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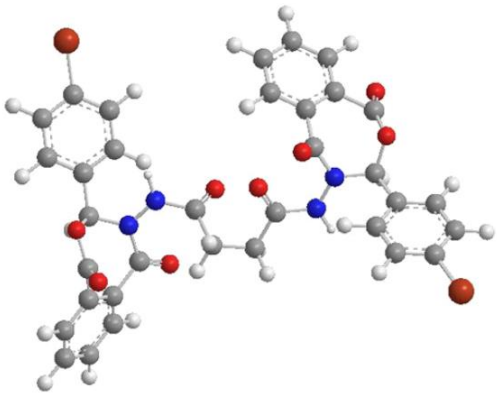

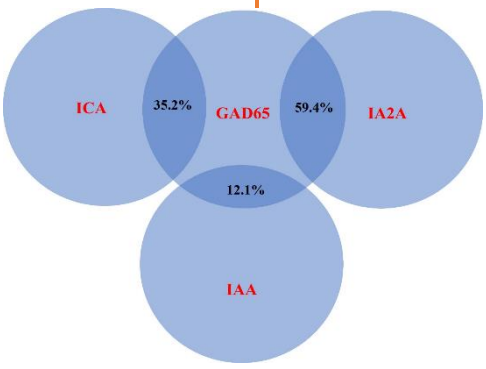

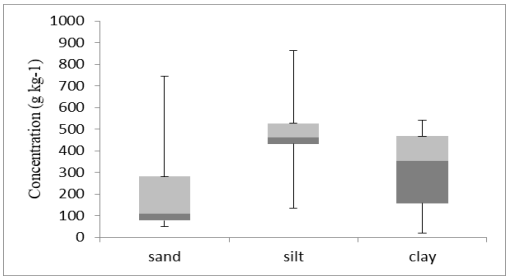

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Evaluation of endometrial cancer based on a multidisciplinary team in Sulaimaniyah, Iraq

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Abstract

Background: Using a multidisciplinary team is a natural progression in cancer care, reflecting the gains achieved by many professions and disciplines and the use of various therapeutic modalities and patient support. **Objectives:** To investigate the prevalence of endometrial cancer, related risk factors, management, and follow-up before and after multidisciplinary team care (MDTC). **Methods:** This cross-sectional observational study was conducted on 186 patients with endometrial cancer confirmed by endometrial biopsy cytology (endometrioid/non-endometrioid type). Patient data on clinical, surgical, pathological, and adjuvant therapies were collected, including age, body mass index (BMI), surgical procedure, nodal staging, and final pathological analysis. Assessment of risk factors and clinical follow-up was done by the MDTC method. **Results:** The patient's age at menstruation was >12 years in 151 (83.9%) patients and <12 years in 29 (16.1%) patients. No significant difference was observed between the two groups in examining cancer and evaluating risk factors. However, the evaluations in the MTC group were associated with minor changes in order to improve and manage risk factors. **Conclusions:** The MDTC can be effective in the overall management of endometrial cancer.

Introduction

The most prevalent gynecological malignancies are endometrial [1] and cervical cancers [2], that account for 16.3% of all malignant disorders [3]. It is believed that the etiology of most endometrial carcinomas begins with unabated endometrial growth, which is hormonally promoted by endogenous/exogenous estrogen and is unopposed by progesterone/progestin and progresses through phases of simple to complicated endometrial hyperplasia [4]. According to the EUROCARE-5 research, European women diagnosed with endometrial cancer between 2000-2007 had a 5-year survival rate of 76% [5].

The most crucial step women can take to lower their chances of endometrial cancer is to keep a healthy body through a healthy diet and exercise, as endometrial cancer is associated with overweight status and obesity [1]. Endometrial malignancies that are restricted to the uterus might exhibit mild signs and symptoms like abnormal uterine bleeding [6] to more severe signs and symptoms, including ascites, pelvic-abdominal pain, broad lymphatic and peritoneal dissemination, and in rare cases, extra-abdominal metastases [4]. Most frequently, vaginal bleeding unrelated to a menstrual cycle is the initial symptom, whereas other signs include pain during urination, discomfort during sexual activity, or pelvic pain [7]. Surgery with pelvic

lymphadenectomy and chemotherapy, either with or without para-aortic lymphadenectomy (PALA), external beam radiation, and brachytherapy, are the primary treatment options [3].

The multidisciplinary team (MDT) is a natural progression in cancer care, reflecting the gains achieved by many professions and disciplines and using various therapeutic modalities and patient support [8]. MDTCs are important for cancer treatment, and cancer MDT meetings also play an important role, as they enable the team to come together and make treatment recommendations for patients with suspected/confirmed cancers [9].

Endometrial cancer is one of the most important cancers, and many factors are involved in its development, including genetics and geographical area. However, limited studies have been conducted on endometrial cancer in Iraq. Therefore, this study aims to investigate the prevalence of endometrial cancer, related risk factors, management, and follow-up before and after the MDTC in Sulaimaniyah, Iraq.

Materials and Methods

Study design and setting

This cross-sectional observational study was conducted on 186 patients with endometrial cancer from January 2016 to January 2022 at Hiwa Hematology/Oncology Hospital, Sulaimaniyah, Iraq. Based on availability, patients were randomly divided into two groups, of which 143 patients were included in the MDTC, while 43 patients were not (NMDTC).

Inclusion criteria

Women' with confirmed endometrial cancer, aged >18 years, with no mental disorder.

Exclusion criteria

Non-cooperated and satisfied patients and those with mental, speech and memory disorders were excluded from the study.

Ethical considerations

The institutional review board (IRB) of the Iraqi National College of Obstetrics and Gynecology approved the research procedure. Also, patients gave written informed consent before the study.

Study protocol

Preoperative abdominopelvic magnetic resonance imaging (MRI) was conducted on all women unless contraindicated, in which a computed tomography (CT) scan was performed. Data on clinical, surgical, pathological, and adjuvant therapies were collected, including the woman's age, body mass index (BMI), surgical procedure, nodal staging, and final pathological analysis (histological type and grade, depth of myometrial invasion, and LVSI status) using a validated questionnaire. Following the pathological study, women were classed using the FIGO-2009 classification.

Adjuvant therapy was delivered individually at the discretion of a multidisciplinary committee. It comprised vaginal brachytherapy (VBT), external beam radiation therapy (EBRT), chemotherapy (CMT), and clinical follow-up that included physical tests and imaging modalities based on the findings. Also, metrics of observational decision making (MODM), Bales' Interaction Process Analysis (Bales' IPA), and measure of case discussion complexity (MeDiC) were used as validated observational instruments.

Statistical analysis

The experimental data were analyzed using SPSS (version 24) and expressed as mean±SD. Descriptive analysis and paired sample t-tests were used to analyze the results before/after MDCT. $P<0.05$ was considered statistically significant.

Results

Regarding the patient's sociodemographic data, the mean age of women was 58.44±10.38 years, and their mean BMI was 31.64±6.69 kg/m^2. On the other hand, 142 (76.3%) patients were housewives, 40 (21.5%) were employed, 3.0 (1.6%) were retired, and 1.0 (0.53%) was unemployed. Also, 100 (53.7%) patients were from rural and 164 (88.2%) were not active smokers (Table 1).

Table 1: Sociodemographic characteristics of the studied participants.

Variable	Frequency	Percentage
Occupation		
Housewife	142	76.3
Employee	40	21.5
Retired	3.0	1.6
Unemployed	1.0	0.53
Residency		
Rural	100	53.7
Urban	86	46.3
Smoking status		
Yes	10	5.4
No	164	88.2
Former smoker	12	6.4
Total	**186**	**100**

Clinical characteristics and medical records of the patients showed that the age of onset of menstruation was >12 years in 156 (83.9%) patients and <12 years in 30 (16.1%) patients. The menopause age in 82 (44.1%) patients was after 50 years, and 104 (55.9%) patients were before 50. Most patients (35.4%) patients had a history of colon cancer, 10.75% breast cancer, and 53.7% other cancers. Regarding the family history of diseases, 112 (60.2%) patients had a history of hypertension, 48 (25.8%) patients had a history of diabetes and 42 (22.6%) patients had a history of polycystic ovary syndrome (PCOS). In comparison, 18 (9.7%) patients were infertile. The results of contraceptive methods showed that 24 (12.9%) patients had a history of taking OCCP. The most common clinical symptom of patients was postmenopausal bleeding in 131 (70.4%) patients and 32 (17.2%) had heavy menstruation. Intermenstrual bleeding was seen in 22 (11.8%) patients and abdominal pain was reported in 45 (24.2%) patients. Histopathological findings showed that 136 (73.1%) patients had an endometrioid type, and 50 (26.9%) had a non-endometrioid variety. Examination of tumor markers showed that 32 (17.2%) were CA 125, 15 (8.1%) were CA 199, followed by 4 (2.2%) cases for each BHCG and A. Fetoprotein (Table 2).

Table 2: Medical history of the patients.

Variable	Frequency	Percentage
Age of menarche (Years)		
Before 12	30	16.1
After 12	156	83.9
Menstrual cycle		
Regular	101	54.3
Irregular	85	45.7
Age at menopause (Years)		
Before 50	82	44.1

After 50	104	55.9
Family history of carcinoma		
Colon cancer	66	35.4
Breast cancer	20	10.75
Others	100	53.7
Chronic illnesses		
HT	112	60.2
DM	48	25.8
PCOS	42	22.6
History of infertility	18	9.7
Other	29	15.6
Contraception history		
OCCP	24	12.9
Cooper	2.0	1.1
Hormones	5.0	2.7
Non-medical	155	83.3
Presentations		
Heavy menses	32	17.2
Intermenstrual bleeding	22	11.8
Postmenopausal bleeding	131	70.4
Abdominal pain	45	24.2
Accidental finding	4.0	2.2
Histopathological result		
Endometrioid	136	73.1
Non-endometrioid	50	26.9
Tumor marker		
CA 125	32	17.2
CA 199	15	8.1
BHCG	4.0	2.2
A. Fetoprotein	4.0	2.2
Total	**186**	**100**

DM: Diabetes mellitus, HT: Hypertension, PCOS: Polycystic ovary syndrome

The mean age of the patients in the MDTC group was 58.28±9.80 years, and in the NMDT group was 59.10±11.95 years (p=0.653). The BMI was 31.25 and 32.03 kg/m^2 in MDTC and NMDT groups, respectively (p=0.379). About 121 (84.6%) patients in the MDTC group and 35 (81.4%) in the NMDT group had their menstruation after 12 years (p=0.663). Most patients in both groups were not active smokers (p=0.597). About 64 (44.8%) patients in the MDTC group and 23 (53.5%) in the NMDT group had irregular menstrual cycles (p=0.549). Regarding the age at menopause, 80 (55.9%) patients in the MDTC group and 23 (46.5%) in the group NMDT went through menopause before the age 50 (p=0.816). The results of family history of diseases and histopathology findings were not effective (p>0.05) between both groups (Table 3).

Table 3: Correlated risk factors to endometrial cancer before and after multidisciplinary team care.

Risk Factors	**Pass-through-Multi-Disciplinary-Team Care**		**p-value**
	Yes (Number, %)	**No (Number, %)**	
Smoking status			
Yes	9.0 (6.3)	1.0 (2.3)	0.597
No	125 (87.4)	39 (90.7)	
Former smoker	9.0 (6.3)	3.0 (7.0)	
Age of menarche (Years)			
Before 12	22 (15.4)	8.0 (18.6)	0.663
After 12	121 (84.6)	35 (81.4)	
Menstrual cycle			
Regular	79 (55.2)	20 (46.5)	0.549
Irregular	64 (44.8)	23 (53.5)	
Age of menopause (Years)			
Before 50	80 (55.9)	23 (53.5)	0.816
After 50	63 (44.1)	20 (46.5)	

Family history of carcinoma			
Breast cancer	2.0 (100)	0.0 (0.0)	0.083
Others	0.0 (0.0)	1.0 (100)	
Histopathological result			
Endometrioid	104 (72.7)	32 (74.4)	0.826
Non-endometrioid	39 (27.3)	11 (25.6)	
Total	**143**	**43**	

The results of a history of chronic diseases showed that 62% of the patients in the MDTC group and 56% in the NMDT group had hypertension (Figure 1). In the MDTC group, 71% of the patients had postmenopausal bleeding, while in the NMDTC group, 67% had postmenopausal bleeding (Figure 2).

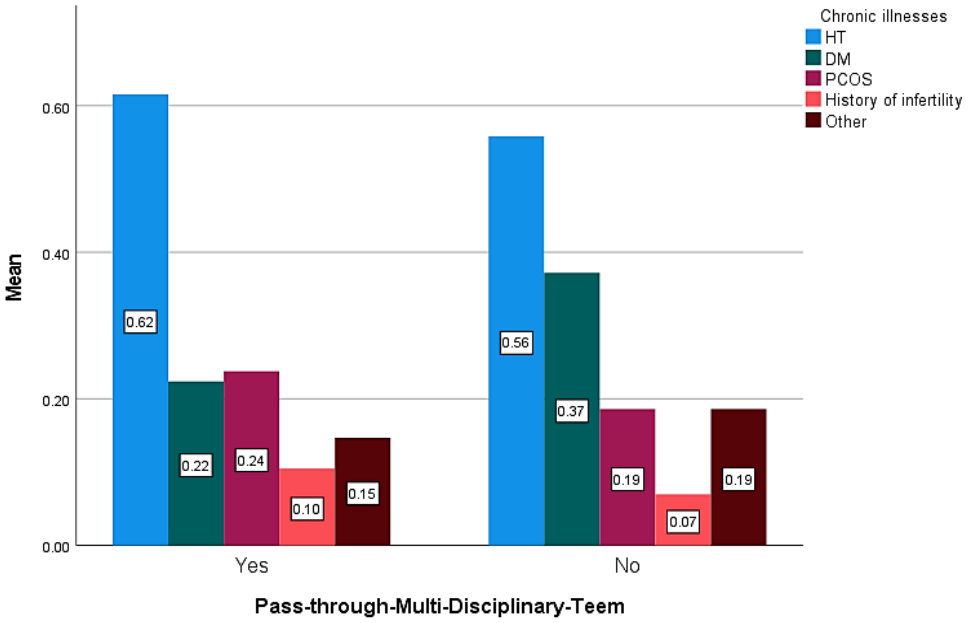

Figure 1: History of chronic diseases among studied groups.

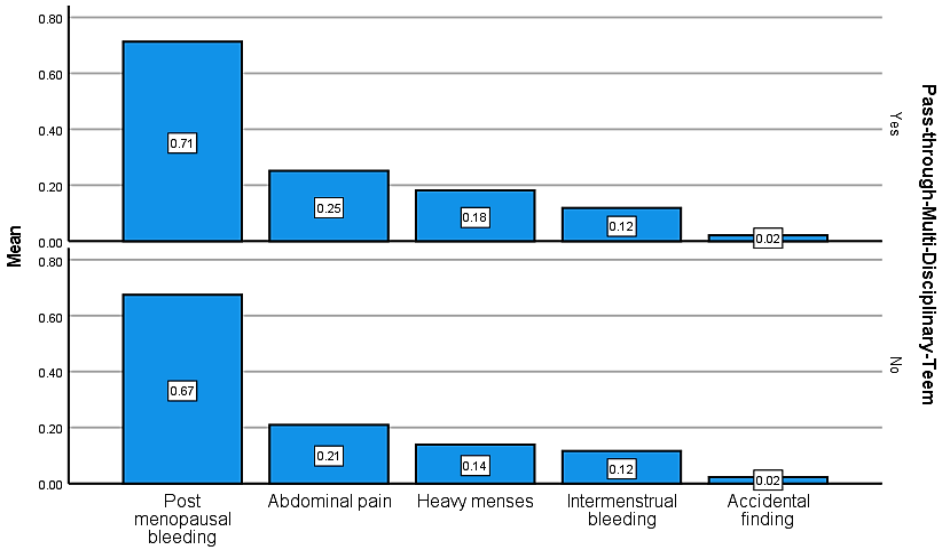

Figure 2: Patient presentations during the study.

Discussion

In this study, women who had endometrial cancer were examined in terms of cancer occurrence and risk factors related to this cancer using a group of different therapeutic professionals. Most women with endometrial cancer were >50 years old, which is around menopause or after menopause. Therefore, the incidence of endometrial cancer increases with age [10, 11]. These results were consistent with another study that found the mean age of patients was 57 years [12]. Considering the effects of obesity as a risk factor for the occurrence of endometrial cancer, most patients were enrolled on it. In an England study, the BMI was 32 kg/m^2 [13]. This value is higher than that found in this study, possibly due to different conditions and individual characteristics in these two countries. The survey results in Pakistan aimed to determine risk factors related to endometrial cancer in women with postmenopausal bleeding and identify benign and malignant causes of bleeding, showing that 67% of patients had early menstruation and 50% had late menopause. These results are inconsistent with our study because the number of women who had early menstruation and late menopause is more than in our study [14].

Endometrial biopsy is the gold standard for distinguishing normal endometrium from pathological one. Examining the histopathological variables showed that most of the patients had an endometrioid type, similar to other studies in India [15, 16].

A cancer patient needs to be supported from all psychological and clinical aspects. Therefore, the need for clinical and non-clinical investigations at the same time in the patient is a subject that has become very important in the last few years [17, 18]. In this study, the importance of using an MDTC in patients with endometrioid cancer is positively reflected, and the results of follow-up and assessment of disease risk factors between the two groups (MDTC and NMDTC) showed a significant difference.

Nearly 70% of cancer-related deaths occur in low- and middle-income countries. The reason for this is mainly referred to the treatment methods and procedures in these countries, which are usually limited due to a lack of trained staff and equipment, limited access of patients to health services, and a small number of clinical guidelines, despite in addition to social and racial inequalities. The Brazilian Society of Surgical Oncology developed approaches to address these barriers and guide physicians who treat patients with endometrial cancer in areas with limited resources and few specialized centres. A multidisciplinary team of 56 experts created this guideline to discuss the main barriers for patients in Brazil. This study showed that the MDTC could play an important role in the follow-up, treatment, management, and improvement of the prognosis of the disease. This method can also be used to plan better and manage treatment and resource allocation in low-income areas [19].

In a retrospective study, Zhang et al. investigated the patients with colorectal cancer that underwent surgery with/without the MDTC from 2008-2014. After three years of follow-up, the difference between the two groups was compared regarding the treatment process and patient prognosis. In the MDTC group, the treatment time, cancer recurrence/metastasis rate, and risk of death were lower. Thus, they approved that this type of intervention speeds up the treatment process and reduces the risk of death for patients with advanced colorectal cancer [20]. These results were consistent with the outcomes of the current study.

It is important to note that in the MDTC, effective collaboration and communication between healthcare providers in all specialties is essential. However, no evidence-based criteria can guarantee high-quality performance on behalf of MDTC. A study to investigate the factors affecting the efficiency, performance, and quality of MDTC has shown that the MDTC with the presence of doctors is useful in simplifying cases and better disease management. It is crucial to pay attention to the fact that more responsiveness should be paid to the characteristics of patients, educational aspects, and patient-centeredness of decisions [21].

Ultimately, screening for endometrial cancer in people with a low cancer risk mostly includes educational measures and preventive programs [22, 23]. Therefore, the existence of people in the MDTC who can transfer the necessary training to these women and increase women's awareness about cancer is vital and shows the importance of the team's work. If these people are trained to go to the doctor in case of abnormal bleeding and spotting, it can be instrumental in disease prevention and timely interventions.

Conclusions

Scientific multidisciplinary team care to endometrial cancer management significantly improved the self-management ability of patients and helped them in treating their underlying diseases and ultimately improved the quality of life of patients. Therefore, this approach can be effective in the management of chronic diseases.

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Conflict of interest

The authors confirm that they are not affiliated with or involved in any organization or entity with financial interests.

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