Cancer of the Uterus

Introduction

The uterus or womb is part of the female reproductive system.

In humans one end of the cervix opens into the vagina, while the other is connected to both fallopian tubes. During pregnancy, the foetus develops completely within the uterus. In English, the term uterus is used consistently within the medical and related professions, while the Germanic-derived term womb is more common in everyday usage.

Cancer of the Uterus

Cancer of the uterus will refer to endometrial cancer or uterine cancer unless indicated otherwise. Endometrial cancer is a disease in which malignant (cancer) cells form in the tissues of the endometrium, the lining inside the uterus. Cancer of the endometrium is different from cancer of the muscle of the uterus, which is called sarcoma of the uterus.

Cancer is a disease in which cells in the body grow and multiply out of control. Cancer is always named for the part of the body where it starts, even if it spreads to other body parts later. When cancer starts in the uterus, it is called uterine cancer or cancer of the uterus. When uterine cancer is found early, treatment is most effective.
Incidence of Cancer of the Uterus in South Africa

According to the National Cancer Registry (2014) the following number of cancer of the uterus cases was histologically diagnosed in South Africa during 2014:

<table>
<thead>
<tr>
<th>Group</th>
<th>No of Cases</th>
<th>Lifetime Risk</th>
<th>Percentage of All Cancers</th>
</tr>
</thead>
<tbody>
<tr>
<td>All females</td>
<td>1 256</td>
<td>1:195</td>
<td>3,32%</td>
</tr>
<tr>
<td>Asian females</td>
<td>88</td>
<td>1:69</td>
<td>7,43%</td>
</tr>
<tr>
<td>Black females</td>
<td>731</td>
<td>1:165</td>
<td>4,54%</td>
</tr>
<tr>
<td>Coloured females</td>
<td>118</td>
<td>1:127</td>
<td>2,89%</td>
</tr>
<tr>
<td>White females</td>
<td>319</td>
<td>1:114</td>
<td>1,94%</td>
</tr>
</tbody>
</table>

The frequency of histologically diagnosed cases of cancer of the uterus in South Africa for 2014 was as follows (National Cancer Registry, 2014):

<table>
<thead>
<tr>
<th>Group - Females 2014</th>
<th>0 – 19 Years</th>
<th>20 – 29 Years</th>
<th>30 – 39 Years</th>
<th>40 – 49 Years</th>
<th>50 – 59 Years</th>
<th>60 – 69 Years</th>
<th>70 – 79 Years</th>
<th>80+ Years</th>
</tr>
</thead>
<tbody>
<tr>
<td>All females</td>
<td>1</td>
<td>2</td>
<td>21</td>
<td>79</td>
<td>244</td>
<td>474</td>
<td>308</td>
<td>91</td>
</tr>
<tr>
<td>Asian females</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>8</td>
<td>27</td>
<td>33</td>
<td>15</td>
<td>2</td>
</tr>
<tr>
<td>Black females</td>
<td>1</td>
<td>2</td>
<td>10</td>
<td>42</td>
<td>113</td>
<td>275</td>
<td>192</td>
<td>55</td>
</tr>
<tr>
<td>Coloured females</td>
<td>0</td>
<td>0</td>
<td>3</td>
<td>3</td>
<td>24</td>
<td>54</td>
<td>25</td>
<td>8</td>
</tr>
<tr>
<td>White females</td>
<td>0</td>
<td>0</td>
<td>7</td>
<td>24</td>
<td>76</td>
<td>110</td>
<td>70</td>
<td>26</td>
</tr>
</tbody>
</table>

N.B. In the event that the totals in any of the above tables do not tally, this may be the result of uncertainties as to the age, race or sex of the individual. The totals for ‘all males’ and ‘all females’, however, always reflect the correct totals.

Causes of Cancer of the Uterus

Although the exact cause of endometrial cancer is unknown, increased levels of oestrogen appear to play a role. Oestrogen helps stimulate the build-up of the lining of the uterus. Studies have shown that high levels of oestrogen result in excessive endometrial growth and cancer.

Most cases of endometrial cancer occur between the ages of 60 and 70 years, but a few cases may occur before age 40.

The following may increases the risk of endometrial cancer:

- diabetes
- oestrogen replacement therapy without the use of progesterone
- history of endometrial polyps
- infertility (inability to become pregnant)
- infrequent periods
- Tamoxifen, a drug for breast cancer treatment
- never being pregnant
- obesity
- polycystic ovarian syndrome (PCOS)
- starting menstruation at an early age (before age 12)
- starting menopause after age 50
An ongoing debate over the last two decades has focused on whether fertility treatment in women may lead to an increased risk of developing uterine cancer over a period of time. Uterine cancer (including mainly endometrial carcinoma and the less common uterine sarcoma) is the commonest reproductive tract cancer and the fourth commonest cancer in women. The risk for the development of uterine and in particular endometrial cancer posed by infertility and an unopposed oestrogen state is widely recognised. The present analysis aimed to perceive whether standard fertility drugs were also a risk to future uterine cancer development. The treatment does increase the concentrations of unopposed oestrogen for a short periods of time but if successful leads to fertility. This meta-analysis points to a non-deleterious effect of fertility drugs towards the development of uterine cancer, a conclusion strongly supported by our sub-group analysis.”

“This study compares breast cancer survivors without a secondary diagnosis of uterine cancer (BC) to breast cancer survivors with a diagnosis of uterine cancer (BUC) to determine clinical characteristics that increase the odds of developing uterine cancer. Hypertension, gallbladder disease, and thyroid disease in breast cancer survivors increase the odds of developing uterine cancer. Breast cancer survivors also express significant interest in potential serum tests to assess the risk of developing uterine cancer.”

BACKGROUND: Whether BRCA1 and BRCA2 mutation carriers have a clinically relevant elevated risk of uterine cancerhas implications for risk-reducing surgery.
Aim: This multicentre, prospective cohort study assessed uterine cancer risk for mutation carriers compared with the general population.
METHODS: Eligible mutation carriers were enrolled in the Kathleen Cuningham Foundation Consortium for Research into Familial Breast Cancer (kConFab) cohort study, had a uterus present and no history of uterine cancer at cohort entry. Epidemiological, lifestyle and clinical data were collected at cohort entry and updated three-yearly. Cancer events were verified using pathology reports. Follow-up was censored at death or last contact. Relative risk of uterine cancer was estimated using the standardised incidence ratio (SIR), with the expected number of cases determined using population-based data for Australia.
RESULTS: Of 1,111 mutation carriers in kConFab, 283 were excluded due to prior hysterectomy (N = 278), prior uterine cancer (N = 2) or being non-residents (N = 3). After a median follow-up of 9.0 years, five incident uterine cancers were reported in the 828 eligible women (419 had prior breast cancer and 160 had prior tamoxifen use), compared to 2.04 expected (SIR = 2.45; 95% confidence interval [Cl]: 0.80-5.72; P = 0.11). In 438 BRCA1 mutation carriers and 390 BRCA2 mutation carriers, three and two incident cases of uterine cancer were reported, respectively, compared to 1.04 expected (SIR = 2.87; 95% CI: 0.59-8.43; P = 0.18) and 0.99 expected (SIR = 2.01; 95% CI: 0.24-7.30; P = 0.52), respectively. All cases were endometrioid subtype, International Federation of Gynaecology and Obstetrics stage I-II disease. No serous uterine cancers were reported.
CONCLUSIONS: Our findings are consistent with those from most other reports and do not support routine risk-reducing hysterectomy for BRCA1 and BRCA2 mutation carriers.
Sign and Symptoms of Cancer of the Uterus
Endometrial Cancer may cause abnormal vaginal discharge or bleeding. Abnormal bleeding is mostly associated with high volumes or when it happens, such as after someone has gone through menopause, between periods, or any other bleeding that is longer or heavier than is normal. It may also cause other symptoms, such as pain or a feeling of pressure in the pelvis.

<table>
<thead>
<tr>
<th>Gynaecological Cancer Symptoms</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Symptoms</strong></td>
</tr>
<tr>
<td>Abnormal vaginal bleeding or discharge</td>
</tr>
<tr>
<td>Pelvic pain or pressure</td>
</tr>
<tr>
<td>Abdominal or back pain</td>
</tr>
<tr>
<td>Bloating</td>
</tr>
<tr>
<td>Changes in bathroom habits</td>
</tr>
<tr>
<td>Itching or burning of the vulva</td>
</tr>
<tr>
<td>Changes in vulva colour or skin, such as a rash, sores, or warts</td>
</tr>
</tbody>
</table>

Diagnosis of Cancer of the Uterus
If a doctor suspects that someone may have cancer of the uterus, he/she will most probably do a biopsy. The doctor will decide the best way to do the biopsy. Methods include:

**Endometrial biopsy:** A thin, flexible tube is inserted through the cervix and into the uterus. Using suction, a small amount of tissue is removed through the tube.

**Dilation and curettage (D&C):** If an endometrial biopsy does not provide enough tissue or if a uterine cancer diagnosis is not definite, a D&C may be done. The cervix is dilated (enlarged) with a series of increasingly larger metal rods. A tool called a curette then is used to take cells from the uterus lining.

**Hysteroscopy:** A thin, telescope-like device with a light (hysteroscope) is put into the uterus through the vagina. The doctor then looks at the uterus and the openings to the fallopian tubes. Small pieces of tissue can be removed. Hysteroscopy may be done with a D&C.

One or more of the following tests may be used to find out if you have uterine cancer and if it has spread. These tests also may be used to find out if treatment is working.

**Surgery,** which may include:
- hysterectomy: removal of the uterus
• bilateral salpingo-oophorectomy: removal of the uterus, ovaries and Fallopian tubes
• lymph node dissection: removal of lymph nodes in the pelvis and lower abdomen

**Imaging tests**, which may include:
• ultrasound
• computed axial tomography scans (CT or CAT)
• magnetic resonance imaging scans (MRI)
• positron emission tomography scans (PET)
• chest X-ray
• transvaginal ultrasound examination

**Blood tests**, which may include:
• complete blood count (CBC) – also known as full blood count (FBC)
• CA 125: Uterine cancers sometimes release this substance into the blood.

CA 125 test measures levels of CA 125. High levels of CA 125 may indicate that the cancer has spread beyond the uterus or come back after treatment (MD Anderson Cancer Centre; National Cancer Institute).

**Recurrent Uterine Cancer**
Recurrent cancer is cancer that comes back after treatment. Uterine cancer may come back in the uterus, pelvis, lymph nodes of the abdomen, or another part of the body. Approximately 70% of recurrent uterine cancer happens within three years of initial treatment. Some symptoms of recurrent cancer are similar to those experienced when the disease was first diagnosed:

• vaginal bleeding or discharge
• pain in the pelvic area, abdomen, or back of the legs
• difficulty or pain when urinating
• weight loss
• chronic cough

Should the cancer of the uterus spread to other parts of the body, it will most probably spread as indicated below:

<table>
<thead>
<tr>
<th>Cancer Type</th>
<th>Main Sites of Metastasis (Spread)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bladder</td>
<td>Bone, liver, lung</td>
</tr>
<tr>
<td>Breast</td>
<td>Bone, brain, liver, lung</td>
</tr>
<tr>
<td>Ovary</td>
<td>Liver, lung, peritoneum (lining of abdomen)</td>
</tr>
<tr>
<td>Pancreas</td>
<td>Liver, lung, peritoneum (lining of abdomen)</td>
</tr>
<tr>
<td>Uterus</td>
<td>Bones, liver, lung, peritoneum (lining of abdomen), vagina</td>
</tr>
</tbody>
</table>
Treatment of Cancer of the Uterus

Uterine cancer is usually treated by one or a combination of treatments:

**Surgery** - surgery refers to the removal of the tumour and surrounding tissue during an operation. It is typically the first treatment used for uterine cancer. A surgical oncologist is a doctor who specialises in treating cancer using surgery.

**Radiation therapy** - radiation therapy is the use of high-energy x-rays or other particles to kill cancer cells. A doctor who specializes in giving radiation therapy to treat cancer is called a radiation oncologist. A radiation therapy regimen (schedule) usually consists of a specific number of treatments given over a set period of time. The most common type of radiation treatment is called external-beam radiation therapy, which is radiation given from a machine outside the body.


“The purpose of the research was to evaluate the safety and efficacy of radiation therapy for stage IVA uterine cervical cancer and to identify an optimal radiation regimen. Radiation therapy is safe and effective for treatment of stage IVA uterine cervical cancer. The reduced radiation dose per fraction may contribute to the prevention of vesicovaginal fistula formation.”

**Brachytherapy** (a form of radiation therapy where radioactive seeds are inserted) - for women with surgically staged 1A or 1B endometrial adenocarcinoma, use of vaginal brachytherapy (VB) is associated with a reduction in mortality.

**Chemotherapy** - chemotherapy is the use of drugs to kill cancer cells, usually by stopping the cancer cells’ ability to grow and divide. Systemic chemotherapy is delivered through the bloodstream to reach cancer cells throughout the body. Chemotherapy is given by a medical oncologist, a doctor who specializes in treating cancer with medication.

**Hormone therapy** - hormone therapy is used to slow the growth of uterine cancer cells. Hormone therapy for uterine cancer involves the sex hormone progesterone, given in a pill form.

**Palliative/supportive care** - cancer and its treatment often cause side effects. In addition to treatment to slow, stop, or eliminate the cancer, an important part of cancer care is relieving a person’s symptoms and side effects. This approach is called palliative or supportive care, and it includes supporting the patient with his or her physical, emotional, and social needs.

**Recurrent uterine cancer** - remission is when cancer cannot be detected in the body and there are no symptoms. This may also be called ‘no evidence of disease’ or NED.

**Metastatic Uterine Cancer**

If cancer has spread to another location in the body, it is called metastatic cancer. Patients with this diagnosis are encouraged to talk with doctors who are experienced in treating this stage of cancer, as there may be different opinions regarding the best treatment plan.
About Clinical Trials
Clinical trials are research studies that involve people. They are conducted under controlled conditions. Only about 10% of all drugs started in human clinical trials become an approved drug.

Clinical trials include:
- Trials to test effectiveness of new treatments
- Trials to test new ways of using current treatments
- Tests new interventions that may lower the risk of developing certain types of cancers
- Tests to find new ways of screening for cancer

The South African National Clinical Trials Register provides the public with updated information on clinical trials on human participants being conducted in South Africa. The Register provides information on the purpose of the clinical trial; who can participate, where the trial is located, and contact details.

For additional information, please visit: www.sanctr.gov.za/

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Sources and References Consulted or Utilised

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Centers for Disease Control and Prevention
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Mayo Clinic 
http://www.mayoclinic.com/health/endometrial-cancer/DS00306/DSECTION=causes

MD Anderson Cancer Centre  

National Cancer Institute 
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