Received: September 2016
Accepted: November 2016

Epidemiology of Endometrial Cancer in North of Iran

Shahla Yazdani[1], Zinatossadat Bouzari[2,*], Mohammad Abedi samakoush[3], Mojgan Naeimi rad[4]

ABSTRACT

Background: Endometrial cancer is the most common type of malignancy of the female reproductive system and constitutes the fourth common cancer after breast, lungs and colorectal cancers. Our aim is to report the epidemiology and frequency of endometrial cancer as well as the clinical staging and grading of this disease.

Methods: In this descriptive, cross-sectional study, 75 patients diagnosed with endometrial cancer, admitted to the surgical ward of Rouhani Hospital or Shahid Rajaii Hospital in Iran were enrolled. Demographic characteristics of patients, staging and grading and other variables related to endometrial cancer were collected and data was processed by SPSS version 18 software.

Results: Diabetes, hypertension and obesity had frequencies of 36%, 26.7% and 85.3%, respectively. The mean count of abortion was 0.47, mean count of delivery was 3.71, mean age of menarche was 13.73 years and most frequent age of first delivery pertained to the range of 19-24 years old (n = 47, 62.7%). A high percentage of patients had entered menopause under 39 years of age (n = 25, 33.3%). Three patients (4%) had a history of breast cancer and using Tamoxifen. Only six cases (8%) had a history of irregularities menstruation. In total, 58 patients were in stage 1 and 17 were in other stages. Totally, 77.2% of patients have endometrioid and 13 patients suffered from sarcoma.

Conclusions: Most patients with endometrial cancer had endometrioid. Time of delivery and abortion, lower age of menarche and age at menopause and at the first delivery appeared to be associated with endometrial cancer.

Keywords: Endometrial, cancer, Delivery, malignancy

1. Fateme Zahra Fertility & Infertility Research Health Center, Clinical Research Development Unit of Rouhani Hospital, Obstetrics & Gynecology Department, Babol University of Medical Sciences, Babol, Iran.
2. Cellular & Molecular Biology Research Center, Clinical Research Development Unit of Rouhani Hospital, Obstetrics & Gynecology Department, Babol University of Medical Sciences, Babol, Iran.
3. Department of Internal Medicine, Mazandaran University of Medical Sciences, Sari, Iran.
4.Development Clinical Research Unit of Rouhani Hospital, Babol University of Medical Sciences, Babol, Iran.

***Corresponding Author:**
Zinatossadat Bouzari
Associate professor, Obstetrics & Gynecology Department, Babol University of Medical Sciences, Babol, Iran.
Email: z_b412003@yahoo.com
Address: Ganafrouz Street, Babol University of Medical Sciences, Babol, Iran
Tel: (+98)111-2238264
Mobile: (+98)9111131229

BCCR
2016; 8(4): 37-41
www.bccrjournal.com

Introduction

Endometrial cancer is the most common malignancy of the female genital tract[1]. According to a study in 2008, the ASR (Age-Standardized Incidence Rate) of endometrial cancer was 1.7% in Iran while it was 8.2% in world[2]. Many of the endometrial cancers occur in the 6th and 7th decades of life and 95% of patients are over 40 years old[3].

Overweight, diabetes, lack of physical activity, multiparty, early menarche, delayed menopause and being only exposed to estrogen are the known risk factors for endometrial cancer[4-8].

Studies in the United States in 2012 show delayed menarche, young age in first delivery, breast feeding and use of oral contraceptive pills decrease endometrial cancer while irregular and short menstrual cycle increases the risk.

Using IUD and tubectomy decreases while obesity and lack of physical activity increase the danger of endometrial cancer. Exposure to estrogen and stimulating ovulation period increase the danger[9]. The standard treatment of endometrial cancer includes laparotomy, collecting peritoneal liquid for examining the cytology, hysterectomy by removing both ovaries and fallopian tubes and staging the surgery for patients who are in danger of extra-uterine diseases[10]. Since no studies have been conducted on the epidemiology of endometrial cancer in our region, we have decided to determine the frequency of types of endometrial cancer in patients who have had surgery in Ayatollah Rouhani Hospital or who were given treatment in Shahid Rajaii Hospital. We are going to use the information for preventive programs and early diagnosis.

Methods

The study is descriptive and cross-sectional. All patients had surgery due to a diagnosis of endometrial cancer during five years in Babol Rouhani hospital or Babolsar Shahid Rajaii hospital (Specialty, Subspecialty and governmental Hospitals) in Iran from begin of 2007 until end of 2012 were enrolled to study.

Demographic characteristics of patients included age, location, race, education, job, BMI, number of pregnancies, parity, abortion and other variables including the cause of first visit, initial symptoms, results of paraclinical evaluations, history of surgery, gynecology and internal diseases, duration of internal diseases, age at menarche, menopause and the first delivery, abnormal uterine bleeding, breast feeding, infertility, duration and type of treatment, use of tamoxifen and hormonal pills like estrogen, time and kind of surgery, history of breast cancer, pathology, staging, chemotherapy, radiotherapy, possible complication and relapse, and history of diabetes, hypertension, or breast cancer were collected and analyzed by SPSS version 18.

Results

In this study, we evaluated a total of 75 women who suffered from endometrial cancer with a mean age of 55 years. The majority of patients were aged 50 to 59 years. The mean age at menarche and menopause, number of pregnancies, parity, abortion and the age at first delivery were 13.77 years and 48.1, 3.69, 3.24, 0.47, 18.49 years, respectively.

Frequencies of hypertension, diabetes, BMI, history of infertility and breast cancer are shown in **table 1** Duration of diabetes, hypertension, breast cancer and infertility respectively were 12.04, 10.71, 11.33 and 3.33 years, respectively. Totally, 2.7% had oligomenorrhea, 4% had polymenorrhea and the others had abnormal uterine bleeding.

Totally, 58 patients were in stage 1 and 17 were in

other stages (**table2**).

Totally, 58 patients were in stage 1 and 17 were in other stages (**table2**).

According to pathology reports, 58 (77.2%) patients had endometrioid and 13 (18.5%) patients suffered from sarcoma (Serous carcinoma 3 (4%), Clear cell carcinoma 1 (1.3%), Low grade stromal sarcoma 6 (8%), Liomyosarcoma 5 (6.7%), Sarcomatid carcinoma 2 (2.7%). After TAH+BSO surgery, 4% received chemotherapy, 80% received radiotherapy and 16% underwent both treatments.

Discussion

In this study, the mean age of patients was 55 years and the median was 53.17 year.

In David's study, the common age for endometrial cancer was 50-65 and younger than 40 was uncommon[11].

This age in Momtahen's study in Iran was 50 that is consistent with our study[12].

In this study, the percentage of underlying diseases of diabetes, hypertension and overweight in individuals with diagnosed endometrial cancer was 36%,

Table 1. Frequency of endometrial cancer in patients with hypertension, diabetes, BMI, history of infertility and breast cancer

Variable		Frequency (%) N=75
diabetes	Yes	27(36%)
	No	48(64%)
hypertension	Yes	20(26.7%)
	No	55(73.3%)
BMI(Kg/m2)	18.5-24.5	11(14.5%)
	> 25	64(85.3%)
history of infertility	Yes	5(6.7%)
	No	70(93.3%)
history of breast cancer	Yes	6(8)
	No	69(92%)

Table2. Frequency of grading and staging of patients with endometrial cancer

Staging	**Frequency (%) N=75**
IA	16(21.3%)
IB	26(34.7%)
IC	16(21.3%)
IIA	3(4%)
IIB	1(1.3%)
IIIA	4(5.3%)
IIIB	1(1.3%)
IIIC	3(4%)
IVA	5(6.7%)

26.7% and 85.3% respectively.

In a study by Lapinska, the frequencies of diabetes, hypertension, obesity and pathologic obesity were reported as 39%, 26.7%, 36.1 % and 12.4%, respectively. Since obesity is the problem of the current century and study of Lapinska was related to the years 1981-1996, this difference may be explained[13]. In addition, some of the patients with cancer were diagnosed with 72% hypertension and 64 % overweight in a study by Bratos K[14]. In addition to the time of study, racial factors can be important in rate of obesity. The average number of abortions in this study, 0.47 was similarly to that reported by Michael Parslov and colleagues in their study who revealed an inverse relationship between the number of abortions and the risk of endometrial cancer [15]. In a study by Bratos K, 63% of patients had 1-2 abortions[14]. This difference could be due to the larger sample size in this study. The average number of deliveries in our study was 3.69, similar to the report by Momtahen in her study while Bratos K reported that 65 patients were nulliparous[12,14]. This can be related to the culture. In our study, the mean age at menarche was 13.77 years. In the study conducted by Bratos K et al, the age at menarche was under 13 years in 66% of patients[14], which can be explained by racial factors.

Like Nesrin Reis, young age at menarche was a risk factor[16]. About the age in first delivery, the greatest frequency in our patients was between ages 19 to 24 years. Similarly, Michael Parslov reported an inverse relationship between first delivery and detection of endometrial cancer[15]. In this research, age at menopause was 48.1 years and 6 patients suffered from breast cancer and used Tamoxifen. Dolbort DB the number of patients treated with Tamoxifen was higher, in %3.45 patients with risk factor and %1.54 without risk factor, adenocarcinoma was seen that is consistent with other studies[17]. In evaluation of methods of contraception in patients, a large percentage never used any method and tubal ligation was the most common method used for contraception (%26.7, 20 people). Only 1 patient (%1.3) used OCP. As a result of the difference in culture and lifestyle of subjects in our studies, we cannot compare our findings with those of Salmi T[18] who studied the role of conjugate estrogen on cancer incidence. Similarly, we were unable to compare our results with those of McDonald who assessed the direct relationship between increasing dose and duration of estrogen on cancer incidence[19]. Time of chronic underlying disease was also studied: the average years of diabetes was 12.04 and duration of hypertension was 10.71. Similarly, Lapinska reported the presence of long term chronic diabetes and hypertension[13].

In the current study, many patients (58 individuals, %77.3) were in stage 1 and 26 (% 34) were in stage 1B

Regarding uterine cancer, IIA was the most frequent stage in the study of Momtahen; this difference can be related to faster referral or evaluation of abnormal bleeding in our area[12].

As for grade of the disease, grade 1 was the most frequent. On pathology examination, 77.3% had endometrioid and %17.4 had sarcoma. In references, about 80% of endometrial cancer is endometrioid but 2-6% are sarcoma that warrants further study[20].

Conclusion

In this study, 18.5% patients suffered from sarcoma and cancer of endometrial was seen more in postmenopausal women with underlying conditions such as diabetes, hypertension and overweight. Times of delivery and abortion, younger age at menarche, age at menopause and at the first delivery appeared to be

associated with endometrial cancer.

Conflict of interest: None

Acknowledgement

We thank the development clinical research unit of Rouhani Hospital of Babol.

References

1. Case AS, Rocconi RP, Straughn JM Jr, Conner M, Novak L, Wang W, et al. A prospective blinded evaluation of the accuracy of frozen section for the surgical management of endometrial cancer.Obstet Gynecol 2006;108(6):1375-9.

2.Arab M, Noghabaei G. Comparison of Age- Standard Incidence Rate Trends of Gynecologic and Breast Cancer in Iran and Other Countries. Iran J Public Health. 2014; 43(10): 1372–1379.

3. Gallup DG, Stock RJ. Adenocarcinoma of the endometrium in women 40 years of age or younger. Obstetrics and Gynecology. 1984; 64(3): 417-420.

4. Sherman ME. Devesa SS. Analysis of racial differences in incidence,survival,and mortality for malignant tumors of the uterine corpus .Cancer. 2003 ;98(1): 176 86.

5. Madison T, Schottenfeld D, James SA, Schwartz AC, et al. Endometrial cancer: socioeconomic status and racial/ethnic differences in stage at diagnosis, treatment and survival. Am J Public Health. 2004; 94: 2104-2111.

6. Wright JD, Fiorelli J, Schiff PB, et al. Racial disparities for uterine corpus tumors.Changes in clinical characteristics and treatment over time. Cancer. 2009; 115: 1276-1285.

7. Setiawan VW, Pike MC, Kolonel LN. Racial/ethnic differences in endometrial cancer risk: the multiethnic cohort study. Am J Epidemiol. 2007; 165: 262-270.

8. Voskuil DW, Monninkhof EM, Elias SG. Task force physical activity and cancer. Physical activity and endometrial cancer risk, a systematic review of current evidence. Cancer Epidemiol Biomarkers Prev. 2007; 16(4): 639-648.

9. Cramer DW. The epidemiology of endometrial and ovarian cancer. Hematol Oncol Clin North Am. 2012; 26(1): 1-12.

10. Mehasseb MK, Latimer JA. Controversies in the Management of Endometrial Carcinoma: an update. Obstet Gynecol Int. 2012; 2012: 676032.

11. David M. Purdie, Adèle C. Green. Epidemiology of endometrial cancer. Best Practice & Research Clinical Obstetrics & Gynaecology. 2001; 15(3): 341–354.

12. Momtahen S, Kadivar M, Kazzazi AS, Gholipour F. Assessment of gynecologic malignancies: A multi-center study in Tehran (1995-2005). Indian Journal of Cancer July-September, 2009; 46 (3): 226-230.

13. Łapińska-Szumczyk S, Emerich J. Obesity, hypertension and diabetes mellitus in patients with endometrial cancer.Ginekol Pol. 2003; 74(4): 274-81.

14. Bratos K, Roszak A, Cikowska-Woźniak E, Niecewicz P. Analysis of epidemiologic risk factors for endometrial cancer. Ginekol Pol. 2002; 73(11): 945-50.

15. Parslov M, Lidegaard J, Sci D. Risk factors among young women with endometrial cancer: A Danish case-control study. American Journal of Obstetrics and Gynecology January. 2000; 182 (1): 23-29.

16. Reis N, Kizilkaya Beji N. Risk factors for endometrial cancer in Turkish women: Results from a hospital-based case–control study. European Journal of Oncology Nursing April. 2009; 13 (2): 122–127.

17. Dalbert DB, Rodríguez de la Peña MM, Figueredo A, Mural J, Bartt O, Subiela R, Rossi C, Bazán G. Tamoxifen and endometrial disease in patients with breast cancer. Medicina (B Aires). 2013; 73(2): 97-103.

18. Salmi T, et al. Endometrial carcinoma risk factors, with special reference to the use of oestrogens. Acta Endocrinol Suppl (Copenh). 1980; 233: 37-43.

19. McDonald TW, Annegers JF, et al. Exogenous estrogen and endometrial carcinoma: case-control and incidence study. Am J Obstet Gynecol. 1977; 15; 127(6): 572-80.

20. Gerber J, Sozański L, Suchocki S. The risk factors of endometrial cancer. Ginekol Pol. 2001; 72(12A): 1418-22.