** |
|---|---|---|
| Diabetes Status | | |
| | No | 65 (60.2) |
| | Yes | 43 (39.8) |
| Menopausal Status | | |
| | Premenopausal | 35 (32.4) |
| | Postmenopausal | 73 (67.6) |
| Parity | | |
| | Multiparous | 37 (36.6) |
| | Nulliparous | 63 (63.4) |
| Type of Cancer | | |
| | Endometrioid | 43 (39.8) |
| | Non-Endometrioid | 65 (60.2) |
| Grade of Cancer | | |
| | 1 | 30 (29.1) |
| | 2 | 45 (43.7) |
| | 3 | 28 (27.2) |
| Stage of Cancer | | |
| | I | 25 (24.5) |
| | II | 11 (10.8) |
| | III | 27 (26.5) |
| | IV | 49 (38.2) |
| Myometrial Invasion | | |
| | No | 18 (17.8) |
| | Yes | 83 (82.2) |

| | | |
|---|---|---|
| Lymphovascular Invasion | | |
| | No | 44 (42.7) |
| | Yes | 59 (57.3) |

**Table 1:** Clinical Features of Endometrial Cancer Cases in Jazeera Specialist Hospital (n=108)

Only 39.8% of patients had endometrial cancer of the endometrioid kind, while 60.2% of patients had non-endometrioid endometrial cancer. Grade 1 (29.1%), Grade 2 (43.7%), and Grade 3 (27.2%) all had tumors. Sixty-four percent of endometrial cancer patients that were seen were in stages III and IV. Eighty-two percent of patients (82.2%) had lymphovascular invasions, while 57.3% had myometrial invasions.

| | | **Simple Cox Regression** | | | **Multiple Cox Regression** | |
|---|---|---|---|---|---|---|
| | b | **Crude Hazards Ratio (95% CI)** | **P-value** | **b** | **Adjusted Hazard Ratio (95% CI)** | **P-value** |
| Age | 0.03 | 1.03 (1.01, 1.06) | 0.013 | 0.05 | 1.05 (1.02, 1.08) | 0.002 |
| Lymphovascular Invasion | | | | | | |
| No | 0 | 1 | - | 0 | 1 | |
| Yes | 0.58 | 1.79 (1.01, 3.15) | 0.044 | 0.76 | 2.15 (1.08, 4.29) | 0.03 |

**Table 2:** Prognostic Factors of Endometrial Cancer Survival in Jazeera Specialist Hospital (n=108)

Age and lymphovascular invasion were the important predictive markers for endometrial cancer mortality at Jazeera Specialist Hospital (HR 1.05; 95% CI: 1.02, 1.08; p=0.002) and (HR 2.15; 95% CI: 1.08, 4.29; p=0.030).

## Discussion:

Age and lymphovascular invasion were the two main predictive markers for endometrial cancer survival in my study. With the aging of the female population, endometrial cancer incidence will rise. In older women, this cancer is more aggressive but frequently untreated [21]. In older individuals, the prognosis for endometrial cancer is worse. Similar to my findings, it mostly happens after the menopause. When they were diagnosed with endometrial cancer, the majority of my patients were in menopause.

Numerous neoplasms' propensity to progress have been linked to the lymphovascular invasion [25]. The pathological finding of lymphovascular space invasion, which is directly associated with lymphatic tumor metastasis, is described as the presence of tumor cells inside endothelium-lined channels of uterine tissues, outside the primary tumor [4]. Additionally, it was discovered that endometrial cancer patients' shorter survival and lymph node metastases were both predicted by the existence of lymphovascular space invasion [4].

It is widely recognized that diabetes mellitus increases the risk of endometrial cancer [5]. Diabetes mellitus was not found to be a major risk factor for endometrial cancer mortality in my investigation.

However, the epidemiological investigation revealed that the death rate for cancer patients with pre-existing diabetes is slightly higher than that of patients without diabetes [7]. my endometrial cancer patients had diabetes in about 40.5% of cases. According to a study by [21], compared to other female cancers such ovarian cancer, breast carcinoma, and cervical cancer [2], endometrial carcinoma patients had the greatest percentage of diabetes patients. Patients with diabetes mellitus type 2 had an elevated risk of all malignancies, according to a sizable prospective study conducted in Japan [8]. Diabetes mellitus is highly linked to endometrial cancer, according to meta-analysis studies [9]. According to studies, patients with diabetes mellitus have an endometrial cancer risk that is 2-3 times higher than that of the general population [16] and more than six times higher when obesity is present [9].

By raising IGF-1 levels, hyperinsulinemia in diabetes individuals encourages breast carcinogenesis [20]. IGF-1 causes a mitogenic response by promoting the synthesis of Deoxyribonucleic Acid (DNA) and cyclin D1. Consequently, the advancement of the cell cycle from the G1 to the S phase is accelerated by cyclin D1. In mutant cells, IGF-1 also inhibits apoptosis to promote cell cycle progression [23]. IGF-1 levels will rise in people with diabetes mellitus who have persistent hyperinsulinemia and hyperglycemia. By competing with IGFBP-rP1 for binding to the insulin receptor, IGFBP-rP1 also causes insulin resistance in humans. For the insulin receptor, IGFBP-rP1 exhibits a greater affinity [17].

One of the measures that should be implemented in diabetic clinics and diabetic screening in gynecological clinics is cancer screening. These techniques may also reduce the risk of developing cancer [24]. By 2030, it is predicted that Somalia would have 1.8 million diabetes patients, with Mogadishu having the highest prevalence [13]. Epithelial cancer screening should be rigorous in a population where diabetes is common. The follow-up protocol for diabetic patients should include screening for these malignancies, and gynecologist clinics should check the diabetes status of every woman they encounter.

Death rates from endometrial cancer were shown to be higher when FIGO stage was higher [12]. In my study, 22.5% of tumors were in stage I, 10.8% in stage II, 24.3% in stage III, and 36.0% in stage IV. Due to painful symptoms such prevaginal and postmenopausal bleeding, the majority of endometrial cancer patients typically seek early medical therapy in the early stages of the disease [15]. Due to various factors, including recommendations from family and friends, a sense of benefit and compatibility, the trustworthiness of the healer, and reluctance to use western medicine, traditional healing is a popular practice among cancer patients in Somalia.

Visiting traditional healers is frequently blamed for delaying or interrupting medical treatment. Patients expect traditional healers to cure their bodily ailments when they visit them. While some people already know they have cancer or fear they do, others may be experiencing distressing physical symptoms without a cancer diagnosis. The patients miss their appointment because they are looking for traditional healers [11].

Concerns about treatments, managing side effects, hospital stays, and medical expenditures are another factor in missed follow-up. Additionally, patients may fret about providing for their families, keeping

their jobs, or carrying on with daily activities [9]. After being told they have endometrial cancer, the patients need to have monthly exams. In order to make sure that any changes in health are observed and treated as necessary, checkups might be helpful. A pelvic exam, laboratory testing, a chest x-ray, a computerized tomography scan, or magnetic resonance imaging may be performed as part of a checkup.

Hormone-related cancers include endometrial cancer. those with non-endometrioid kinds had a greater mortality rate from endometrial cancer than those with endometrioid types [12]. Additionally, my study demonstrated that patients with non-endometrioid endometrial cancer had a higher mortality rate than patients with endometrioid endometrial cancer. Excess estrogen and endometrial hyperplasia are intimately associated to endometrioid form of cancer. Contrarily, non-endometrioid cancers arise in atrophic endometrium and are not linked to estrogenic causes [6]. According to a Japanese study, estrodial promotes the growth of endometrial cancer cells through the mapk3/1 pathway's autocrine activation of IGF-1 [14]. IGF-2 and IGF-1R expression was substantially higher in stage III and stage IV malignant tissue compared to stage I and stage II tumors, while it was much lower in normal or hyperplastic endometrium [20].

More over 50% of endometrial cancer recurrences and mortality are caused by non-endometrioid endometrial cancers, which account for around 10% of all endometrial malignancies [3]. Papillary serous (10%) is the most typical non-endometrioid histology, followed by clear cell (2%–4%), mucinous (0.6%–5%), and squamous cell (0.1%–0.5%) [19]. With patients frequently having stage II or stage III disease, deep myometrial invasion (between 40% and 50%), and frequent vascular invasion, serous carcinoma is an exceptionally aggressive form.

A higher grade of endometrial cancer was associated with a higher probability of death [12]. According to the study by [15], individuals with grade 3 adenocarcinomas had considerably poorer survival rates than those with well-differentiated (grade 1) and moderately differentiated (grade 2) adenocarcinomas at all clinical stages. 4.7%, 6.8%, and 18.2% of cases of grade 1, grade 2, and grade 3 endometrial cancer within the first two years, respectively [17]

The research revealed that 57.3% of patients had a lymphovascular invasion and that the majority of patients (82.2%) had a myometrial invasion [18]. Additionally, one of the important predictive markers for endometrial cancer mortality in Jazeera Specialist Hospital was the presence of lymphovascular invasion. The extent of myometrial invasion is substantially correlated with survival in endometrial cancer patients. The middle layer of the uterine wall known as the myometrium is where cancer has invaded. The progression of malignant tumors is thought to need lymphovascular invasion, which is regarded as an early stage in the metastatic process [19].

With more full-term births, the risk of endometrial cancer declines [22]. 63.4% of endometrial cancer cases in my study were nulliparous. Endometrial cancer is 20% to 40% less likely to occur in parous women than nulliparous women [5,13]. Although the precise process by which parity lowers risk is unknown, various theories have been put forth. Increased progesterone levels during pregnancy may prevent estrogen-driven endometrial cell growth and encourage endometrial cell differentiation and death [10]. The uterine

endometrial lining may lose precancerous or cancerous cells as a result of vaginal delivery or the uterus' postpartum involution [1].

## CONCLUSION

Finally, early detection will lower the number of endometrial cancer patients who pass away. Additionally, family members and friends should support and uplift those who are suffering from endometrial cancer. The symptoms, risks, and contributing factors of endometrial cancer mortality should be widely publicized, not only through print media but also through television, radio, and occasionally active online networks. To educate the public more about endometrial cancer, the endometrial cancer health program should be conducted in public spaces.

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