Original article

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COMPARISON OF REPRODUCTIVE CHARACTERISTICS, LABORATORY AND BIOHUMORAL MEDICAL FINDINGS IN PATIENTS WITH ENDOMETRIAL CARCINOMA AND UTERINE MYOMA

SUMMARY

Endometrial carcinoma is the most frequent malignant tumor, and uterine myoma the most frequent benign tumor of the female genital tract. The aim of this research was to compare:

- Biological – reproductive characteristics of patients with endometrial carcinoma and uterine myoma (time of menarche appearance, time of menopause appearance, parity, number of abortions, duration of reproductive life and time of illness in regard to menopause).

- Metabolic – biohumoral characteristics of patients with endometrial carcinoma and uterine myoma (values of cholesterol, triglyceride, glycemia, blood pressure and body mass).

By adequate statistic analysis it was established that patients with endometrial carcinoma are statistically much older than the patients with uterine myoma, that menarche appears earlier, that menopause starts later, that reproductive life is longer, that the presence of insulin-dependent diabetes and accidentally detected hyperglycemia are more frequent, that they have cholesterol metabolism disorder and that body mass is bigger. It was also confirmed that the increase of systolic pressure is statistically important. Using the same method, it was found out that the number of labors and number of abortions, values of triglyceride and diastolic pressure are not statistically important.

In conclusion, the reproductive characteristics, especially those associated to physiology and pathophysiology of menstrual cycle and metabolic – biohumoral events during life and especially before and after menopause, are important and can influence the appearance of endometrial carcinoma.

Key words: endometrial carcinoma, uterine myoma, metabolic syndrome, menstrual cycle, menopause

INTRODUCTION

Endometrial carcinoma is the most frequent neoplasm of the female genital tract in the countries with developed socio-economic situation. For example, in the USA, there are 39,000 new endometrial carcinomas per year. It is very interesting to mention that the ratio between endometrial carcinoma and cervical carcinoma once was 1:7, while nowadays it decreased to 1:1, and even 2:1 in favor of endometrial carcinoma. This change is ascribed to the modern use of simple but very significant screening methods for early detection of cervical carcinoma (colposcopy and PA test) in the preinvasive stage. Along with breast, large intestine and lungs carcinomas, endometrial carcinoma is the most frequent oncologic pathology (1,2).

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There are two pathogenous types of endometrial carcinoma. The most frequent is the one that appears in women before menopause, who in their anamnesis have a data about non-opponent exposition to estrogens, no matter if they are of exogenous or endogenous origin. In such women, this illness starts as endometrial hyperplasia, and terminates as manifested carcinoma. Those, so-called estrogen-dependent tumors are rare, but surviving is very important. This kind of endometrial carcinoma is marked as type I. Type II is found in the women in late postmenopause. Its appearance and growth is not estrogen-dependent, is not based on previous endometrial hyperplasia; it is not histologically different, derives from the atrophic endometrium, is highly invasive in myometrium, and illness recurrences and metastasis are more frequent (3).

The risk factors leading to the appearance of endometrial carcinoma are numerous and can be divided into reproductive, metabolic-biohumoral and other reasons. Reproductive risk factors are: nulliparae, women with infertility in anamnesis, early menarche and late menopause. Metabolic-biohumoral factors are: lipid metabolism disorder (primarily cholesterol), carbohydrate metabolism disorder (diabetes mellitus), increased blood pressure and abnormal body weight. Other reasons for the appearance of endometrial carcinoma are: excessive and too long use of exogenous estrogens with cyclic use of gestagene (postmenopausal hormone replacement therapy), use of Tamoxiphen antiestrogen in order to cure breast carcinoma, irregular menstrual cycle as the consequence of anovulation and abnormal exposure to estrogen, syndrome of polycystic ovaries and functional ovary tumors (4-7).

The main symptom of endometrial carcinoma is vaginal bleeding and genital flora disorder. That is the reason why the patients go to their gynecologists, which can result in detecting illness in time, i.e. while it is in its early stage when the eventual curing is possible. For that reason, there is the rule that women with endometrial carcinoma do not die of it, while those unfortunate women with ovarian carcinoma mostly die of it (8).

Diagnosis of endometrial carcinoma is done by cytological smear of back vaginal fornix according to Papanicolaou, bimanual gynecology examination, transvaginal ultrasonography, and fractionary exploration curettage and histopathological examination of the material got by curettage (9, 10).

The therapy combines: surgery and radiation, or just radiation when surgical intervention is not possible (11, 12).

Uterine myomas are the most frequent tumors of the female genital system. They appear from the smooth muscles in myometrium. They are mostly multiple and of different size. According to localization referring to the uterus wall, they can be submucous, intramural and subserous. According to the characteristics, they are benign tumors (13).

Reasons for the appearance of myoma are different. It is supposed that they appear because of the mutation of myometrium cells, which ends in progressive loss of growth regulation. Development etiology consists of: constitution, family inclination, race, good socio-economic life conditions, good supply of little pelvis with blood vessels, hormone support by ovary hormones, picnic constitution, arteriosclerosis, lipid metabolism disorder, cholelithiasis. Myomas appear after puberty, and highest incidence is between 35 and 50 years of age. Until the 20th year, myomas present in only 1.6% of patients, while between 30 and 50 years of age they appear in 73.5% of cases, and after menopause in only 3.9% of patients (14,15).

Clinical presentation depends on localization, size, growth speed, and relation to the surrounding organs. The most frequent symptom is bleeding in form of extended and ample menses or irregular, non-cyclic, ample and profuse bleeding. Pain can cause expansion of peritoneal myoma capsule or because of the pressure to neighboring organs, especially bladder and rectum (16, 18).

Diagnosis is made according to clinical and ultrasonography examination (17).

Therapy depends on symptoms, size, localization, life age, parity, wish for pregnancy and general state of a pregnant woman. It can be based on medicaments, GnRH agonistic and surgical therapy (myomectomy and hysterectomy) (19,20).

AIMS

The aim of this research was to compare:

1. Biologic – reproductive characteristics of the patients with endometrial carcinoma and uterine myoma (time of menarche appearance, time of menopause appearance, parity, number of abortions, length of reproductive life and of illness appearance in regard to menopause).

2. Metabolic – biohumeral characteristics of the patients with endometrial carcinoma and uterine myoma (values of cholesterol, triglycerides, glycemia, blood pressure and body mass).

MATERIAL AND METHODS

The research was conducted at the Clinic of Gynecology and Obstetrics, Clinical Center in Nis. The retrograde analysis of clinical material (operation protocol, disease history) was carried out in 2005. The research included 44 patients with

endometrial carcinoma and the same number of randomly chosen patients with uterine myoma. The research results are systematized and displayed in tables.

The following statistic methodology was used: for the examination of the marking distribution normality Shapir-Wilks test was used. Depending on the kind of statistic mark (numeric or attributive), kind of distribution (normal – incorrect, unknown), as well as the number and their size, the following statistic tests were used:

- Student's test for two large independent samples
- Mann-Whitney U – Wilcoxon Rank Sum W test and
- X-square test (with Yates' correction) or Fischer's test of exact possibility (Fischer's exact test).

For the analysis of the research results we used statistic package SPSS (8.0 for Windows).

RESULTS

The youngest woman with endometrial carcinoma was 46, and the oldest 76. Average age of the examined with endometrial carcinoma was 60.847.81 years.

Women with uterine myoma were between 38 and 61 years of age. Their average age was 48.525.65 years.

The patients with endometrial carcinoma were, on average, 12 years older than the examinees with uterine myoma, and this difference is statistically very significant ($t = 8.457$; $p<0.0001$) (Table 1).

Table 1 Distribution of the examined by age

Age	Endometrial Ca		Uterine myoma	
	number	%	number	%
35-49	4	9.09	25	56.82
50-64	24	54.55	19	43.18
65-79	16	36.36	0	0.00
TOTAL	44	100.00	44	100.00
Min-max	46-76		38-61	
Xav..±SD	60.84±7.81		48.52±5.65	

In the patients with endometrial carcinoma, average time of the first period (menstruation) was in 12.5 years of age (SD = 1.61; Me = 12 years). In the group with uterine myoma, menarche appeared somewhat later, with 14.161.55 years of age (Me = 14 years).

Women with endometrial carcinoma has earlier menarche than the patients with uterine myoma, which is statistically significant (Mann-Whitney U test: z = -4.458; p<0.0001) (Table 2).

Table 2 Menarche appearance in the examined group with endometrial carcinoma and uterine myoma

Menarche (age)	Endometrial Ca	Uterine myoma
Min – max	10-17	11-17
Xav. ± SD	12.50±1.61	14.16±1.55
Me	12	14
Interquartal difference (25. – 75. percentile)	11-13	13-15
Mann-Whitney U test	441	
Z value	-4.458	
p	p < 0.0001	

Menopause appeared in 38 (86.36%) women with endometrial carcinoma, and in 28 (63.64%) patients with uterine myoma. Menopause appeared in greater percentage in women with endometrial carcinoma then in those with uterine myoma, which is statistically significant, but those women were also older (Fischer's test of exact possibility: p = 0.025; p<0.05) (Table 3).

Table 3. Menopause presence in the examined group with endometrial carcinoma and uterine myoma

Beginning of menopause	Endometrial Ca		Uterine myoma	
	number	%	number	%
NO	6	13.64	16	36.36
YES	38	86.36	28	63.64
TOTAL	44	100.00	44	100.00

In patients with endometrial carcinoma, the mean menopause duration was 11.457.29 years (Me = 10 years). In the examinees with uterine myoma menopause duration was 3.933.06 years (Me = 3 years) on average.

Women with endometrial carcinoma have longer postmenopauses than the patients with uterine myoma, which is statistically significant (Mann-Whitney U test: z = -4.542; p<0.0001) (Table 4).

Table 4 Postmenopause duration in the examined group with endometrial carcinoma (n=38) and uterine myoma (n=28)

Postmenopause duration (in years)	Endometrial Ca	Uterine myoma
Min – max	2-25	1-12
Xav. ± SD	11.45±7.29	3.93±3.06
Me	10	3
Intraquartal difference (25. – 75. percentile)	6.00-15.25	2.00-4.75
Mann-Whitney U test	184.5	
Z value	-4.542	
p	p < 0.0001	

In the patients with endometrial carcinoma, time from menarche to menopause was, on average, 38.504.45 years (Me = 38 years). In the subjects with uterine myoma, average time was 33.463.04 years

(Me = 33.5 years). In women with endometrial carcinoma this time was longer than in women with uterine myoma, which is statistically significant (Mann-Whitney U test: $z = -4.564$; $p<0.0001$) (Table 5).

Table 5. Time from menarche to menopause in the examined group with endometrial carcinoma (n=38) and uterine myoma (n=28)

Time from menarche to menopause (in years)	Endometrial Ca	Uterine myoma
Min – max	29-51	26-38
Xav. ± SD	38.50±4.45	33.46±3.04
Me	38.00	33.50
Interquartal difference (25. – 75. percentile)	36.00-42.00	31.63-36.00
Mann-Whitney U test	181	
Z value	-4.567	
p	p < 0.0001	

Among women with endometrial carcinoma, there were 5 (11.36%) nulliparae. The largest number of women (21 or 47.73%) had two, and one woman even seven labors till that moment. In the group of patients with uterine myoma, 4 or 9.09% were nulliparae. In addition, majority of women had two labors (20 or 45.46%), then one labor (14 or 31.82%), and only one woman had four labors. There is no statistically significant difference in the frequency of nulliparae and multiparae between women with endometrial carcinoma and patients with uterine myoma (Fischer exact probability test : $p = 1.00$; $p>0.05$) (Table 6).

Table 6. Parity in patients with endometrial carcinoma and uterine myoma

Number of labors	Endometrial Ca		Uterine myoma	
	number	%	number	%
0	5	11.36	4	9.09
1	12	27.27	14	31.82
2	21	47.73	20	45.46
3	3	6.82	5	11.36
4	3	6.82	1	2.27
TOTAL	44	100.00	44	100.00

The average number of labors per patient, who had labors before, with endometrial carcinoma 2.001.12 (Me = 2), and in the group with uterine myoma 1.830.75 (Me = 2). There is no statistically significant difference in the number of labors between the patients with endometrial carcinoma and those with uterine myoma (Mann-Whitney U test: $z = -0.395$; $9<0.05$). Among the patients with endometrial carcinoma there were 19 (43.18%) women without any labors, while this percentage is lower in the group of patients with uterine myoma (12 or 27.27%). This difference is not statistically significant (X-2 test = 1.79; $p = 0.181$; $p>0.05$). In the structure of patients with endometrial carcinoma, the women who had one abortion dominate (9 or

20.45%), but also those with four and even more abortions (18.18%) before hospitalization in our Clinic. Among patients with uterine myoma, there were 11 (25%) women with one abortion, and 10 (22.73%) women with four and more abortions. Women with endometrial carcinoma show great variability compared to the data about previous abortions (min = 1; max = 9). Average number of labors per patient (who had abortions) is 2.88 with SD = 2.20. Average is 2.00, and interquartal difference is 25-70 percentile = 1.00-4.50. Number of abortions in the group with uterine myoma was between 1 and 5 (in women with abortions). Average number of abortions per patient is 2.501.46 (Me = 2.0). There is no statistically significant difference in the number of abortions between women with endometrial carcinoma and those with uterine myoma (Mann-Whitney U test: $z = -0.274$; $p>0.05$) (Table 7).

Table 7. Average number of abortions in patients with endometrial carcinoma (n=24) and uterine myoma (n=32)

Number of abortions	Endometrial Ca	Uterine myoma
Min – max	1.00-9.00	1.00-5.00
Xav. ± SD	2.88±2.20	2.50±1.46
Me	2.00	2.00
Interquartal difference (25. – 75. percentile)	1.00-4.50	1.00-4.00
Mann-Whitney U test	383.5	
Z value	-0.274	
p	p>0.05	

In the group of patients with uterine myoma there were 10 (22.73%) women with insulin-dependent diabetes, and among patients with endometrial carcinoma there were 21 (47.73%) cases. Insulin-dependent diabetes is statistically significantly more present in women with endometrial carcinoma than in patients with uterine myoma (X-2 test = 4.98; $p = 0.026$; $p<0.05$) (Table 8).

Table 8 Presence of insulin- dependent diabetes in the examined group with endometrial carcinoma and uterine myoma

IDD	Endometrial Ca		Uterine myoma	
	number	%	number	%
NO	23	52.27	34	77.27
YES	21	47.73	10	22.73
Total	44	100.00	44	100.00

In the group of patients with uterine myoma, there were 18 (40.91%) women with increased glycemia (without data whether it was diabetes or coincidental increase of normal values), and among the examined with endometrial carcinoma there were 29 (65.915%) cases. Increased glycemia is

statistically significantly more present among patients with endometrial carcinoma than in those with uterine myoma (X-2 test=4.57; p=0.033; p<0.05) In the group of women with endometrial carcinoma, the lowest glycemia value was 4.20 mmol/L, and the highest 16.60mmol/L (Me = 6.80 mmol/L). In the group of women with uterine myoma, the glycemia level in serum varied from 3.70 to 9.10 mmol/L. Average value was 5.901.38 mmol/L (Me=5.78 mmol/L). Women with endometrial carcinoma had statistically significantly higher values glucose in serum than women with uterine myoma (Mann-Whitney U test: z = -3.076; p = 0.021; p<0.01).

Presence of the increased cholesterol values in the group of women with endometrial carcinoma was by 38.64% higher than in the group of patients with uterine myoma, and that difference was statistically significant (X-2 test = 12.14; p = 0.00049; p<0.001) (Table 9).

Table 9 Cholesterol values in the serum of the examined with endometrial carcinoma and patients with uterine myoma

Cholesterol	Endometrial Ca		Uterine myoma	
	number	%	number	%
Normal values (<5,5mmol/L)	9	20.45	26	59.09
Increased vales (?5,5mmol/L)	35	79.55	18	40.91
Total	44	100.00	44	100.00

In women with endometrial carcinoma, the lowest cholesterol value was 3.95mmol/L, and the highest 9.38 mmol/L. Cholesterol in the serum of women with uterine myoma was between 2.98 and 8.10 mmol/L. Average value was 5.281.25 mmol/L. Patients with endometrial carcinoma had by 1.11 mmol/L higher average cholesterol value in serum than the patients with uterine myoma, and this difference was statistically very significant (t = 4.236; p<0.0001).

Presence of increased triglyceride in the group of women with endometrial carcinoma was by 5.28% higher than in the serum of women with uterine myoma, but that difference was not statistically significant (X-2 test = 0.002; p>0.05) (Table 10).

Table 10 Triglyceride values in the serum of the examined with endometrial carcinoma and patients with uterine myoma

Triglyceride	Endometrial Ca		Uterine myoma	
	number	%	number	%
Normal values (<2mmol/L)	27	61.36	28	63.64
Increased values (?2mmol/L)	17	38.64	16	33.36
Total	44	100.00	44	100.00

In the group of women with endometrial carcinoma, the lowest triglyceride value was 0.75 mmol/L, and the highest 2.89 mmol/L. Average triglyceride level in the serum of the patients with endometrial carcinoma was 1.740.54 mmol/L (Me = 1.88 mmol/L). In the group of women with uterine myoma, triglyceride level in the serum varied from 1.10 to 2.32 mmol/L. Average value was 1.770.37 mmol/L (Me=1.76 mmol/L). The difference between these values was not statistically significant (Mann-Whitney U test: z = -0.083; p>0.05).

Weight of patients from both groups varied considerably. Body mass of women with endometrial carcinoma varied from 65 to 105 kg. Average body mass of the patients with endometrial carcinoma was 83.2010.11 kg (Me=82.5). Women with uterine myoma weighed from 62 to 95 kg. Their average weight was 75.167.48 kg (Me=75.0 kg). Patients with endometrial carcinoma were, on average, heavier than the patients with uterine myoma, and this difference was statistically significant (Mann-Whitney U test: z=-3.769; p = 0.0002; p<0.001) (Table 11).

Table 11 Average body mass values in the examined with endometrial carcinoma and group of women with uterine myoma

Body mass (kg)	Endometrial Ca	Uterine myoma
Min – max	65.00-105.00	62.00-95.00
Xav. ± SD	83.20±10.11	75.16±7.48
Me	82.50	75.00
Interquartal difference (25. – 75. percentile)	75.00-90.00	70.00-79.50
Mann-Whitney U test	518	
Z value	-3.769	
p	p<0.001	

In the group of women with uterine myoma there were 34 (77.27%) patients with arterial hypertension. And it was more present in the patients with endometrial carcinoma; it appeared in 40 women (90.91%). The difference in the prevalence of arterial hypertension between women with endometrial carcinoma and those with uterine myoma was not statistically significant for the level p<0.05 (X-2 test = 2.12; p = 0.145; p>0.05) (Table 12).

Table 12 Presence of arterial hypertension in the examined with endometrial carcinoma and uterine myoma

Arterial hypertension	Endometrial Ca		Uterine myoma	
	number	%	number	%
NO	4	9.09	10	22.73
YES	40	90.91	34	77.27
Total	44	100.00	44	100.00

In the group of women with endometrial carcinoma, the lowest value of systolic pressure was

120mmHg, and the highest 220 mmHg. Average systolic pressure in the patients with endometrial carcinoma was 15718.28 mmHg (Me=160 mmHg). In the group of women with uterine myoma, systolic pressure varied from 120 to 170 mmHg. Average value was 147.5013.27 mmHg (Me=150 mmHg). Difference in these values is statistically significant (Mann-Whitney U test: z = -2.656; p<0.01).

In the group of women with endometrial carcinoma, the lowest value of diastolic pressure was 75 mmHg, and the highest 145 mmHg. Average diastolic pressure in the patients with endometrial carcinoma was 92.8412.45 mmHg (Me=90 mmHg). In the group of women with uterine myoma diastolic pressure varied from 70 to 110 mmHg. Average value was 91.2510.57 mmHg (Me=90 mmHg). The difference of these values was not statistically significant (Mann-Whintey U test: z=-0.201; p>0.05).

DISCUSSION

The incidence of endometrial carcinoma in the world is 189,000, prevalence is 716,000, and mortality 44,700 per year. In some developed countries, USA for example, it is the most frequent gynecological carcinoma. (1,2). Everything that increases women's exposure to estrogens, increases the risk of endometrial carcinoma. Therefore, women must be well-informed of risk factors for this disease: age over 40 years, menarche before 12 or menopause after 50 years of age, infertility in anamnesis, barren women, overweight, animal fats in nutrition, use of Tamoxiphen, or longer estrogen replacement therapy without gestagene, breast and ovary carcinoma anamnesis, radiation of small pelvis, family anamnesis of hereditary nepolipous colorectal carcinoma, diabetes mellitus, gall-bladder diseases, hypertension, cholesterol metabolism disorder. Prevention can be pregnancy and oral contraceptives. Having all this in mind, women can take preventive measures, talk to their gynecologists and turn themselves in for diagnostic treatment. Endometrial carcinoma can be discovered in many ways. (3-6). Today, the most frequent techniques for getting the endometrium tissue is biopsy, and the pathologic endometrial finding is the golden standard for defining the state of endometrium. It is confirmed that hysteroscopy biopsy is better than the usual way of taking endometrium tissue by exploration curettage. It is also confirmed that the positive predictive value of endometrium biopsy in women with average risk is low, and that it is high in women in specific risk groups, so the suggestion for such women is a very reasonable strategy in the group with increased risk (9). Nowadays, transvaginal ultrasonogrphy is used as non-invasive test for endometrium changes. However, till now, there is no agreement about the criteria which endometrium thickness has high sensitivity and is specific. Endometrium thickness varies depending on whether it is in pre- or postmenopause , whether a woman is on replacement therapy with estrogens or estrogen-gestadenes or is taking Tamoxiphen. Sonohysterography is used for determining endometrium volume characteristics, especially for differentiating thickness of polyps and myomas, which usually cannot be recognized by endometrium biopsy (10). Hysteroscopy is used for the evaluation of pathological uterine bleeding. Advantages over endometrium biopsy, transvaginal ultrasonography, sonohysterography, dilatation and curettage are direct endometrium visualization, possibility of taking samples for biopsy and removing lesions, especially polyps and submucous myomas. It must not be forgotten that the choice refers to non-symptomatic women. When there is bleeding, everything used is diagnostic and not a choice test. According to American Cancer Society, carbo-hydrate metabolism regulation is one of the ways for early detection of endometrial carcinoma and prevention from it, no matter whether it is diabetes mellitus or undiagnosed hyperglycemia, fats metabolism regulation, especially cholesterol as a precursor of estrogen, body weight regulation and decrease of subcutaneous fatty tissue as a huge depot where extraovary estrogens appear, animal fats poor nutrition, blood pressure regulation, curing of gall-bladder disease and critical, time-limited use of hormone replacement therapy. Besides proved beneficial effects on the prevention of endometrial carcinoma, beneficial effects of the aforementioned factors on the prevention from cardiovascular and cerebrovascular diseases that still stand for diseases with the highest mortality rate in our and in other countries are undisputable. (3,7).

CONCLUSION

Patients with endometrial carcinoma are older than the patients with uterine myoma, menarche appears earlier, menopause starts later and it lasts longer before the appearance of the first disease symptoms, reproductive life is longer, insulin-dependent diabetes is more present, accidentally detected hyperglycemia and increased cholesterol values are more frequent, they are more corpulent and have increased systolic pressure. All the mentioned parameters are statistically significant.

Barren women and women who had labors, number of labors and abortions, values of triglyceride and increased diastolic pressure are not statistically significant among patients with endometrial carcinoma and uterine myoma.

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KOMPARACIJA REPRODUKTIVNIH KARAKTERISTIKA, LABORATORIJSKOG I BIOHUMORALNOG NALAZA KOD BOLESNICA SA KARCINOMOM ENDOMETRIJUMA I MIOMOM UTERUSA

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SAŽETAK

Karcinom endometrijuma je najčešći maligni tumor a miom uterusa najčešći benigni tumor ženskog genitalnog trakta. Cilj ovog istraživanja bio je da komparira:

- biološko-reproduktivne karakteristike bolesnica obolelih od karcinoma endometrijuma i mioma uterusa (vreme javljanja menarhe, vreme javljanja menopauze, paritet, broj pobačaja, dužinu reproduktivnog života i vreme javljanja bolesti u odnosu na menopauzu);

- metaboličko-biohumoralne karakteristike bolesnica obolelih od karcinoma endometrijuma i mioma uterusa (vrednosti holesterola, triglicerida, glikemije, krvnog pritiska i telesne mase).

Adekvatnom statističkom analizom utvrdjeno je da su bolesnice koje boluju od karcinoma endometrijuma statistički značajno starije od bolesnica koje boluju od mioma uterusa, da se menarha javlja ranije, da menopauza nastupa kasnije, da dužina reproduktivnog života traje duže, da je prisustvo insulin zavisnog dijabeta i slučajno ustanovljene hiperglikemije češće, da imaju poremećaj metabolizma holesterola i da su veće telesne mase. Takodje je potvrdjeno da je povećanje sistolnog krvnog pritiska statistički značajno. Istom metodom je utvrdjeno da broj porodjaja i broj pobačaja, vrednosti triglicerida i dijastolnog pritiska nemaju statističku značajnost.

Reproduktivne karakteristike, naročito one vezane za fiziologiju i patofiziologiju menstrualnog ciklusa i metaboličko-biohumoralna dešavanja tokom života u peri i postmenopauzi imaju značaj i mogu uticati na nastanak karcinoma endometrijuma.

Ključne reči: **karcinom endometrijuma, miom uterusa, metabolički sindrom, menstrualni ciklus, menopauza**