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ASSESSMENT OF THE RISK OF METASTASIS IN PATIENTS WITH ENDOMETRIAL CARCINOMA

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Endometrial cancer can be detected early, and it is considered a disease with good prognosis. In some patients, it may have an aggressive course with an unfavorable outcome. The reason for lethal outcome may be the progression and metastasis of malignant disease as well as common comorbidities in this group of patients.

The aim of the study was to define the risk factors for metastasis in patients with endometrial carcinoma.

The study is a retrospective one. It included 200 patients with endometrial carcinoma. Several parameters were recorded: patient's age, histological type of the tumor, grade of disease, stage of disease at the time of the initiation of treatment, applied therapy and the emergence of local recurrence and distant metastases.

Standard statistical procedures were used: Student's t-test, analysis of variance, univariate and multivariate Cox regression analysis. Quantitative statistical analysis was carried out on the computer. Estimation was performed using SPSS software version 10.0 and StatCalc program of EPI-INFO software package version 6.

The appearance of metastatic disease in 200 patients with endometrial cancer was monitored. Metastatic disease was registered in 76 patients (38.2%). The percentage of patients with metastases is proportional to the stage of the disease and is 74.1% for stage I, 60% for stage II, and 25.8% for stage III. All patients with stage IV had metastatic disease at the time of the diagnosis.

Patients with metastases have significantly higher risk of lethal outcome. Risk factors for metastatic disease are: older age, higher stage of disease, suboptimal cytoreduction, deep myometrial invasion, use of adjuvant chemotherapy. *Acta Medica Medianae 2016;55(3):5-12.*

Key words: endometrial carcinoma, metastases

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Introduction

Endometrial carcinoma (EC) is one of the most common malignant tumors of the female reproductive organs. It is estimated that 200.000 women are diagnosed with EC a year, and lethal outcome is recorded in approximately 50.000 patients. As for the incidence, it is in the fifth place in women, behind breast and lung cancer, colorectal cancer and cervical cancer (1). In our country, EC is the second most common among gynecological tumors, with the incidence rate of 12.7 / 100.000 and mortality rate of 1.3 /100.000 (2). The mortality rate is lower by 5 to 10 times than the incidence rate. The average age of the diseased patient is 62 years and the average age of patients who died from the disease is 73 years (3-5). The observed differences in the epidemiology, biological behavior and presentation have led to the hypothesis that there are two types of this disease with different pathways of carcinogenesis (6, 7). Endometrial cancer can be detected early, most commonly in the first stage of the disease, and is generally considered a disease with good prognosis (8).

Material and Methods

The study was a retrospective one. It included 200 patients with endometrial carcinoma who were treated and monitored both at the Clinic of Gynecology and Obstetrics and Clinic of Oncology in the Clinical Center Niš. Patients were followed for 84 months. Several parameters were recorded: patients' age, tumor histological type, grade of disease, stage of disease at the time of the initiation

of treatment, applied therapy and the emergence of local recurrence and distant metastases.

Standard statistical procedures were used: Student's t-test, analysis of variance, univariate and multivariate Cox regression analysis. Quantitative statistical analysis was carried out on the computer. Estimation was performed using the SPSS software version 10.0 and StatCalc program of EPI-INFO software package version 6.

Results

Patients were classified in four stages. The occurrence of metastases was monitored in relation to a certain stage. Patients with metastases at the time of diagnosis were therefore classified in several stages of the disease. The difference between patients with lower and higher stages was statistically different. There is a greater likelihood that a patient will develop metastatic disease if the disease at the time of diagnosis and applied treatment is characterized with higher stage. (Table 1)

We followed up the appearance of metastases in relation to the histological type, ac-cording to a dualistic approach to endometrial cancer (endometroid and non-endometroid types of tumor). Patients with endometroid tumors developed metastatic disease in 31.8% and with non-endometroid in 50% of cases.

Metastatic disease is often present in patients with non-endometroid tumors (50% versus 31.8 %). The difference is statistically significant. (Table 2)

Table 1. The relationship between the stage and occurrence of metastatic disease

Metastatic disease	Stage I	Stage II	Stage III	Stage IV	Overall
Without metastasis	103 (74.1%)	12 (60%)	8 (25.8%)	0 (0%)	123 (61.8%)
With metastasis	36 (25.9%)	8 (40%)	23 (74.2%)	9 (100%)	76 (38.2%)
Overall	139 (100%)	20 (100%)	31 (100%)	9 (100%)	199 (100%)

χ^2=40.512, p<0.001

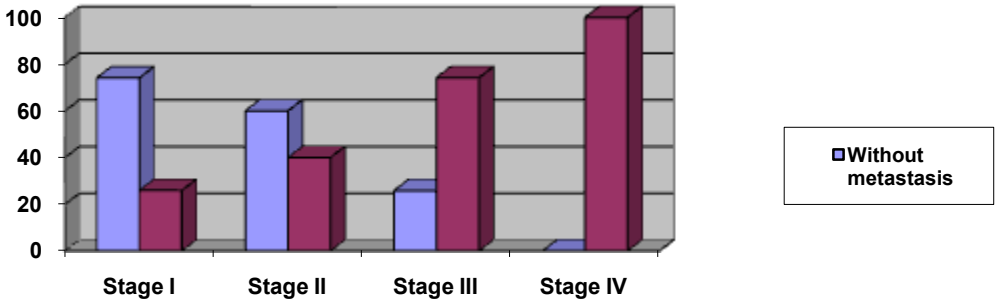

Figure 1. The relation between the stage and occurrence of metastatic disease

Table 2. The occurrence of metastatic disease in relation to the type of tumor

Metastatic disease	Endometroid	Non-endometroid	Overall
No	90 (68,2%)	34 (50,0%)	124 (62,0%)
Yes	42 (31,8%)	34 (50%)	76 (38%)
Overall	132 (100%)	68 (100%)	200 (100%)

χ^2 =6.297; P=0.012

Table 3. The emergence of metastatic disease in relation to the type of completion of the operative treatment

Type of operation / Metastatic disease	Classical hysterectomy	Explorative laparatomy	Non-surgerical treatment	Radical hysterectomy	Subtotal hysterectomy	Overall
Without	115 (67.6%)	2 (22.2%)	3 (20%)	3 (60%)	1 (100%)	124 (62.0%)
With	55 (32.4%)	7 (77.8%)	12 (80%)	2 (40%)	0	76 (38%)
Overall	170 (100%)	9 (100%)	15 (100%)	5 (100%)	1 (100%)	200 (100%)

χ^2=20.198; p<0.001

The analysis of the occurrence of metastases with regard to the applied surgical treat-ment showed that the highest percent of meta-stases was observed in non-operated patients (80%), in those who underwent exploratory lapa-rotomy (77.8%) or radical hysterectomy (40%). The lowest percent of metastases was found in the group that underwent classical hysterectomy and adnexectomy. Patients with higher stages are inoperable due to the advanced disease or present comorbidities, and they were treated with other forms of therapy. Patients who could be operated and who had underwent classical hysterectomy with adnexectomy are significantly less likely to develop metastatic disease. (Table 3)

Distant metastases were found in 43.1% of patients who did not receive radiotherapy, and in 56.9% of patients who received radiotherapy. In relation to the use and type of radiation therapy (transcutaneous and intravaginal brachytherapy or brachytherapy only) no statistically significant differences were shown. The application of radiation therapy does not affect the appearance of distant metastases. (Table 4)

In the selection of patients who should receive adjuvant chemotherapy, we were guided by the histopathological type (patients with endometroid tumor received chemotherapy in 5.3%, and with non-endometroid in 20% of cases), stage (depth of the invasion of uterine muscles, extra-

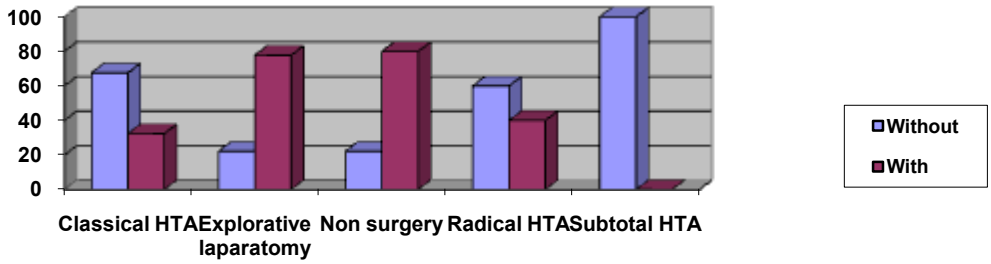

Figure 2. The appearance of metastatic disease in relation to the type of surgical procedure

Table 4. The relation between metastatic disease and applied radiotherapy

Type of radiotherapy / Metastasis	Without radiotherapy	EXT and VB	VB	Overall
No	29 (56,9%)	47 (65,3%)	48 (62,3%)	124 (62%)
Yes	22 (43,1%)	25 (34,7%)	29 (37,7%)	76 (38%)
Overall	51 (100%)	72 (100%)	77 (100%)	200(100%)

EXT (transcutaneous radiotherapy of the pelvis)
VB (intracavitary brachytherapy)
χ^2=0.903; p=0.637

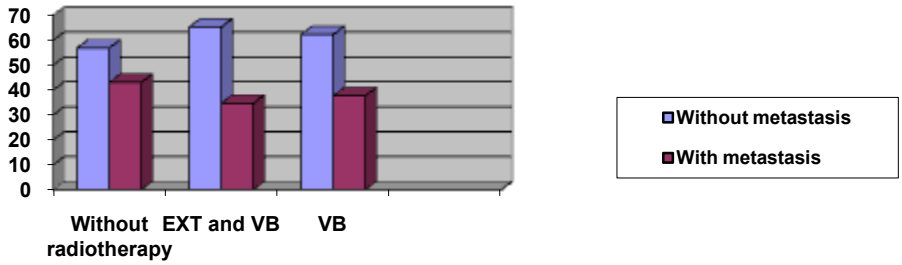

Figure 3. The relation between metastatic disease and applied radiotherapy

Table 5. The application of chemotherapy and the occurrence of metastatic disease

Chemotherapy / Metastatic disease	No	Yes	Overall
No	119 (66,9%)	5 (22,7%)	124 (62%)
Yes	59 (23,1%)	17 (77,3%)	76 (38%)
Overall	178 (100%)	22 (100%)	200 (100%)

Patients who had developed metastases received significantly more adjuvant chemotherapy
χ^2=16.182; p<0.001

uterine spreading of the disease), histological grade (patients with histological grade I (HG I) received chemotherapy in 13.5%, HG II in 45.5%, HG III to 40.9%), the presence of residual tumor (63% of patients with rest tumor received chemotherapy, and 36% of patients without the rest tumor). (Table 5)

Patients with the appearance of local recurrence of the disease often received chemotherapy. (Tabela 6)

The occurrence of metastases and the application of hormone replacement therapy are not statistically related. (Table 7)

Univariate Cox regression analysis confirmed the following significant risk factors in the sample for the development of metastases in patients: age, stage of disease, histological type of disease, grade of disease, type of surgery, depth of muscle invasion, presence of residual tumor, chemotherapy.

Any increase in age, stage, HP rank, grade level and depth of myometrial invasion by 1 unit is associated with an increased risk of the development of metastasis, namely: the age by 8% (95% IP: 5-10%), stage - 2.72 times (95% IP: 2.14 to 3.46 times), HP rank - 1.96 times (95% IP: 1.24 to 1.96 times), grade - 2.54 times (95% IP: 1.81-3.55 times) and the degree of depth of myometrial invasion - 1.97 times (95% IP: 1.47 to 2.64 times).

In patients with classical hysterectomy, the risk of metastasis was 75% (95% IP: 58-85%), which is lower compared to patients treated conservatively and radically. Patients who were not operated were 6.8 times more likely to develop metastatic disease (95% IP: 3.53 to 11.67 times). The application of radical hysterectomy was not a risk factor for the occurrence of metastatic disease.

The application radiotherapy does not affect the appearance of distant metastases. The presence of rest tumor is associated with the development of metastatic disease. The risk of metastasis was 5.28 times higher (95% IP: 3.23-8.62 times greater risk) in patients with the present rest tumor.

Patients who were treated with palliative radiotherapy had metastases 2.39 times more often (95% IP: 1.33-4.31 times higher frequency).

Patients receiving chemotherapy had 4.02 times higher risk of metastasis (95% IP: 2.33-6.95).

Patients who received second line chemotherapy had 4.94 times more metastases (95% IP: 3.05-8.0).

Patients who developed local recurrence had 3.06 times higher risk of developing distant metastases (95% IP 1.91-4.90).

The use of hormone therapy is not associated with the emergence of metastasis. (Tabela 8)

Multivariate Cox regression analysis emphasized the following most important predictors in the sample for the development of metastases: age, stage of disease, insufficient or no cytoreduction (explorative laparotomy), depth of myometrial invasion (which determines the stage and increases the probability for the occurrence of pelvic and paraaortal metastases), the presence of residual tumor, chemotherapy. Also, the patients who needed palliative radiotherapy were more likely to have distant metastases. (Table 9)

Discussion

The largest number of patients diagnosed with endometrial carcinoma is surgically treated. Only 10% of patients are inoperable at the time of diagnosis, and it amounted to 12% in our sample (9). The stage at the time of diagnosis is an important prognostic factor (10-13). According to the current FIGO classification, the stage of the disease is determined surgically-histologically, considering the depth of muscle invasion, invasion of cervix, lymph nodes, extrauterine dissemination, and histological grade.

The stage of the disease in our patients was significantly higher if the grade of the disease was higher, which confirmed that the high grade is an adverse prognostic factor and that in higher grade tumors extrauterine spreading of the disease is often present (Table 3, Figure 1), with the results being in accordance with those reported in the literature (9, 14).

The depth of myometrial infiltration is an independent prognostic parameter. In addition to being in the staging system, the degree of invasion is important because these patients, as in our sample, had significantly increased extrauterine spread of the disease, as well as lymph nodal and distant metastases (14, 15).

Tumor prognostic parameters include the histological type of tumor (13, 14). The most common and most favorable are endometroid, hormone-dependent, with a good prognosis (16). Non-endometroid histology tumors are significantly more often present in patients with higher stage. Patients with higher stages of the disease received chemotherapy more often. In these patients, this therapy was aimed to slow down the progression of the disease, prolong life, alleviate the symptoms and improve the quality of life, but the effect was limited by the spreading of the disease (16).

In patients with higher stages of disease, the occurrence of metastases and local recurrence are more frequent, and therefore the goal of any operative treatment is maximal cytoreduction (17-19).

Patients with higher stages are significantly more likely to have metastatic disease and the lethal outcome of the disease (20-23).

Because of the observed differences in epidemiology, behavior and risk factors, all cancers of the endometrium are divided into endometroid and non-endometroid types. Endometroid tumors are considered more aggressive, rapidly spreading, more likely to have lymph nodal and vascular invasion, and in conditions of minimal muscle invasion. Chemotherapy was significantly more frequent in patients with non-edometroid tumors, which is in accordance to the recommendations (21, 22). Non-endometroid type of tumor was confirmed as an

Table 6. The relation between local recurrence and chemotherapy

Chemotherapy / Relapse	No	Yes	Overall
No	139 (78,1%)	12 (54,5%)	151 (75,5%)
Yes	39 (21,9%)	10 (45,5%)	49 (24,5%)
Overall	178 (100%)	22 (100%)	200 (100%)

χ^2=5.868; p=0.015

Table 7. The relation between metastatic disease and the use of hormone therapy

Metastasis	Hormone therapy		Overall
	No	Yes	
No	109 (62,6%)	15 (57,7%)	124 (62 %)
Yes	65 (37,4%)	11 (42,3%)	76 (38%)
Overall	174 (100%)	26 (100%)	200 (100%)

χ^2=0.235 ;p=0.628

Table 8. The assessment of the risk of metastasis, the results of univariate Cox's regression analysis

Parameter	sig	Exp(B)	Lower	Upper
Age	0,000	1,08	1,05	1,10
Stage of the disease	0,000	2,72	2,14	3,46
HP range	0,004	1,96	1,24	3,08
Disease grade	0,000	2,54	1,81	3,55
Classical hysterectomy	0,000	0,25	0,15	0,42
Explorative laparatomy	0,001	3,58	1,64	7,83
Non surgery	0,000	6,81	3,53	13,11
Radical hysterectomy	0,962	1,04	0,25	4,22
Subtotal hysterectomy	0,634	0,05	0,00	11,67
Without irradiation	0,307	1,30	0,79	2,13
Transcutaneous irradiation	0,612	0,88	0,55	1,43
Vaginal irradiation	0,692	0,91	0,57	1,45
Myometrial invasion	0,000	1,97	1,47	2,64
Presence of rest tumor	0,000	5,28	3,23	8,62
Secondary irradiation	0,004	2,39	1,33	4,31
Chemotherapy (adjuvant)	0,000	4,02	2,33	6,95
Relapse	0,000	3,06	1,91	4,90
Hormone therapy	0,631	1,17	0,62	2,22

Disease stage (I, II, III, IV)
Histological rank (endometroid, non-endometroid tumors)
Histological grade I, II, III
Myometrial invasion (no invasion, up to a third, to half or more than half)

Table 9. The evaluation of the risk of metastasis, the results of multivariate Cox's regression analysis

Parameter	Sig.	Exp(B)	Lower	Upper
Age	0.014	1.05	1.01	1.08
Stage	0.000	1.83	1.31	2.56
Explorative laparatomy	0.002	0.03	0.00	0.28
Myometrial invasion	0.000	1.78	1.29	2.44
Rest tumor	0.046	2.58	1.02	6.54
Secondary irradiation	0.000	4.18	2.06	8.51
Chemotherapy	0.005	3.59	1.46	8.82

adverse prognostic factor, therefore these patients had more frequent local recurrence and distant metastases.

Radiation therapy does not affect the occurrence of distant relapses (23-25). Recurrence is usually localized in the pelvis (60%); intracavitary therapy is effective in about 50% of patients. Patients in whom success is not achieved by ra-

diotherapy of recurring disease often have distant metastases (23). There is a significant difference in the occurrence of relapse among patients who had not and who had received radiotherapy.

Analyzing the data from this study, potential risk factors for the development of metastatic disease were sought after. As significant predictors for the occurrence of metastases in the sample of patients, a univariate Cox regression analysis showed the following: age, stage of disease, hp type of disease, grade of disease, type of surgery, depth of muscle invasion, presence of residual tumor, chemotherapy.

Any increase in age, stage, HP rank, grade level and depth of myometrial invasion by 1 degree is associated with an increased risk of the development of metastasis, namely: the age by 8% (95% IP: 5-10%), stage - 2.72 times (95% IP: 2.14 to 3.46 times), HP rank - 1.96 times (95% IP: 1.24 to 1.96 times), grade - 2.54 times (95% IP: 1.81 -3.55 times) and the degree of depth of myometrial invasion - 1.97 times (95% IP: 1.47 to 2.64 times). In patients who underwent classical hysterectomy, the risk of metastasis was 75% (95% IP: 58-85%), which is lower compared to patients treated conservatively and radically. Patients who had not been operated were 6.8 times more likely to develop metastatic disease (95% IP: 3.53 to 11.67 times). The application of radical hysterectomy was not a risk factor for the occurrence of metastatic disease (but the number of patients with this operation is small to draw a conclusion). The absence of radiotherapy was not associated with metastatic disease. The application of radiotherapy (ext and vb) was not significant in predicting the occurrence of metastases. The presence of rest tumor is associated with the develop-ment of metastatic disease. The risk of metastasis was 5.28 times higher (95% IP: 3.23-8.62 times greater risk) in patients with the present rest tumor.

Patients who were treated with palliative radiotherapy had metastases 2.39 times more often (95% IP: 1.33-4.31 times higher frequency). Patients receiving chemotherapy have 4.02 times greater risk of metastasis (95% IP: 2.33-6.95). Patients who received second line chemotherapy had 4.94 times more metastases (95% IP: 3.05-8.0). Patients who developed local recurrence had 3.06 times higher risk of developing distant metastases (95% IP 1.91-4.90). The use of hormone therapy is not associated with the emergence of metastases.

Multivariate Cox regression analysis emphasized the following most important predictors in the sample for the development of metastases in patients: age, stage of disease, insufficient or no cytoreduction (explorative laparotomy), depth of myometrial invasion (which determines the stage and increases the probability for the occurrence of pelvic and paraaortal metastases) the presence of residual tumor, chemotherapy. Also, patients who needed palliative radiotherapy were more likely to have distant metastases.

Conclusion

Patients with metastases have significantly higher risk of lethal outcome. The risk factors for metastatic disease are: older age, higher stage of disease, suboptimal cytoreduction, deep myometrial invasion, use of adjuvant chemotherapy. Defining the level of risk for each patient enables the application of adequate treatment appropriate for the level of aggressiveness. Defining patients with high risk of metastasis and poor outcome also indicates the need for the application of new forms of treatment with possibly better results.

References

1. Sankaranarayanan R, Felay J. Word-wide burden of gynecological cancer: the size problem. Best Pract& res Clin Obstet Gynecol 2006; 20(2):207-25. [PubMed]
2. Registar za rak centralne Srbije. Incidencija i mortalitet od raka u Centralnoj Srbiji 2003. Institut za zaštitu zdravlja Srbije, Beograd 2006.
3. Jemal A, Thomas A, Murray T. Cancer statistics 2002. CA Cancer J Clin 2002; 52(1):23-47. [CrossRef] [PubMed]
4. Jemal A, Murray T. Ward E, Samuels A, Tiwari RC, Ghafoor A, et al. Cancer Statistics 2005:CA Cancer J Clin 2005; 55(1):10-30. [CrossRef] [PubMed]
5. Jemal A, Siegel R, Ward E, Hso Y, Xu J, Murray T et al.. Cancer statistics, 2008. CA Cancer J Clin 2008; 58(2):71-96. [CrossRef] [PubMed]
6. Hecht J, Mutter G. Molecular and pathologic aspects of endometrial carcinogenesis. Journal of clinical Oncology 2006; 24(29):4783-91. [CrossRef] [PubMed]
7. Djordjević B, Stanojević Z. Karcinom endometrijuma i prekursorne lezije. Srpski arhiv za celokupno lekarstvo. 2007; 135(3-4):230-4. [PubMed]
8. Milenković V, Sparić R, Atanacković J. Methods of screening for endometrial cancer. Srp Arh Celok Lek. 2005; 133(3-4):199-201. [CrossRef] [PubMed]

9. Rose P. Endometrial carcinoma. N Engl J Med 1996; 9(335):640-9. [CrossRef] [PubMed]
10. I lić-Forko J. Karcinom trupa materice. Ginekološka onkologija. Medicinska naklada Zagreb 2005:229-34.
11. Snah C, Jonhson EB, Everet E, Tamimi H,Greer B,Swicher E et al. Does size matter? Tumor size and morphology as predictor of nodal status and recurence in endometrial cancer. Gynecologic Oncology. 2005; 99(3):564-70. [CrossRef] [PubMed]
12. Creasman WT, Odicino F, Maisoneuve P, Quinn MA, Beller U, Benedet JL, Heintz APM at el. 26 th Annual Report on the results of treatment in Gynecelogical cancer. International Journal of Gynecology and obstetrics 2006; 95(1):105-44.
13. Hirai M, Hirona M, Oosaki T, Haysashi Y, Yoshihara T, Matsuzaki O. Prognostic factors relating to survival in uterine endometroid carcinoma. Int J Gynecol Obstet 1999; 66(2): 155-62. [CrossRef] [PubMed]
14. Wolfson AH, Sightler SE, Markoe AM, Schwade JG, Averette HE, Ganjei P, at al. The prognostic significance of surgical staging for carcinoma of the endometrium. Gynecol Oncology 1992; 45(2):142-6. [CrossRef] [PubMed]
15. Goff BA, Rise LW. Assesment of depht of myometrial invasion in endometrial adenocarcinoma. Gynecol Oncol 1990; 38(1):46-8. [CrossRef] [PubMed]
16. Loibl S, Minckwitz G, Kaufman M. Adjuvant hormone therapy following primary therapy for endometrial cancer. Eur J Cancer 2002; 38(6):541-3. [CrossRef]
17. Ayhan A, Taskiran C, Celik C, Yuce K. The long term survival of women with surgical stage II endometrioid type endometrial cancer. Gynecol Oncol 2004; 93(1):9-13. [CrossRef] [PubMed]
18. Barlin JN, Ueda SM,Bristow RE. Cytoreductive surgery for advanced and recurrent endometrial cancer: a review of literature. Womens health 2009; 5(4):403-11. [CrossRef] [PubMed]
19. Bristow RE, Santillan A, Zahurak ML, GardnerGJ, Giuntoli RI, Armstrong DK. Salvage citoreductive surgery for recurrent endometrial cancer. Gynecol Oncol 2006; 103(1):281-7. [CrossRef] [PubMed]
20. Creasman WT. Controversies in FIGO staging of corpus cancer. J Gynecol Oncol 2001; 6:257-9.
21. Burrell MO, Franklin EW, Powell JL. Endometrial cancer: Evaluation of spread and follow-up in 189 patients with stage I or stage II disease. Am J Obstet Gynecol 1982; 144(2):181-5. [CrossRef] [PubMed]
22. Kelly MG, O Malley DM, Hui P, McAlpine J, Yu H, Rutheford RJ, et al. Improved survival in surgical stage I patients with uterine papillary serous carcinoma(UPSC) treated with adjuvant platinum based chemotherapy. Gynecol Oncol 2005; 98(3):353-9. [CrossRef] [PubMed]
23. Keys HM, Roberts JA, Brunetto VL, Zaino RJ, Spirtos NM, Bioss JD, et al. A phase III trial of surgery with or without adjunctive external pelvic radiation therapy in intermediate risk endometrial adenocarcinoma. A Gynecologic Oncology Group study. Gynecol Oncol 2004; 92(3):744-51. [CrossRef] [PubMed]
24. Canon GM, Geye H, Terakedis BE, Kushner DM, Connor JP, Hartenbach EM, et al. Outcomes following surgery and adjuvant radiation in stage II endometrial adenocarcinoma. Gynecol Oncol 2009; 113(2):176-80. [CrossRef] [PubMed]
25 Jhingran A, Burke T, Eiffel P. Definitive radiotherapy for patients with isolated vaginal recurrence of endometrial carcinoma after hysterectomy. Int J Radiat Oncol Biol Phys 2003; 56(5):1366-72. [CrossRef] [PubMed]

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PROCENA RIZIKA OD METASTAZA KOD BOLESNICA SA KARCINOMOM ENDOMETRIJUMA

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Karcinom endometrijuma je jedan od najčešćih malignih tumora kod žena reproduktivnih organa. Karcinom endometrijuma je bolest koja se otkriva rano i smatra se bolešću sa dobrom prognozom. Kod pojedinih bolesnica bolest može imati agresivan tok sa nepovoljnim ishodom. Razlog za letalan ishod može biti progresija i metastaziranje maligne bolesti, ali i česti komorbiditeti u grupi obolelih.

Cilj istraživanja bio je definisanje faktora rizika za nastanak metastaza kod bolesnica sa karcinomom endometrijuma.

Istraživanje je retrospektivno. Obuhvatilo je 200 bolesnica obolelih od karcinoma endometrijuma. Bolesnice su praćene 84 meseca. Registrovane su: godine bolesnica, histopatološki tip tumora, gradus bolesti, stadijum bolesti u vreme početka lečenja, primenjena terapija i pojava lokalnog recidiva i udaljenih metastaza.

Korišćene su standardne statističke procedure, Studentov t-test, analiza varijanse, univarijantna i multivarijantna regresiona Koksova analiza. Kvantitavna statistička analiza sprovedena je na računaru. Proračuni su vršeni korišćenjem SPSS programa u verziji 10.0 i Statcalc programa iz EPI-INFO programskog paketa u verziji 6.

Praćena je pojava metastatske bolesti kod 200 bolesnica sa karcinomom endometrijuma. Registrovano je 76 bolesnica sa metastatskom bolešću (38,2%). Procenat bolesnica sa metastazama proporcionalan je stadijumu bolesti i iznosi za I stadijum 74,1%, II stadijum 60%, III stadijum 25,8%. Sve bolesnice sa IV stadijumom imaju metastatsku bolest u vreme dijagnoze.

Bolesnice sa metastazama imaju značajno viši rizik za letalni ishod. Faktori rizika za metastatsku bolest su: starije životno doba, viši stadijum bolesti, suboptimalna citoredukcija, duboka miometrijalna invazija, primena adjuvantne hemioterapije. *Acta Medica Medianae 2016;55(3):5-12.*

Ključne reči: *karcinom endometrijuma, metastaze*