

Epidemiology of seven years female's genital tract malignancies in Basra

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Abstract:

This study investigates the incidence and characteristics of female genital tract malignancies in Basra, Iraq, from 2005 to 2011, amidst a backdrop of rising cancer rates in developing countries. Analyzing data from the Basra Cancer Registration Unit, we identified 487 cases (4.17% of total registered cancers) of female genital cancers, primarily affecting women aged 40 and older. The average annual incidence rate was 6.04 per 100,000 females, with uterine cancer being the most prevalent (3.46/100,000), followed by ovarian cancer (2.39/100,000). Notably, 70.8% of cases occurred in women over 40 years, challenging existing international trends where cervical cancer poses a higher risk in younger populations. Limitations in data completeness, especially concerning histopathology, emphasize the need for enhanced cancer registration systems. Our findings underscore the necessity for targeted interventions and further research to distinguish cancer types and their epidemiological patterns in the region. Feel free to modify any part to better match your intentions!

1. Introduction:

Cancer, once viewed as primarily a disease of industrialized nations, is becoming a growing concern in developing countries. This shift is attributed to increased life expectancy and changes in lifestyle (1). Female genital tract cancers are among the most common malignancies affecting women worldwide, contributing significantly to cancer morbidity and mortality (2). The major types of female genital cancers include cervical, ovarian, and endometrial carcinomas, with rarer tumors affecting the vagina, vulva, and fallopian tubes (3). Although organized screening programs have reduced the incidence and mortality of genital cancers in developed countries, women in many developing regions, including Basra, have not fully benefited from these interventions, leading to persistently high cancer rates (4). The distribution of these cancers varies significantly based on ethnicity, environment, and geographical factors, with differences in both incidence and presentation across regions (5).

Anatomy of the Female Genital Tract:

The female genital tract comprises the ovaries, fallopian tubes, uterus, vagina, and external genitalia.

- Uterus: Located in the pelvis, the uterus is a pear-shaped muscular organ divided into the upper muscular corpus and the lower fibrous cervix. The endometrial cavity,

where the embryo implants, is surrounded by a thick muscular wall, and the uterine lining varies in thickness throughout the menstrual cycle (6).

- Cervix: The cervix is the narrow, lower portion of the uterus that extends into the vagina. It has an external opening, or os, which allows the passage of sperm and menstrual blood. The transformation zone, where squamous and columnar epithelial cells meet, is prone to the development of cervical neoplasms (7).
- Fallopian Tubes: These muscular structures transport sperm to the egg and the fertilized egg to the uterus. The diameter of the tubes varies, with narrower sections acting as potential sites for blockage (8).
- Ovaries: The ovaries are small, oval organs responsible for producing eggs and hormones. Their size and appearance change throughout a woman's reproductive life (9).
- Vagina: A fibro-muscular tube that connects the uterus to the external genitalia, the vagina plays a role in both reproduction and the menstrual cycle (10).
- External Genitalia: Known collectively as the vulva, these include the mons pubis, labia majora and minora, clitoris, and vestibule (11).

Epidemiology of Female Genital Tract Cancers:

In the United States, the incidence of female genital tract cancers has been rising, with uterine corpus cancers being the most common (12). Ovarian and cervical cancers follow, with lower rates of vaginal and vulvar cancers (13). In China, a study showed a marked increase in cervical cancer cases over the last two decades, while the incidence of other gynecologic cancers remained relatively stable (14). In Basra, Iraq, the incidence of genital tract cancers has increased consistently, with ovarian cancer being the most prevalent, followed by cervical cancer. A study in the Al-Fallujah region showed that ovarian and uterine cancers accounted for 10.4% of female cancers in 2011 (15). Globally, cervical cancer remains the third most common cancer in women, with the highest incidence in developing regions (16). Endometrial cancer is most common in developed regions, with North America and Western Europe showing the highest rates (17). Ovarian cancer, often referred to as a “silent killer,” has a higher incidence in developed regions but remains a leading cause of cancer death globally (18).

2. Age distribution

The age of female genital tract malignant cases resident in Basrah at the time of registration, ranged between 2 and 95 years, with a mean age of 46.63±15.47years. Although these malignancies affected all age groups, the majority 345 (70.8%) of cases were 40 years or older with 113 (23.3%) were 60 years or older. Only 5(1%) were under 15 years of age.

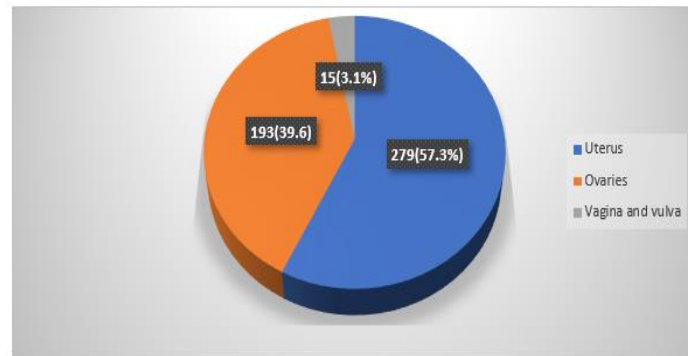
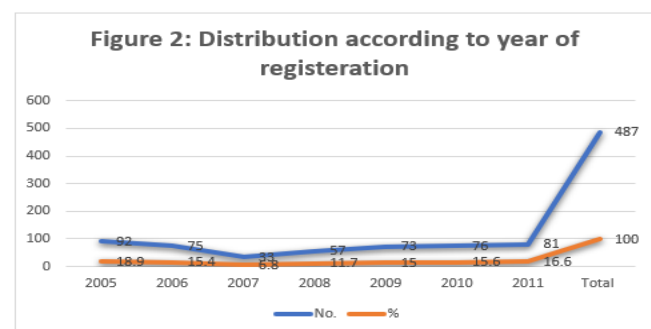
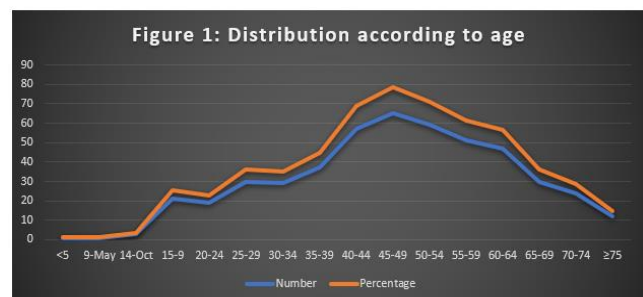


Figure 3-A: Distribution according to the site

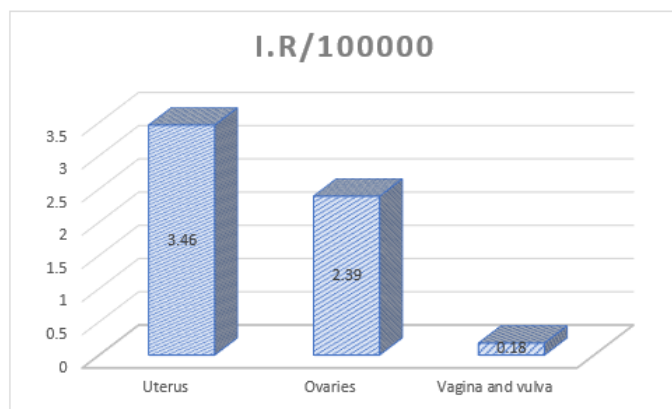


Figure 3-B: Distribution of tumour sites according to their incidences.

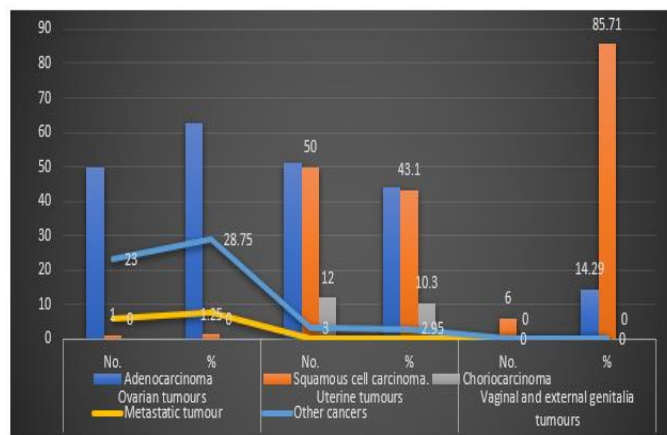


Figure 4: Distribution according of different sites according to their histopathology.

1. Discussion:

Limitations of the Study: The data used in this study, although derived from routine cancer registration efforts, cannot be considered entirely complete or fully accurate (19). Despite the Basra Cancer Registration Unit's significant efforts to enhance cancer reporting, some data, particularly related to histopathology and residence, remained incomplete or erroneous (20). Therefore, caution is advised when interpreting results concerning these variables. Additionally, uterine cancers were not classified into cervical and endometrial types, limiting the ability to analyze them separately, and

ovarian cancers were grouped with the rare fallopian tube cancers (21).

Female Genital Tract Malignancies: This record-based study aimed to estimate the incidence and analyze the patterns of female genital cancers in Basra between 2005 and 2011. Of the 11,679 total registered cancer cases, 487 (4.17%) were female genital tract cancers, a proportion lower than previous Basra studies and studies from other regions (22). This variation may reflect differences in population demographics, data sources, or true disparities in cancer risks (23).

Geographic Distribution: The majority of cases were from Basra city center, followed by the northern areas, likely due to higher population densities. However, this distribution may also indicate real geographic differences in cancer risk, as previously observed for musculoskeletal cancers in the region (24).

Incidence of Female Genital Cancers: The average annual incidence rate of female genital cancers was 6.04 per 100,000 females, with uterine cancer being the most common (3.46/100,000), followed by ovarian cancer (2.39/100,000) (25). This aligns with findings from other Arab countries but contrasts with earlier Basra studies where ovarian cancer was more prevalent (26). The highest incidence was recorded in 2005, likely due to improved cancer registration efforts that year (27).

Age-Specific Trends: Most cases (70.8%) occurred in women aged 40 or older, possibly linked to hormonal changes around menopause (28). Ovarian cancers were more common in younger women compared to uterine cancers, differing from international trends (29). Although cervical cancer data were incomplete, studies suggest that younger women are at higher risk due to earlier exposure to HPV (30). **Histopathological Findings:** Primary cancers were more frequent than secondary metastases, with adenocarcinoma and squamous cell carcinoma being the most common histopathological types, similar to findings in other studies (31).

2. Conclusions

1. Female genital tract cancers accounted for 4.17% of all registered cancers in Basra between 2005 and 2011, a lower proportion than in other regions.
2. These cancers primarily affected women aged 40 and above.

3. The average annual incidence rate was 6.04 per 100,000, with uterine cancer more common than ovarian cancer.
4. Younger women had higher rates of ovarian cancer, contrary to findings in other studies.
5. The highest incidence was observed in 2005, likely due to enhanced cancer registration.
6. Incidence rates increased consistently with age.
7. Adenocarcinoma was the most common histopathological type.

Recommendations:

1. Enhance cancer case registration systems to ensure more accurate and reliable data.
2. Conduct further studies to distinguish between cervical and endometrial cancers and assess their characteristics.
3. Investigate ovarian malignancies in detail, especially concerning age-specific trends.

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