Is the 2009 FIGO staging system really valuable for Stage I endometrial cancer?

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Summary

Purpose: The aim of this study was to compare the survival predictive values of the 1988 and 2009 FIGO staging systems for the staging of patients with early-stage endometrioid type endometrial cancer. *Materials and Methods:* Two hundred twenty-four patients treated for endometrial cancer from 1996 to 2006 at Ankara Oncology Education and Research Hospital were staged according to the two staging systems. Early-stage patients with a histological diagnosis of endometrioid adenocarcinoma were included in the study. The Kaplan-Meier method was used for survival analysis. *Results:* The charts of 224 patients treated for endometrial cancer were retrospectively evaluated. The five-year overall survival (OS) for Stage IA and IB cases was 100% (n = 19) and 96.2% (n = 79), respectively, with no significant difference between the OS values ($p = 0.126$) with the FIGO 1988 system and 96,4% (n = 112) and 87.5% (n = 48), respectively with a statistically significant difference ($p = 0.05$) with the FIGO 2009 system. *Conclusion:* The authors found that the survival prognostic value of the 2009 FIGO staging system was more effective than the 1988 FIGO staging system for cases with early-stage endometrioid type endometrial cancer.

Key words: Endometrial cancer; Staging system; Early-stage; Survival.

Introduction

Endometrial cancer staging was performed clinically until 1971 when a new classification that again used clinical staging but contained new prognostic factors that added tumor grade came into use [1]. A series of surgical-pathological studies by the Gynecologic Oncology Group (GOG) lead to the International Gynecology and Obstetrics Federation (FIGO) Gynecologic Oncology Committee to decide that endometrial cancer should be surgically staged in 1988. The 1988 FIGO system consisted of three subgroups of stages according to the myometrial invasion depth [2, 3].

FIGO revised the staging system for endometrial cancer in 2009. The revised 2009 FIGO staging system for endometrial cancer has several major changes. The lack of myometrial invasion or a rate of less than 50% is defined as Stage IA in 2009 system. The 2009 FIGO system Stage IA was expanded compared to the 1988 FIGO system by including Stage IA, IB, and IIA cases with endocervical glandular involvement where myometrial invasion is less than 50% and Stage IIIA cases where the peritoneal fluid is positive and myometrial invasion is less than 50%. Stage II cases are no longer divided into two subgroups as A and B and the endocervical glandular involvement of the cervix is accepted as Stage I in the new system. Stage II now only contains patients with cervical stromal involvement [1, 4]. Positive peritoneal cytology has been excluded in the staging so a positive peritoneal fluid no longer influences the Stage [1, 3, 5, 6, 7]. These changes represent a significant change in classifying early-stage patients. The new system has merged patients who were previously classified as advanced-stage with the early-stage.

The aim of this study was to compare the survival results of the 2009 FIGO staging system with the 1988 FIGO staging system for our early-stage endometrial cancer cases and to discover whether the predictive ability of the revised system is better or worse than the 1988 system in the early stages of the disease.

Materials and Methods

This study was approved by the ethics committee of Ankara Oncology Education and Research Hospital. Study data were obtained by retrospective evaluation of the charts of patients treated for endometrial cancer between 1996 and 2006. The patients were staged again according to the 1988 and 2009 FIGO staging systems. Patients with a histological diagnosis of Stage I endometrioid adenocarcinoma were included in the study. Cases without follow-up were excluded. The survival status of the cases was recorded. The overall survival (OS) was accepted as the number of months from the date the cancer diagnosis was received to the date of death. The Kaplan-Meier method was used for survival analysis. The log rank test was used to obtain the *p* values for univariate survival analysis. All analyses were performed using SPSS 15.0 software.

Results

The authors evaluated the charts of a total of 224 cases treated between 1996 and 2006 for endometrial cancer. Stage I endometrial cancers made up 164 and 189 cases, respectively, while the endometrioid subtype was found in 145 and 166 cases, respectively, according to the FIGO 1988 and 2009 staging systems.

Statistical analysis was performed for 139 and 160 FIGO 1988 and 2009 Stage I patients, respectively. A total of six patients without follow-up were excluded. The mean age of the patients was 58.63 ± 9.01 (27 - 80) and

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58,63 ± 8.80 (27 - 80), respectively, according to the FIGO 1988 and 2009 systems. Based on the 1988 system, 139 Stage I patients – including IA (19 / 13.7%), IB (79 / 56.9%), and IC (41 / 29.4%) – were identified (Table 1). The five-year OS for 1988 FIGO system for Stage IA, IB, and IC were 100%, 96.2% and 87.8%, respectively. There was no significant difference for OS values ($p = 0.126$).

When the cases were restaged according to the FIGO 2009 system (n = 160), there were 112 (70.0%) and 48 (30,0%) in Stage IA and IB, respectively, and the five-year OS was 96.4% and 87.5%, respectively (Table 2). The difference was statistically significant (p = 0.05). OS curves obtained for FIGO 1988 and 2009 staging systems with Kaplan-Meier analysis are presented in Figures 1 and 2. Table 3 presents the five-year OS rates of Stage I endometrioid type endometrial cancer patients for both staging systems.

With the 1988 FIGO system, there were 17 Stage IIA and eight Stage IIB cases, 100% and 75% five-year OS, respectively. According to the 2009 FIGO system, there were ten Stage II cases with 80% five-year OS.

Table 1. — *Endometrioid type uterine carcinoma staged according to FIGO 1988.*

Stage	Total n	Exitus n	Alive n	Percent
I A	19	0	19	100.0%
I B	79	3	76	96.2%
I C	41	5	36	87.8%

Table 2. — *Endometrioid type uterine carcinoma staged according to FIGO 2009.*

Stage	Total n	Exitus n	Alive n	Percent
I A	112	4	108	96.4%
I B	48	6	42	87.5%

Table 3. — *Overall five-year survival rates of Stage I according to the 1988 and 2009 FIGO systems.*

Stage	Total n	Exitus n	Alive n	Percent
1988	139	8	131	94.2%
2009	160	10	150	93.8%

Discussion

The aim of the classification and staging of any cancer is to determine the approximate prognosis of the patients and ensure a consistent terminology between healthcare professionals [1]. A good staging system should therefore be valid, reliable, and practical [5, 8]. The prognostic significance of tumor grade and myometrial invasion for endometrial cancer limited to the uterus has been shown years ago [9].

The present authors especially focused on early-stage changes in the current study. An analysis of similar conditions in the FIGO system reported similar prognosis for Stage IA and IB cases in the 1988 FIGO system and therefore found the inclusion of these two subgroups in Stage IA in the 2009 FIGO system to be reasonable [2]. Similarly, the authors did not find a significant difference for the five-year OS between Stage IA and Stage IB according to the FIGO 1988 system. This finding supports the merging of the IA and IB groups in the 1988 system into Stage IA in the 2009 system. When the present authors staged their cases again with the FIGO 2009 system, the five-year OS difference between Stage I and Stage IB was statistically significant. This indicates that the 2009 FIGO staging system is more realistic than the 1988 FIGO system for determining prognosis in patients with early-stage (Stage I) endometrial cancer. Lewin *et al*. found OS for Stage IA and IB cases of 90.7%, and 88.9%, respectively with the 1988 FIGO staging system and for Stage IA, and IB of 89.6% and 77.6%, respectively, with the 2009 FIGO staging system [2]. However, Abu-Rustum *et al*. found the OS for Stage IA and IB cases according to the 1988 FIGO system as 92.4% and 87.3%, respectively ($p < 0.001$), while the OS for Stage IA and IB cases according to the 2009 FIGO system was 89.2% and 75.1% ($p = 0.001$), respectively. They reported that the revised 2009 FIGO system was not superior in predicting the total survival when compared with the 1988 FIGO system [5].

Previous studies have queried the prognostic role of cervical glandular involvement that was defined as Stage IIA in the 1988 FIGO system [10, 11]. Although the 1988 FIGO system has shown a significant difference for the OS values of Stage IIA and IIB cases, it should be taken into account that the depth of myometrial invasion is more significant than cervical glandular involvement as a prognostic factor [10-13]. The prognosis was better in Stage IIA cases than Stage IC cases and almost as good as IA cases with the 1988 FIGO system in this study. With the 2009 FIGO system, the five-year OS of Stage II cases was worse than all Stage I subgroups. The present authors therefore saw that endocervical glandular involvement is not an adequately strong factor influencing the OS of the cases and that not including it in the 2009 FIGO staging system does not decrease the prognostic value of the new system. Similarly, another study reported that the OS for Stage IIA cases was better than Stage IC cases with 1988 FIGO system (OS 77.6%, 78.9% and 73.5% for IC, IIA, IIB, respectively), while the OS for Stage II cases was worse than Stage I cases with 2009 FIGO system (OS 89.6%, 77.6% and 73.5% for Stage IA, IB and II, respectively) [10]. Kim *et al*. have also reported results that support the exclusion of cervical glandular involvement as a prognostic factor in the revised 2009 FIGO staging system [14].

Conclusion

The authors did not find a statistically significant difference between the five-year OS values of 1988 FIGO Stage IA and IB cases. However, there was a statistically

Fig. 1

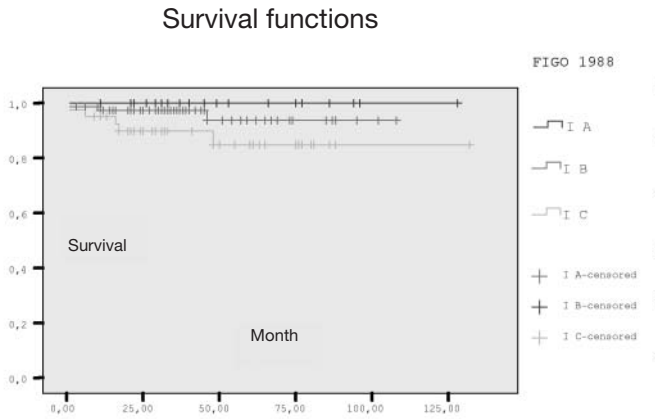

Fig. 2

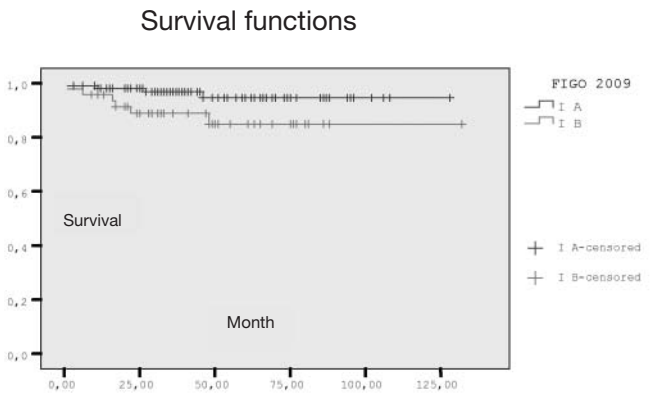

Figure 1. — Kaplan-Meier analysis for overall survival by Stage I for FIGO 1988.
Figure 2. — Kaplan-Meier analysis for overall survival by Stage I for FIGO 2009.

significant difference between the five-year OS values of Stage IA and IB cases according to the 2009 FIGO system. In conclusion, these data indicate that the 2009 FIGO staging system has better prognostic predictive ability than the 1988 system for early-stage disease in endometrioid type endometrial cancers.

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