ENDOMETRIAL CARCINOMA

A Comparative Multicentre Epidemiologic and Pathologic Study

Thesis

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ABSTRACT

This study aims at registering the incidence of endometrial carcinoma cases received by the pathology departments in El Kasr El Aini Hospital as well as the New Kasr El Aini Teaching Hospital. 64 cases were collected from both hospitals. The incidence of endometrial carcinoma in Kasr El Aini Hospital was found to be 1.25 /1000, while in New Kasr El Aini Teaching Hospital 1.23 /1000. Age ranged from 33 to 80 yrs. 52 cases (81.3%) were endometrioid type, 6 cases (9.4%) were serous adenocarcinoma, 2 cases (3.1%) were clear cell adenocarcinoma, 2 cases (3.1%) were mixed cell type, and 2 cases (3.1%) were undifferentiated carcinoma. Statistically significant results were obtained.

Key words: endometrial carcinoma

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LIST OF ABBREVIATION

ASRs: Age-standardized incidence rates.

BMI: Body Mass Index.

CAH: Complex atypical hyperplasia.

CEA: Carcinoembryonic antigen.

CGIN: Cervical glandular intraepithelial.

CH: Complex hyperplasia.

CIN: Cervical intraepithelial neoplasia.

CT: Computed tomography.

D&C: Dilation and curettage.

EH: Endometrial hyperplasia.

EIC: Endometrial intraepithelial carcinoma.

EmGD: Endometrial glandular dysplasia.

EPIC: European Prospective Investigation into Cancer and Nutrition.

ER: Estrogen receptor.

ESCs: Endometrial Serous Carcinomas.

FIGO: International Federation of Gynecology and Obstetrics.

HNPCC: Hereditary nonpolyposis colorectal cancer.

HPV: Human papillomavirus.

HRT: Hormone replacement therapy.

IGF: Insulin-like growth factor.

LUS: Lower uterine segment.

MECC: Middle East Cancer Consortium.

MMR: Mismatch repair.

MRI: Magnetic resonance imaging.

MSI: Microsatellite instability.

NCI: National Cancer Institute.

NIH-AARP: National Institutes of Health-American Association of Retired Persons.

Nos: Not otherwise specified.

OS: Overall survival.

PAS: periodic acid shiff.

PR: Progesterone receptor.

SAH: Simple atypical hyperplasia.

SCC: Squamous cell carcinoma.

SEER: Surveillance, Epidemiology, and End Results program.

SH: Simple hyperplasia.

SPSS: Statistical Product for Services Solutions.

UK: United Kingdom.

UPSC: Uterine papillary serous carcinoma.

US: Ultrasound.

WHO: World Health Organization.

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INTRODUCTION

Endometrial cancer is the most common malignant tumor of the female genital tract **(Gründker *et al.*, 2008)**. It is more common in western countries **(Li *et al.*, 2005)**. Endometrial carcinoma is the fourth most frequent cancer among that women **(Manfredi *et al.*, 2004)**.

Incidences throughout different regions of the world vary considerably. Compared to Africa and Asia having the lowest rates of incidence, Western Europe, USA and Canada are shown to have the highest incidence worldwide. Even within Europe the incidence rates are very heterogeneous **(Münstedt *et al.*, 2004)**.

Among the Middle East Cancer Consortium countries (MECC), the highest rate for endometrial carcinoma was observed in Israeli Jews (13.8/100 000), followed by Cypriots (11.8/100 000), Israeli Arabs (8.7/100 000), Jordanians (5.8/100000), and Egyptians (3.5/100 000). Endometrial carcinoma incidence according to US SEER was much higher (17.6/100 000) **(Komodiki, 2006)**.

The incidence of endometrial carcinoma in cancer registry performed by NCI 2003-2004 was found to be 0.69% **(Mokhtar *et al.*, 2007)**.

Incidence of endometrial carcinoma is higher in women with median age 55-65 year **(Planaguma *et al.*, 2004)**. It is most probably presented by postmenopausal vaginal bleeding **(Mansour *et al*, 2007)**. Postmenopausal bleeding is a significant early symptom of endometrial carcinoma **(Al Kadri *et al.*, 2004)**.

The majority of cases can be divided into two different types of endometrial cancer based on clinico-pathological and molecular characteristics. Type I is associated with estrogen predominance. These tumors are of endometroid histology and develop from endometrial hyperplasia. They have good prognosis and are sensitive to endocrine

treatment. Type II endometrial cancers are not associated with a history of unopposed estrogens and develop from the atrophic endometrium of elderly women **(Gründker *et al.*, 2008)**.

Prognosis is relatively good: relative survival at 5 years is 63–78%, though poorer survival is observed in several eastern European countries **(Coleman *et al.*, 2003)**. In Europe, endometrial carcinoma is the tenth most common cause of cancer death in women **(Bray *et al.*, 2005).**

AIM OF THE WORK

- Production of an accurate registry of endometrial carcinoma cases received by Kasr El Aini Hospital and comparing the incidence with number of cases received by New Kasr El Aini Teaching Hospital.

- Re evaluation of all cases histologically using the latest grading system (FIGO Grading).

- Comparing incidence of endometrial carcinoma among Egyptian patients with registries of other centers, in a trial to detect any special epidemiologic features among Egyptian patients.

EPIDEMIOLOGY OF ENDOMETRIAL CARCINOMA

A- Incidence and Geographic Distribution

Endometrial cancer is the most common malignant tumor of the female genital tract **(Gründker *et al.*, 2008)**. It is the fourth most common malignancy in women in the developed world after breast, colorectal and lung cancer with an incidence estimated at 15–20 per 100,000 women per year. Despite the curability of endometrial cancer being high, tumors with particular morphological variants, adverse histopathological features and/or advanced stage are characterized by aggressive behavior and poor prognosis **(Ryan *et al.*, 2005)**. Incidences throughout different regions of the world vary considerably. Compared to Africa and Asia having the lowest rates of incidence, Western Europe, USA and Canada are shown to have the highest incidence worldwide. Even within Europe the incidence rates are very heterogeneous. In some of these countries, e.g. Germany, endometrial carcinoma is the most common among genital carcinoma **(Münstedt *et al.*, 2004)**. In North America and Europe, endometrial cancer accounts for about 8-10% of all cancer cases in women, whereas in Africa and Asia, it represents only 2-4% of cancers **(Purdie and Green, 2001)**.

The incidence rates of endometrial cancer are highest in the United States and Canada and lowest in Asia and Africa, while Asian women who have migrated to the United States have an intermediate incidence. Such international variation suggests that lifestyle factors may play a major role in the aetiology of this disease **(Tao *et al.*, 2005)**.

In Shanghai, China, the age-adjusted incidence of endometrial cancer increased markedly during the last years. This striking increase in the incidence of this disease in Shanghai parallel marked weight gain among women in China that has been linked, in part, to physical inactivity **(Matthews *et al.*, 2005)**.