Primary fallopian tube carcinoma: A retrospective multicenter study

G. Tulunay[1], M. Arvas[2], B. Demir[1], F. Demirkıran[2], N. Boran[1], T. Bese[2], N. Ozgul[1], M.F Kose[1], D. Kosebay[2]

[1]Department of Gynecologic Oncology, SSK Ankara Maternity and Women's Health Teaching Hospital, Ankara
[2]Department of Gynecologic Oncology, Cerrahpaşa Medical School, Istanbul University, Istanbul (Turkey)

Summary

Purpose: This retrospective multicenter study aimed to assess the survival and prognostic factors of primary fallopian tube carcinoma.

Methods: The medical records of 29 patients with fallopian tube carcinoma from two centers were reviewed for age, stage, surgical intervention, relapse and survival.

Results: The mean age of the patients was 56 years (range, 37-76). Six patients were in Stage I (20.7%), eight cases in Stage II (27.6%), nine cases in Stage III (31%) and two cases in Stage IV (6.9%). Data on stage was not available in four cases (13.8). Fifteen patients underwent lymph node evaluation. The median follow-up was 29 months (range, 3-122). The median survival was 95 months with a 5-year survival rate of 69.7 %. The median progression-free survival was 76 months with a 5-year survival rate of 51.8 %.

Conclusion: Age, stage and lymphadenectomy were found to be significant prognostic factors on overall survival.

Key words: Fallopian tube carcinoma; Surgery; Chemotherapy.

Introduction

Carcinoma of the fallopian tube is one of the rarest malignancies of the female genital tract. Because the fallopian tube derives from müllerian origin, epithelial carcinoma of the fallopian tube resembles epithelial ovarian carcinoma, thus, advanced cases of fallopian tube carcinoma are more often diagnosed as ovarian carcinoma.

The treatment approach of fallopian tube carcinoma is in accordance with epithelial ovarian carcinoma treatment (cytoreductive surgery and cisplatin-based adjuvant chemotherapy).

The purpose of this study was to assess the survival and prognostic factors of primary fallopian tube carcinoma with the use of two center cases.

Materials and Methods

The medical records of patients with primary fallopian tube carcinomas treated at the SSK Ankara Maternity and Women's Health Teaching Hospital and Istanbul University Cerrahpaşa Medical School Hospital from August 1990 to April 2003 were reviewed. Twenty-nine patients were identified from these two centers (21 and 8 consecutively).

All histological slides were reviewed and fulfilled the criteria for primary fallopian tube carcinoma as suggested by Hu *et al.* [1]. Data about prognostic factors (age at diagnosis, parity, menopausal status, medical history), presenting symptoms, surgical treatment and adjuvant therapy were included in the analysis. A modified FIGO classification was used for staging.

The Statistical Package for Social Sciences (SPSS Inc., Chicago, IL) was used for the statistical analysis. Statistical significance was considered as $p < 0.05$. Survival rates were calculated using the method of Kaplan-Meier. The log-rank test was used for univariate analysis to determine prognostic factors on progression-free survival and overall survival.

Results

Twenty-nine cases of primary cancer of the fallopian tube were included in the study.

The mean age of the patients was 56 years (range, 37-76). The disease stage distribution and patient characteristics are shown in Table 1.

Two patients (7.1%) were nulliparous, one patient (3.5%) had had one live birth and 25 patients (89.2%) had had two or more live births. Two cases (7.7%) had an infertility history. At the time of diagnosis 17 patients (68%) were postmenopausal. The most common symptom of the patients was vaginal bleeding (33.3%). One patient was diagnosed preoperatively. Two of 29 patients were immediately operated on after the suspicion of acute peritonitis.

Total abdominal hysterectomy with bilateral salpingo-oophorectomy was performed in 14 patients (48%). Surgical staging consisted of total abdominal hysterectomy, bilateral salpingo-oophorectomy, omentectomy and peritoneal washing, pelvic-paraaortic lymph node sampling was performed in the remaining 15 patients (52%). All patients but two received cisplatin-based chemotherapy after surgery.

The primary tumor was located in the right fallopian tube in seven cases (35%), the left fallopian tube in 11 cases (55%), and both fallopian tubes were involved in two cases (10%). The tumor was well differentiated in one patient, moderately differentiated in nine patients and

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Table 1. — *Patient characteristics (n: 29).*

Characteristics	Number of patients	Percent
Patients age (yrs)		
≤ 55	16	55
> 55	13	45
Parity		
Nulliparous	2	6.9
1	1	3.4
> 2	25	86.3
Unknown	1	3.4
Menopausal status		
Premenopausal	8	27.6
Postmenopausal	17	58.6
Unknown	4	13.8
Infertility	2	7
Symptoms and findings		
Vaginal bleeding/discharge	7	24.1
Abdominal pain	4	13.8
Combined	4	13.8
Pelvic mass	3	10.3
Stage		
I	6	20.7
II	8	27.6
III	9	31
IV	2	13.8
Histological grading		
1	1	3.4
2	9	31.1
3	12	41.4
Unknown	7	24.1
Tuba affected		
Right	7	24.1
Left	11	38
Bilateral	1	3.4
Unknown	10	34.5
Surgical procedure		
TAH+BSO*	14	48
TAH+BSO+surgical staging**	15	52

*Total abdominal hysterectomy and bilateral salpingo-oophorectomy.
**Total abdominal hysterectomy and bilateral salpingo-oophorectomy together with omentectomy and pelvic and paraaortic lymphadenectomy.

poorly differentiated in 12 patients. Data on grade and tumor localization was not available for seven and ten patients, respectively, who were initially operated on at other institutions.

According to the histopathological analysis, the tumor was allocated as Stage I in six cases (20.7%), Stage II in eight cases (27.6%), Stage III in nine cases (31%) and Stage IV in two cases (6.9%). Data on stage was not available in four cases (13.8).

In the follow-up period, eight patients relapsed (27.6%). Recurrent disease was limited to the pelvis in two patients (25 %). Recurrence was in the abdomen in two cases (25 %), distant sites in two (25 %) and unavailable in the last two patients (25%). Seven of eight patients with recurrent disease had Stage III and IV at the time of diagnosis (87.5%). Only one recurrence was seen in early stages (Stage I and II). One patient developed primary carcinoma of the lung.

Median follow-up was 29 months (range 3-122 months). The median survival for all patients was 95 months with a 5-year survival rate of 69.7%. The median progression-free survival was 76 months with a 5-year survival rate of 51.8%.

Total survival was significantly higher in total abdominal hysterectomy plus bilateral salpingo-oophorectomy with pelvic and paraaortic lymph node dissection cases vs total abdominal hysterectomy plus bilateral salpingo-oophorectomy cases (p: 0.052) (Figure 1).

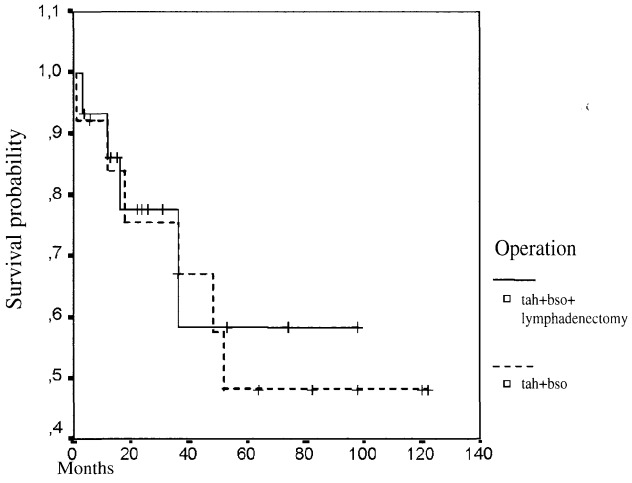

Figure 1. — Overall survival of patients with fallopian tube carcinoma by operation type.

Stage was a significant predictor of survival at five years (Stage I, II vs III, IV, p: 0.0047) (Figure 2). Age (< 55 vs ≥ 55 years) was another significant factor on survival (113 months in < 55-year group and 62 months in ≥ 55-year group, p: 0.00426).

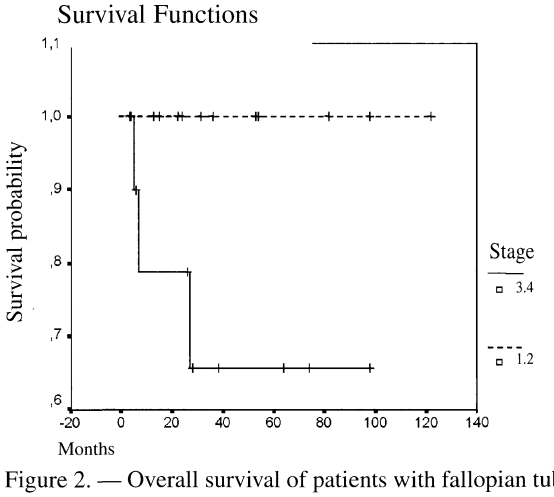

Figure 2. — Overall survival of patients with fallopian tube carcinoma by surgical stage.

However, grade was not significantly associated with survival (p: 0.6306). None of the parameters reached statistical significance in progression-free survival.

One patient in Stage IV was not included in the survival analysis. Her survival was unexpectedly long (52 months).

Discussion

Primary cancer of the fallopian tube is so rare that data from a single institution cannot lead to any substantial conclusions regarding therapy or prognosis. Worldwide, more than 1,600 cases have been reported in the literature. Because of the low prevalence, no prospective randomized studies are available. Since fallopian tube carcinoma and epithelial ovarian cancer are similar clinically and histologically these two neoplasms are often judged in the same way [2].

The differences in the mean age of primary fallopian tube carcinoma cases (50-54 vs 60-64) were presented in the last large study in Finland. In the US, the peak incidence was higher than these results (range 70-74). However, in our series the mean age was younger but in accordance with Gadduchi *et al.* [3], Vaughan *et al.* [4] and Rabczynski *et al.* [5].

In published series, the most prevailing presenting symptoms and findings of patients with primary fallopian tube carcinoma are vaginal discharge or bleeding, abdominal pain and pelvic mass. In our series, two of 29 patients were promptly operated on due to acute abdomen diagnosis. According to exploratory laparotomy, the cause of disseminated peritoneal irritation is tubal rupture.

Preoperative diagnosis of the patients with primary fallopian tube carcinoma is difficult. The sonographic findings of fallopian tube carcinoma cases are nonspecific. According to previous reports, a sausage-shaped mass, cystic spaces with mural nodules, a multilocular mass with a cog and shell appearance could be observed. For patients with a pelvic mass, low impedance vascular flow could be observed with the use of Doppler ultrasound [6-9]. The diagnostic value of cervical and endometrial cytology or biopsy is limited. However, a discrepancy between abnormal cervical cytology within the presence of a normal cervix should be an important finding for the diagnosis [10].

Five-year overall survival of primary fallopian tube carcinoma cases has been reported to range from 23 to 70 [2, 3, 11-13]. Prognostic factors for overall survival presented in recent publications are patient age, surgical stage and residual disease [3, 11, 12, 14, 15].

However, the prognostic value of the histological type or grading of the tumor is controversial. Dissimilar results have been noted in previous studies [16-20]. In the present series, patient age, surgical stage and radical surgery were prognostic variables at univariate analysis, however histological grading was not found to be a significant factor for overall survival.

Because of the similarity of the primary fallopian tube carcinoma and epithelial ovarian carcinoma, the same adjuvant chemotherapy is preferred for these patients. Recently, adjuvant chemotherapy has been suggested for patients in all stages. Platinum-based chemotherapy is commonly used for fallopian tube carcinoma. Recent studies have revealed successful results with cisplatin-based combination chemotherapy [21-23]. Gemignani *et al.* reported successful results on survival using a paclitaxel combination with carboplatin or cisplatin chemotherapy after the initial surgery. However, these results are only for three-year survival analysis. According to recent large studies, the treatment of fallopian tube carcinoma is almost clear.

Aggressive surgery as total abdominal hysterectomy plus bilateral salpingo-oophorectomy with pelvic and paraaortic lymph node dissection and omentectomy is initially performed. Following the surgery, treatment is completed with platinum-based combination chemotherapy.

Conclusion

Aggressive debulking surgery followed by platinum-based combined chemotherapy is the currently accepted treatment of fallopian tube carcinoma. Age, stage and addition of lymphadenectomy were found to be significant prognostic variables at univariate analysis in our multicenter study.

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Address reprint requests to:
G. TULUNAY, M.D.
Cetin Emec Bulvari No. 101/22 Balgat
06520 Ankara (Turkey)