

## STATISTICAL COMPARISONS OF GYNECOLOGIC CANCER AGE GROUPS IN THE OB-GYN DEPARTMENT OF THE ARAD COUNTY HOSPITAL DURING THE 2000-2004 PERIOD

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**ABSTRACT.** The purpose of this study is to statistically compare the mean ages of the patients with gynecologic cancer in our hospital during the 2000-2004 interval. The data was collected from the Histopathology Exams (HPE) registers. During the five year period, a number of 619 gynecological cancers were diagnosed in our hospital by the anatomopathology department: 367 cervical cancers (59.29%), 191 uterine cancers (30.86%), 50 ovarian cancers (8.08%), and 11 vulvar cancers (1.78%); the histological specimens were obtained from biopsies and/or surgery. The mean ages were  $53.66 \pm 13.29$  years for cervical cancer (age range 23-86 years),  $61.41 \pm 8.82$  years for uterine cancer (age range 38-82 years),  $54.44 \pm 13.84$  years for ovarian cancer (age range 21-77 years); vulvar cancer (age range 53-77 years) did not have a normal distribution of the cases. The age groups with the most patients were: 41-50 years for cervical cancer (104 cases or 28.34%), 51-60 years for uterine cancer (81 cases or 42.41%), 51-60 and 61-70 years for ovarian cancer (14 cases or 28% each), and 61-70 years for vulvar cancer (4 cases or 36.36%). After performing Student's test, the statistically significant difference was cervical cancer vs uterine cancer ( $p < 0.05$ ). The mean ages of different cancer types in our study are similar to those in literature.

**KEYWORDS:** cervical cancer, uterine cancer, vulvar cancer, ovarian cancer, vaginal cancer, statistical significance, Student's t-test

### INTRODUCTION

The mean age for cervical cancer is 51.4 years, with the number of patients evenly divided between the age groups 30 to 39 and 60 to 69 years (Parkin et al, 2001); another retrospective study involving 36.122 patients diagnosed with cervical cancer during a 15 year period (1991-2005) revealed, over three five-year intervals, a mean age of  $53.9 \pm 13.3$  years from 1991 to 1995,  $55.0 \pm 14.9$  years from 1996 to 2000, and  $56.7 \pm 14.7$  years from 2001 to 2005 (Huang et al, 2011).

The average age at diagnosis of endometrial carcinoma is approximately 60 years according to one study and approximately 5% of women are diagnosed younger than age 40, with up to one quarter present before menopause (Burke et al, 1996). Other authors have found that, in case of cancer of the uterine corpus, the average age of patients with endometrioid cancer is approximately 63 years, while the average age of patients with nonendometrioid cancer is approximately 67 years (Creasman et al, 2006).

The peak incidence of invasive epithelial ovarian cancer is situated between 56 and 60 years (Heintz et

al, 2003). Approximately 80 to 90% of ovarian cancers, including borderline forms, occur after age of 40 years, whereas 30% to 40% of malignancies occur after the age of 65. The median age at diagnosis for sporadic disease is 60 years, although patients with a genetic predisposition may develop this tumor earlier, often in their fifth decade (Jemal et al, 2007). Mean ages for ovarian metastases from other cancer sites in two studies were, according to two studies, 55 years (Kondi-Pafiti et al, 2011) and 51 years (Guerriero et al, 2011).

The mean age of patients with vaginal cancer is 68 years for invasive cancer and 58 years for in situ neoplasia (Wu et al, 2008). As for vaginal cancer, about 80% of patients are older than 50 years (Beller et al, 2006); squamous cell carcinoma is found most often in women aged 60 or older, while adenocarcinoma is found most often in women aged 30 or younger (<http://www.cancer.gov/cancertopics/pdq/treatment/vaginal/Patient>). Primary invasive carcinoma of the vagina is predominantly a disease of elderly women;

70% to 80% of cases are diagnosed in women older than 60 years (Beller et al, 2006).

Patients with vulvar cancer have a mean age of 62 years in one study (Klaus et al, 2010) and between 65 and 70 years in other studies (Beller et al, 2006; Shepherd et al, 1998).

Data from SEER:

([http://seer.cancer.gov/csr/1975\\_2008/results\\_single/sect\\_01\\_table.11\\_2pgs.pdf](http://seer.cancer.gov/csr/1975_2008/results_single/sect_01_table.11_2pgs.pdf)) shows the following for the 2004-2008 period:

-the median age at diagnosis for cancer of the cervix uteri was 48 years of age, with the following age distribution: 0.2% were diagnosed under age 20; 14.3% between 20 and 34; 25.8% between 35 and 44; 23.9% between 45 and 54; 16.4% between 55 and 64; 10.6% between 65 and 74; 6.4% between 75 and 84; and 2.5% 85+ years of age.

(<http://seer.cancer.gov/statfacts/html/cervix.html>)

-the median age at diagnosis for cancer of the corpus and uterus, NOS, was 61 years of age, with the following age distribution: 0.0% were diagnosed under age 20; 1.6% between 20 and 34; 6.1% between 35 and 44; 19.2% between 45 and 54; 31.8% between 55 and 64; 22.1% between 65 and 74; 14.2% between 75 and 84; and 4.8% 85+ years of age

(<http://seer.cancer.gov/statfacts/html/corp.html>)

-the median age at diagnosis for cancer of the ovary was 63 years of age, with the following age distribution: 1.2% were diagnosed under age 20; 3.5% between 20 and 34; 7.3% between 35 and 44; 19.1% between 45 and 54; 23.1% between 55 and 64; 19.7% between 65 and 74; 18.2% between 75 and 84; and 8.0% 85+ years of age

(<http://seer.cancer.gov/statfacts/html/ovary.html>)

-the median age at diagnosis for cancer of the vagina was 68 years of age

-the median age at diagnosis for cancer of the vulva was 68 years of age, with the following age

distribution: 0.1% were diagnosed under age 20; 2.0% between 20 and 34; 7.3% between 35 and 44; 15.9% between 45 and 54; 18.3% between 55 and 64; 17.5% between 65 and 74; 24.3% between 75 and 84; and 14.6% 85+ years of age  
 (<http://seer.cancer.gov/statfacts/html/vulva.html>).

## MATERIALS AND METHOD

Data regarding the cases of gynecological cancers diagnosed during the 2000-2004 period was collected from the anatomopathology department of the hospital and statistically analyzed.

## RESULTS

During the five year period, a number of 619 gynecological cancers were diagnosed in our hospital by the anatomopathology department: 367 cervical cancers (59.29%), 191 uterine cancers (30.86%), 50 ovarian cancers (8.08%), and 11 vulvar cancers (1.78%); the histological specimens were obtained from biopsies and/or surgery.

The mean ages were  $53.66 \pm 13.29$  years for cervical cancer (age range 23-86 years),  $61.41 \pm 8.82$  years for uterine cancer (age range 38-82 years),  $54.44 \pm 13.84$  years for ovarian cancer (age range 21-77 years); vulvar cancer (age range 53-77 years) did not have a normal distribution of the cases. The age groups with the most patients were: 41-50 years for cervical cancer (104 cases or 28.34%), 51-60 years for uterine cancer (81 cases or 42.41%), 51-60 and 61-70 years for ovarian cancer (14 cases or 28% each), and 61-70 years for vulvar cancer (4 cases or 36.36%).

Figure 1 shows the distribution of the cancer types, while table 1 and figures 2-5 show the cancer age groups. Figure 6 compares the age groups of the cancers with normal distribution. Figure 7 compares the age group distribution.

Age (years)	21-30	31-40	41-50	51-60	61-70	71-80	81-90
Cervical	5.18	11.17	28.34	24.80	18.26	10.08	2.18
Uterine	0.00	1.05	9.95	42.41	28.27	17.28	1.05
Ovarian	6.00	10.00	18.00	28.00	28.00	10.00	0.00
Vulvar	0.00	0.00	0.00	18.18	36.36	45.45	0.00

Table 1 Cancer age groups

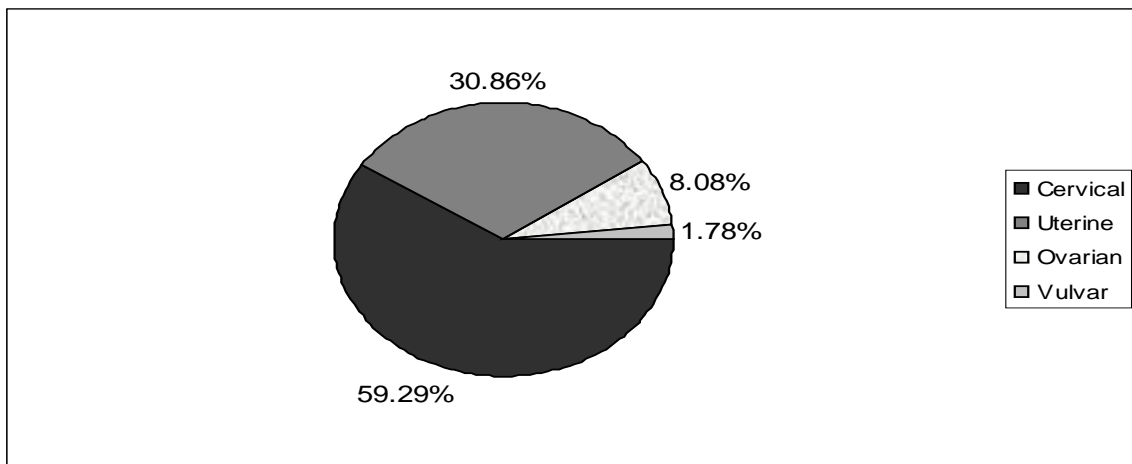


Fig. 1 Distribution of gynecological cancers

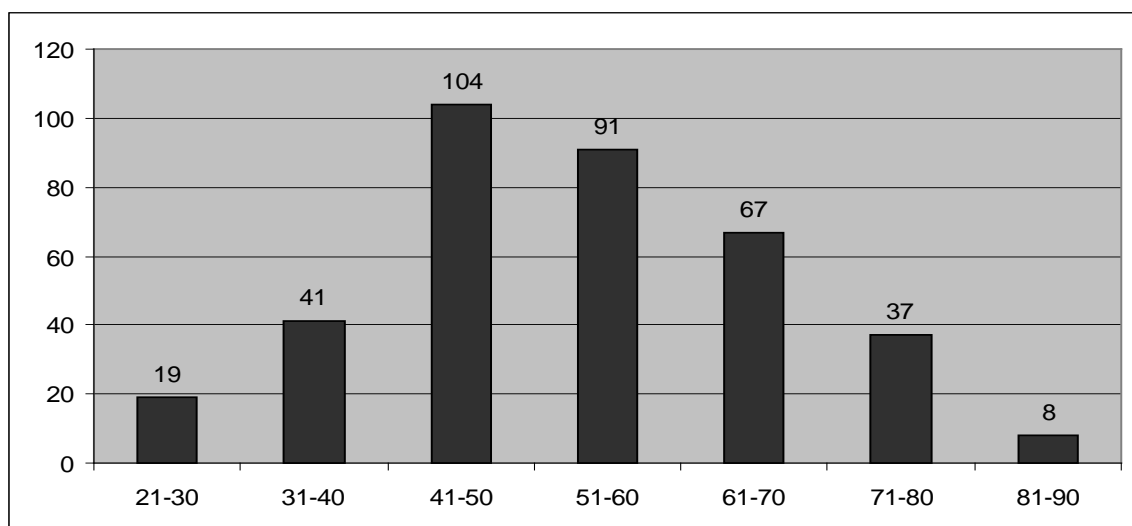


Fig. 2 Cervical cancer age groups

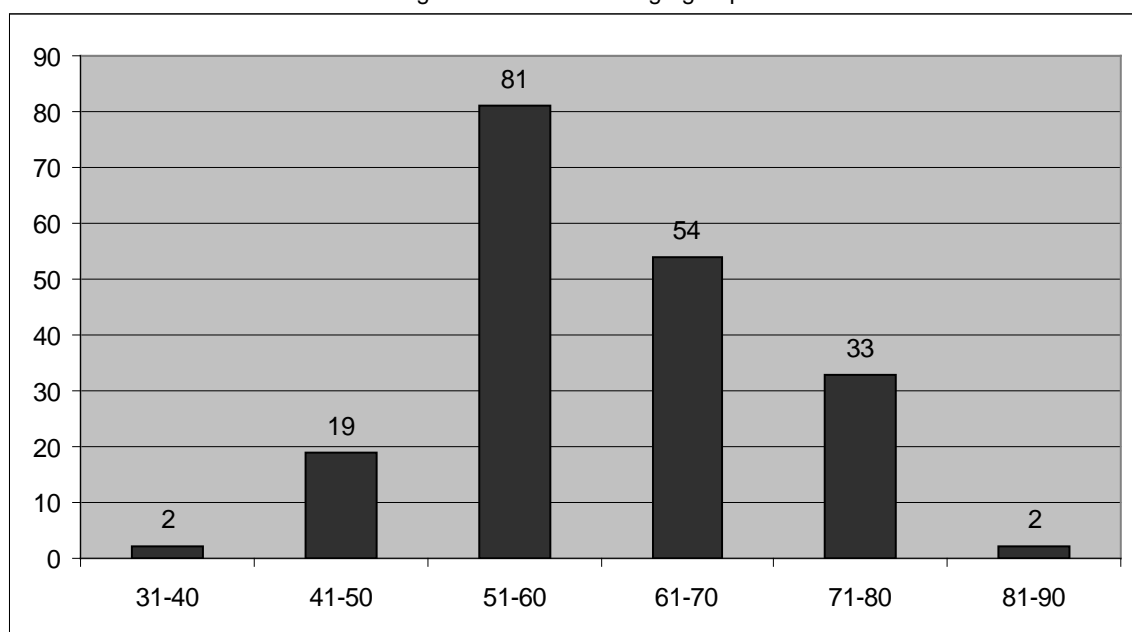


Fig. 3 Uterine cancer age groups

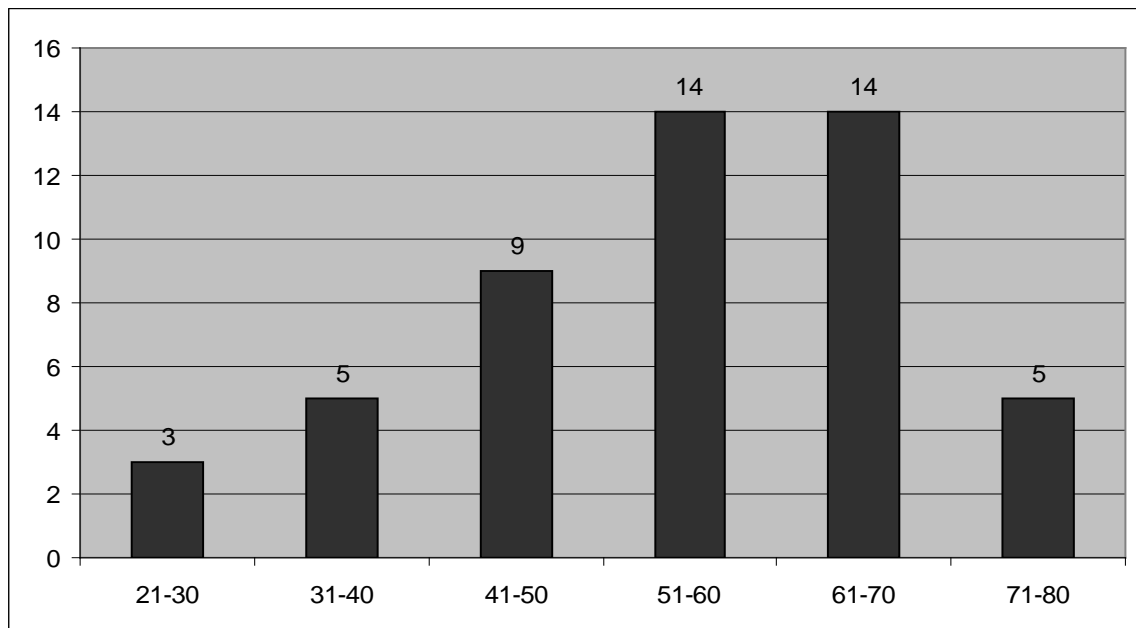


Fig. 4 Ovarian cancer age groups

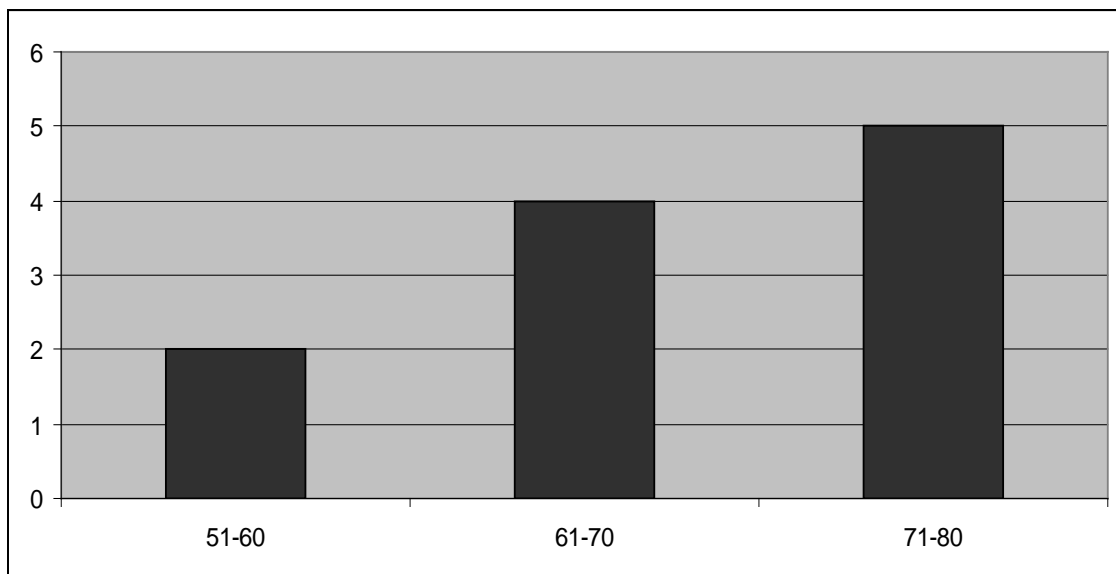


Fig. 5 Vulvar cancer age groups

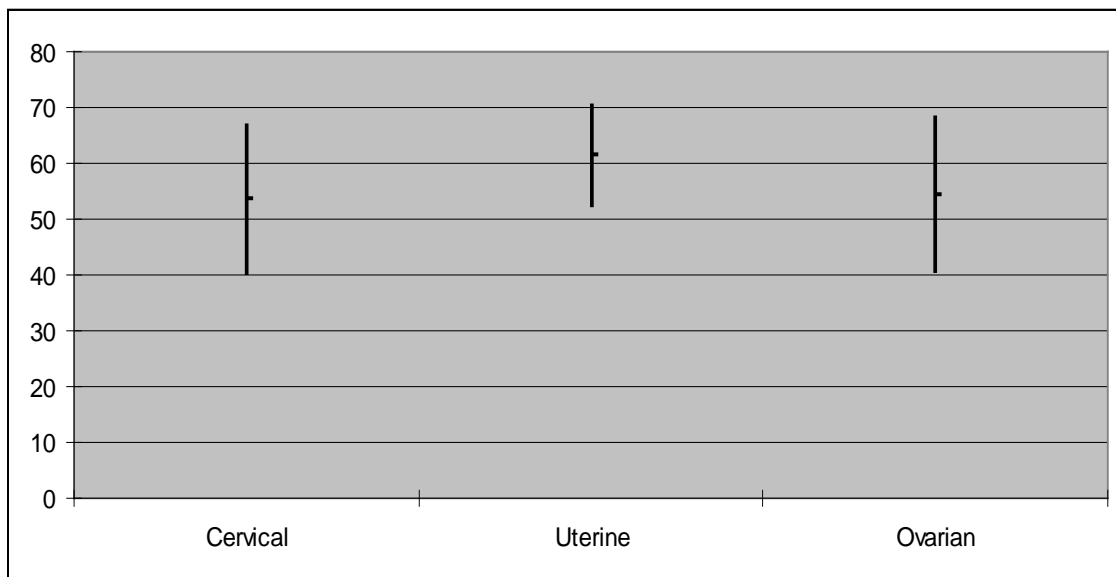


Fig. 6 Age comparisons (mean±SD)

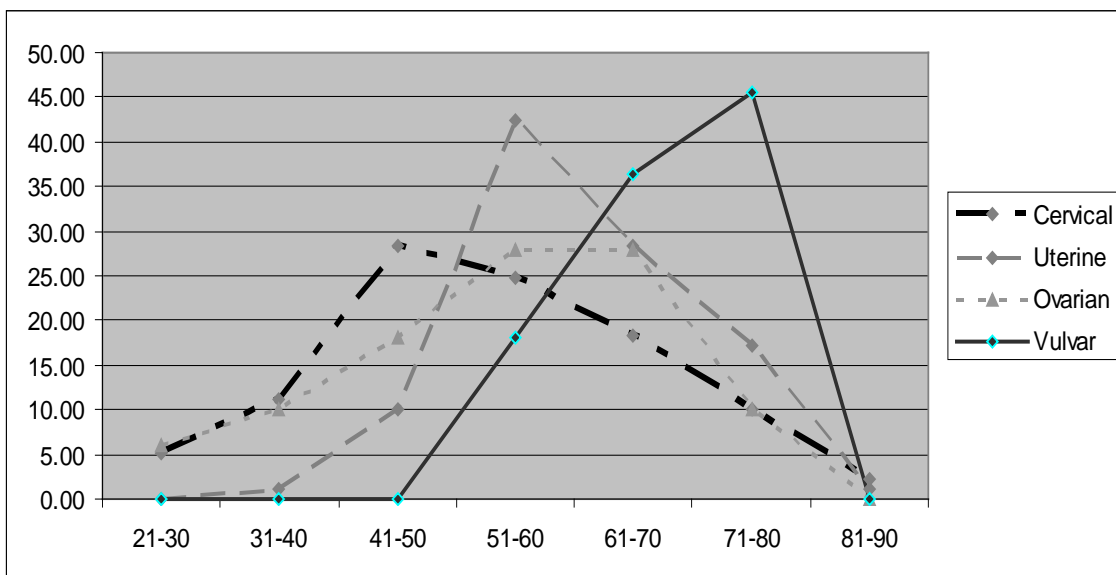


Fig. 7 We compared the mean ages of the cancer types with normal distribution of the cases by using Student's t-test; the results are shown in table 2.

Type	p value
Cervical vs. uterine	<b>&lt;0.05</b>
Cervical vs. ovarian	0.866
Uterine vs. ovarian	0.061

Table 2 Gynaecological cancer age comparisons

## DISCUSSIONS, CONCLUSIONS

The mean ages of the patients from the groups with five gynaecological cancer types from our study are similar to those in literature:

-53.66±13.29 years for cervical cancer (367 cases) versus 51,4 years (1), 53.9±13.3 years, 55.0±14.9, 56.7±14.7 (2) and 48 years (17);

-61.41±8.82 years for uterine cancer (191 cases) versus 60 years (3) and 61 years (18);

-54.44±13.84 years for ovarian cancer (50 cases) versus 60 (6) and 63 years (19);

Unfortunately, there are still many cases of such cancers, with many cases in advanced and often

incurable stages due to several factors, including lack of screening, lack of patient information and patients neglecting signs and symptoms or being afraid of going to the physician.

Paradoxically, more than half of the cases diagnosed in our hospital are cervical cancers, although premalignant cervical conditions are the easiest to diagnose both clinically and by laboratory methods, especially the Pap smear.

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