

OBSERVATIONS CONCERNING THE INCIDENCE OF DIFFERENT CANCER FORMS IN THE BACAU COUNTY POPULATION

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Key words: primary cancer, metastases, affected organs, statistical processing

INTRODUCTION

Cancer is the expression of a special disequilibrium of the body that causes the formation of tissues with invading local characters and then remotely in the rest of the body. The imbalance occurs through the interaction of carcinogens and the body, when both categories of factors deviate from normal, affecting the balance of organ and tissue forms and functions.

In the last decades, a number of scientific and epidemiological research findings have accumulated on the basis of which assessments and approximations can be made on the role of the factors that cause the disease and, in the final analysis, prophylactic measures may be applied to reduce its frequency and the proportion of deaths.

Morbidity by cancer, after location at different organs, differs from country to country. In Romania mortality through cancer is constantly evolving, while in European countries it is relatively constant. In 2011-2015 in Romania, cancer mortality rates have doubled. The main causes of death by malignant tumors in the Romanians are gastric cancer (which has however recorded a decrease in incidence), colorectal, lung, mammary gland, uterine cervix and prostate.

At international level, cancer is responsible for 12.5% of deaths worldwide, outpacing the total number of AIDS, tuberculosis and malaria victims. The latest estimates foresee that in 2030, 26.4 million people will be diagnosed with cancer, and 17 million will die for this. Most men die from lung cancer, while women die mostly due to breast cancer. The report also shows that the number of men who get sick of cancer and die because of it is higher in some countries twice that of women. Soon, cancer will overcome heart disease in terms of the number of people who die globally because of these diseases. The number of cancer cases will also increase due to the aging of the population in many countries (cancer is more common in the elderly) as well as the increase in the number of smokers in poor countries.

The European Cancer Study 2015 shows that the number of cancer cases worldwide has doubled over the last 25 years, and that the number of new cases will double over the next 16 years. Half of

these cases are 60 years of age and 20% are children up to five years. According to the same study, the most common cancers are breast, colorectal, stomach and prostate.

Cancer has become the leading cause of mortality in the world, with millions of people losing their lives because of this disease that is believed to become a true epidemic by 2050. There are over 100 types of neoplasm, some worse than others.

MATERIAL AND METHODS

The biological material was tissue samples of various etiologies derived from benign and malignant tumors, collected from 1016 patients diagnosed with neoplasm or suspicion of neoplasm coming from the Bacău County Emergency Hospital during the months of May, June and July 2016. Biopsy tissue fragments were processed and interpreted by serial technique in the Pathological Anatomy Laboratory of Bacău County Emergency Hospital. Cases of cancer were recorded and processed statistically by IBM SPSS Statistics 20 program.

RESULTS AND DISCUSSIONS

The results obtained were statistically interpreted and recorded in the following figures.

In May 2016 the situation is the following. Of the 378 investigated patients, 59.95% were women, while men had a percentage of 40.05% (Figure 1). The most affected age groups were those over the age of 51, the highest percentage was identified in the age group 61-65 years (21.2%), but from 51 years old it can be seen from Figure 2 that the proportion of patients identified with cancer increases substantially. 68.70% of patients come, as expected, from urban areas (Figure 3). Most of the identified cases had malignant cancers (98.4%) and only a very small number (1.6%) had benign forms (Figure 4). In the investigated men, the most common types of cancer were prostatic cancer (36.8%), colon cancer (22.4%) and lung cancer (12.5%), in descending order (Figure 5). In women, predominant types of cancer were breast cancer (57.1%) and colon cancer (11.5%) (Figure 6).

Primary forms of cancer are the most numerous (98.4%), while metastatic generative forms are 1.6% (Figure 7). More frequent metastases are bone (5.7%) and liver (2.2%), as shown in Figure 8

If we refer to the histogenetic origin of the identified cancers we can say that predominant is ectodermal (37.20%), followed by endodermic (33.69%) and mezodermic (29.11%). The percentages are quite close, so there is no clear histological preference for installing a type of cancer.

In June 2016 the situation is similar. Of the 434 investigated patients, 57.5% were women, while men had a 42.5% (Figure 10). The most affected age groups were all over 51 years of age, the highest percentage being identified in the age group 61-65 years (17.6%), but starting with 51 years, it can be seen from fig. 11, that the percentage of patients identified with cancer increases substantially. From urban areas, 64.20% of the patients come from rural areas and 35.80% from rural areas (Figure 12). Most of the identified cases had malignant cancers (99.1%) and only a very small number (0.9%) presented benign forms (Fig.13). In the batch of investigated men, the most common types of cancer were, in decreasing order (Figure 14), prostate cancer (27.7%), lung cancer (21.7%), colon cancer (20.1%) and gastric cancer (4.3%). In women (Fig.15), predominant cancers were breast cancer (50.4%), colon cancer (13.2%) and ovarian cancer (8.0%).

Primary forms of cancer are the most numerous (92.3%), while metastatic generating forms are higher than those in May, 7.7% (Figure 16). More frequent metastases (Figure 17) are bone (4.7%) and liver (1.4%).

The histogenetic origin of the identified cancers is endodermic (38.9%) followed by ectodermal (30.8%), and mezodermic (30.3%); Therefore, there is practically no histological preference for the occurrence of cancer (Figure 18).

In July 2016, the situation is also similar to previous months of investigation. Of the 204 investigated patients, 61.6% were women, while men had a 38.4% (Figure 19). The most affected age groups were all over 51, the highest percentage being identified in the age group 61-65 years (21.2%), but starting with 51 years, it can be seen from Figure 20 that the proportion of patients identified with cancer increases substantially. 70.0% of the patients come from urban areas and 30.0% from rural areas (Figure 21). All cases investigated in July were malignant, 100% (Fig. 22). In the group of investigated men, the most common types of cancer were, in decreasing order (Figure 23), prostate cancer (28.2%), colon cancer (24.4%), and lung cancer (19.2%). In women (Figure 24), predominant types of cancer were breast cancer (48.4%), colon cancer (14.3%) and lung cancer (7.9%).

Primary forms of cancer are the most numerous (93.6%), whereas metastatic generative forms are 6.4% (Figure 25). More frequent

metastases (Figure 26) are also bone (2.5%), pulmonary (2.5%) and hepatic (1.0%).

The histogenetic origin of the identified cancers (Figure 27) is endodermic (38.9%), ectodermal (31.5%), followed by and mezodermic (29.6%).

The statistical situation of neoplastic disease in men investigated in the 3 months of study (Figure 28) shows a predominance of prostate cancer (31.2%), followed by colon cancer (21.7%) and lung cancer (17.9%). In women (Figure 29), the overall situation in the 3 months of investigation is as follows: breast cancer dominates female neoplastic pathology (52.5%), followed by colon cancer (12.8%), ovarian cancer (6.5%) and lung (6.3%).

Of course, some cancers are gender-specific, such as breast, breast, ovarian in women, or prostate cancer in men, but other cancers may occur in both sexes, such as colon, pulmonary or gastric cancer. A general statistical situation in the whole group of patients investigated over the 3 months - 1016 patients (Figure 30) shows, in fact, the already clear situation, namely the high incidence of female breast cancer (52.5%) and prostate cancer among males (31.2%), but also a fairly high frequency of colon cancer (17.2%) and lung cancer (12.1%) in both sexes.

CONCLUSIONS

From our study results the following conclusions:

- Cancer has become an increasingly common disease that affects different tissues and organs and is growing at a lower age.
- From the total of patients investigated in the 3 months, 59.68% were women.
- Of all the investigated patients, there is a high risk of cancer after the age of 51, when the number of cases has increased considerably in all months of study, the highest percentage of cases being recorded in the group Age 61-65 years.
- 67.63% of the patients came from the urban environment; The higher percentage of urban illnesses can be explained by the increased prevalence of risk factors such as urban or environmental air pollution, smoking, excessive alcohol consumption, disorderly lifestyle, poor eating behavior, unprotected sex behaviors, exposure to carcinogenic chemicals, to ionizing radiation, etc.
- In the total of 1016 investigated patients, most were diagnosed with malignant cancers (99.16%).
- Prostate cancer (31.2%) in men and breast cancer (52.5%) in women were predominant, but both sexes had relatively high rates of colon cancer (17.2%) and lung cancer (12.1%).

- The registered primary cancers are predominant (94.76%), while the metastatic forms recorded only 5.24% of the cases.
- Of the total investigated patients, only 0.84% were benign tumors.
- As a histological background, it seems that cancer forms have no preference, however, in our group of patients, the registered cancers were predominantly of endodermic origin (37.16%).

ABSTRACT

1016 patients diagnosed with neoplasm or suspicion of neoplasm from the Bacau Emergency County Hospital were investigated during the months of May, June and July 2016. Biopsy tissue fragments were processed and interpreted by the technique of the serial sections in the laboratory of pathological anatomy. Cases of cancer were recorded and processed statistically by IBM SPSS Statistics 20 program. A general statistical situation in the whole group of patients investigated over the 3 months - 1016 patients, in fact, shows the already clear situation, namely the high incidence of breast cancer among women (52.5%) and prostate cancer among males (31.2%), but also a fairly high frequency of colon cancer (17.2%) and lung cancer (12.1%) in both sexes.

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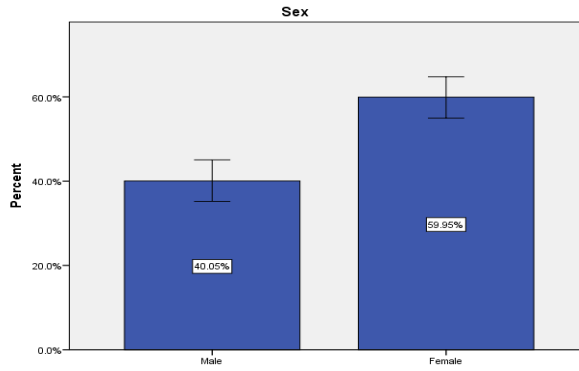


Fig. 1 Gender distribution of patients investigated in May

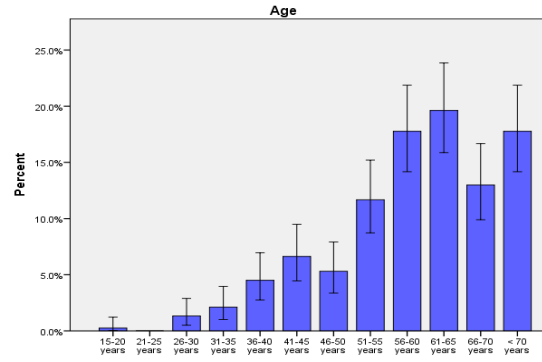


Fig. 2 Breakdown by age group of patients investigated in May

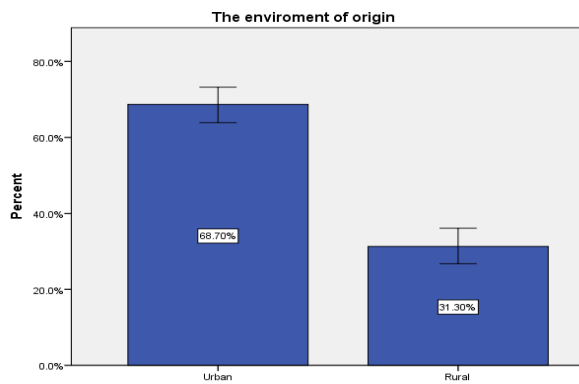


Fig. 3. Percentage distribution of patients investigated by the place of origin in May

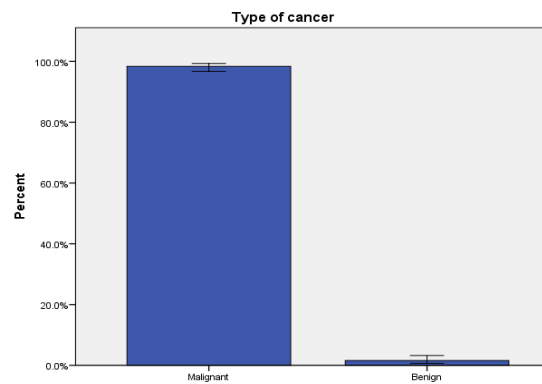


Fig. 4. Percentage distribution of identified cancers: malignant or benign in May

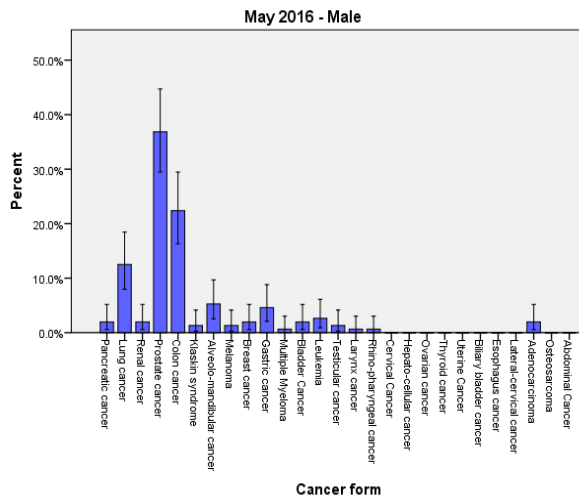


Fig. 5. Percentage distribution of neoplasms identified in men in May

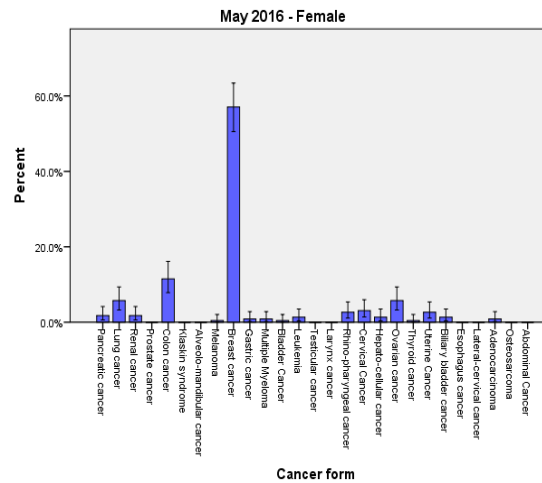


Fig. 6. Percentage distribution of neoplasms identified in women in May

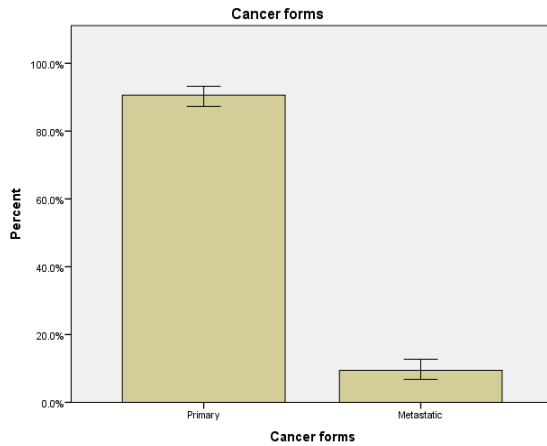


Fig. 7. Percentage distribution of primary and metastatic cancer in May

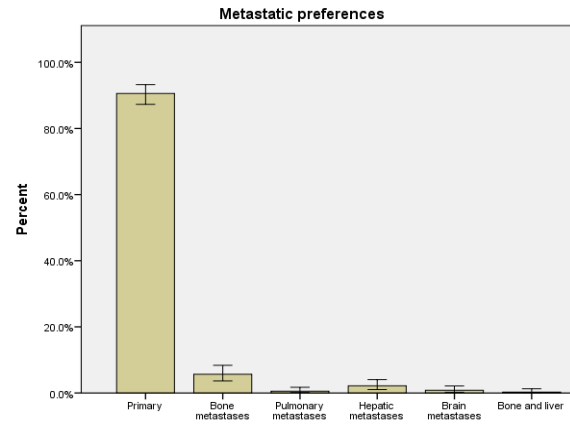


Fig. 8. Percentage distribution of metastatic cancers in May

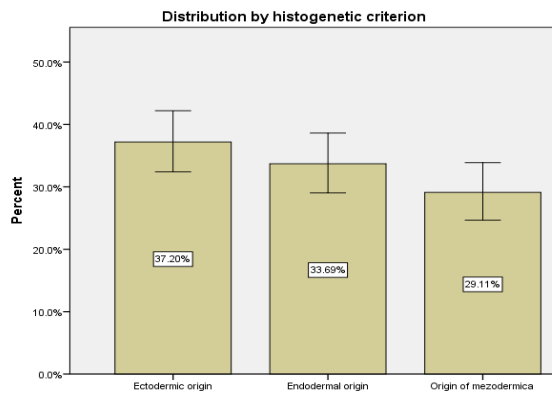


Fig. 9. Percentage extravasation of the histogenetic origin of the cancers identified in May

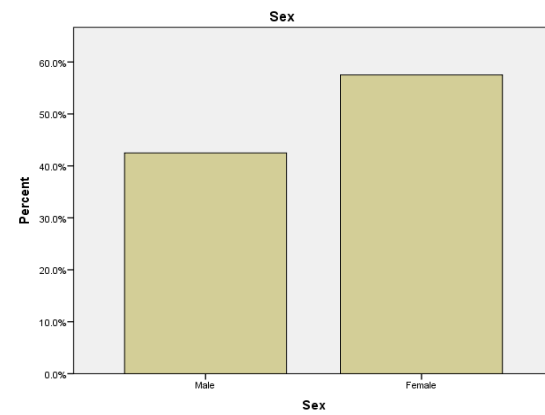


Fig. 10. Gender distribution of patients investigated in June

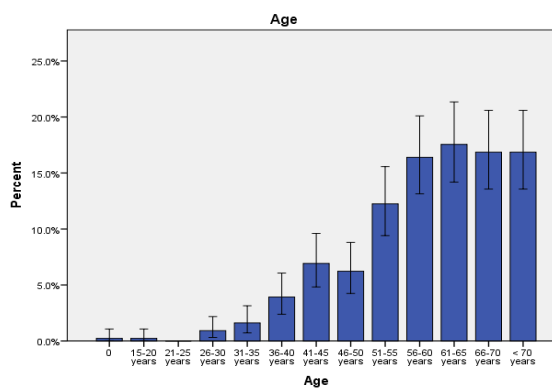


Fig. 11. Breakdown by age group of patients investigated in June

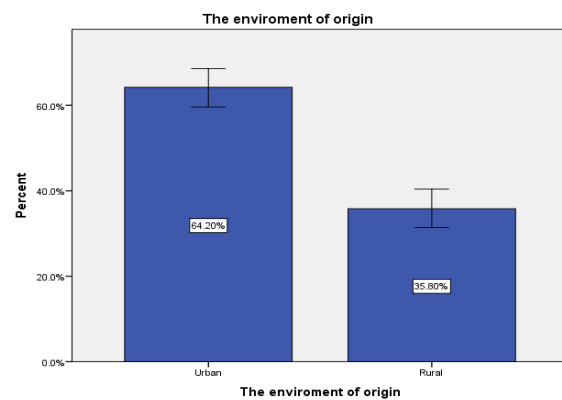


Fig. 12. Percentage distribution of the investigated patients by the environment of origin in June

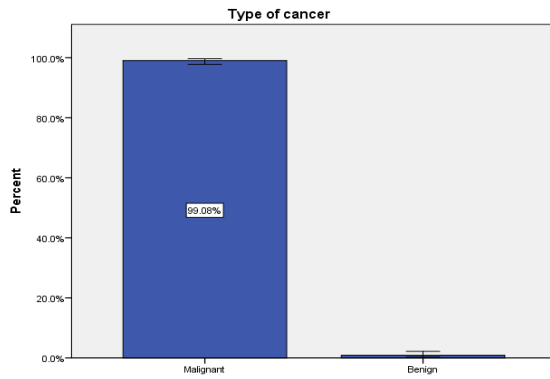


Fig. 13. Percentage distribution of identified types of cancer: malignant or benign, **in June**

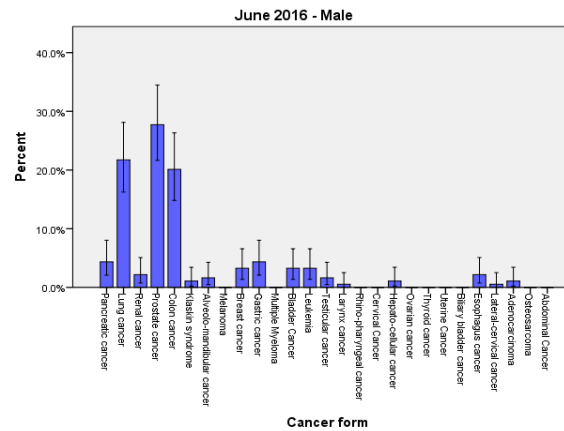


Fig. 14. Percentage distribution of neoplasms identified in men **in June**

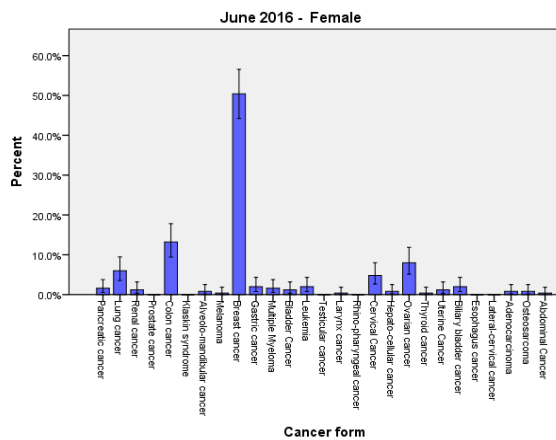


Fig. 15. Percentage distribution of neoplasms identified in women **in June**

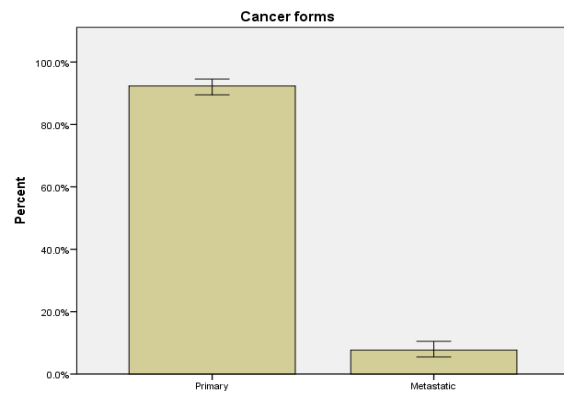


Fig. 16. Percentage distribution of primary and metastatic cancer **in June**

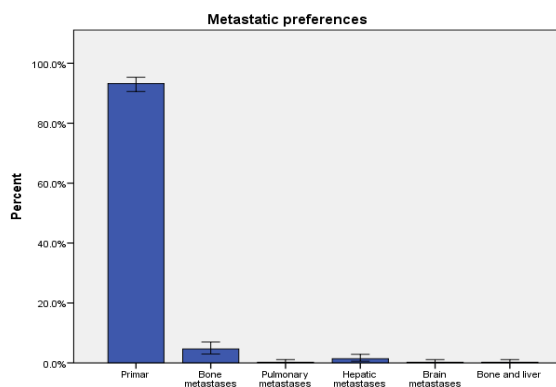


Fig. 17. Percentage distribution of metastatic cancers **in June**

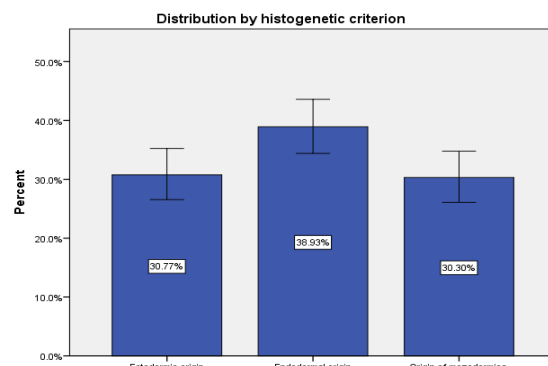


Fig. 18. Percentage extravasation of the histogenetic origin of the types of cancer identified **in June**

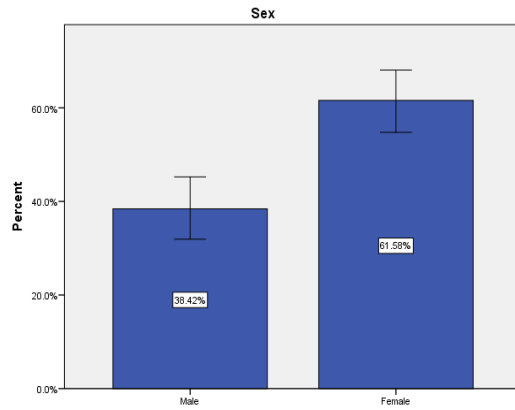


Fig. 19. Gender distribution of patients investigated in **July**

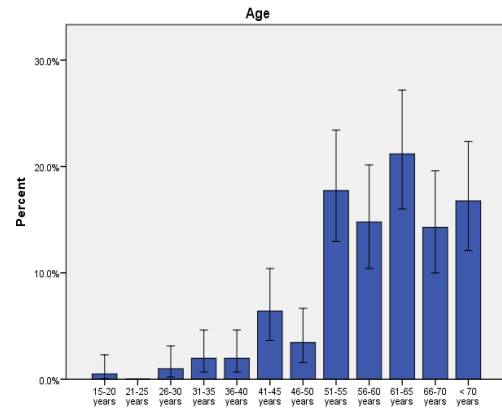


Fig. 20. Breakdown by age group of patients investigated in **July**

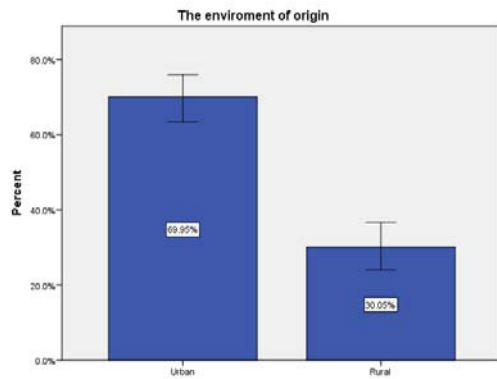


Fig. 21. Percentage distribution of patients investigated by the background, in **July**

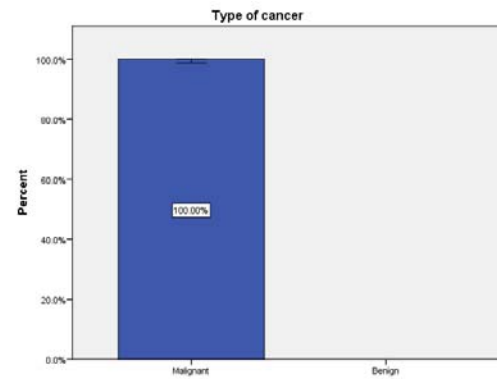


Fig. 22. Percentage distribution of malign or benign cancer types, in **July**

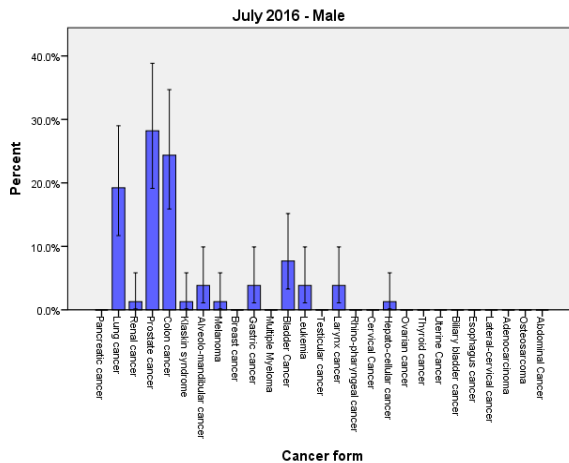


Fig. 23. Percentage distribution of neoplasms identified in males in **July**

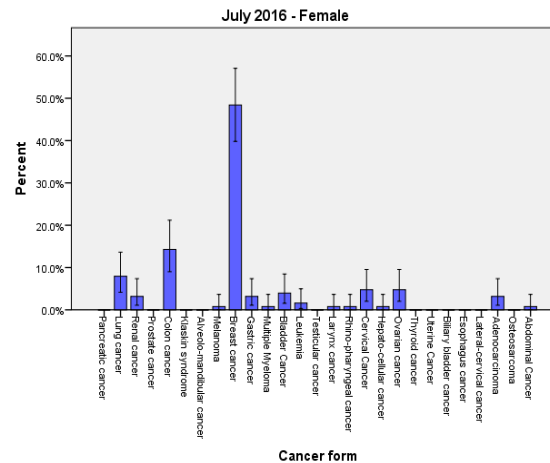


Fig. 24. Percentage distribution of neoplasms identified in women in **July**

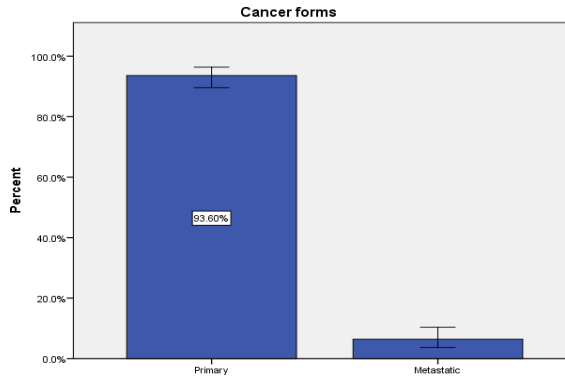


Fig. 25. Percentage distribution of primary and metastatic cancer **in July**

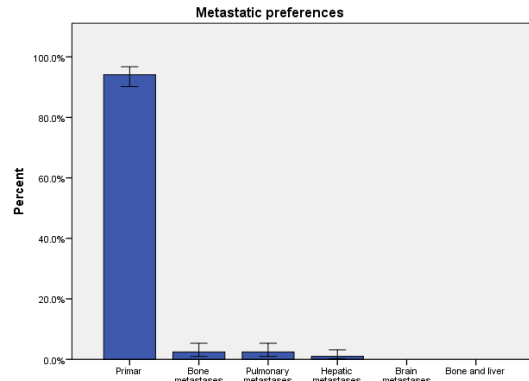


Fig. 26. Percentage distribution of metastatic cancers **in July**

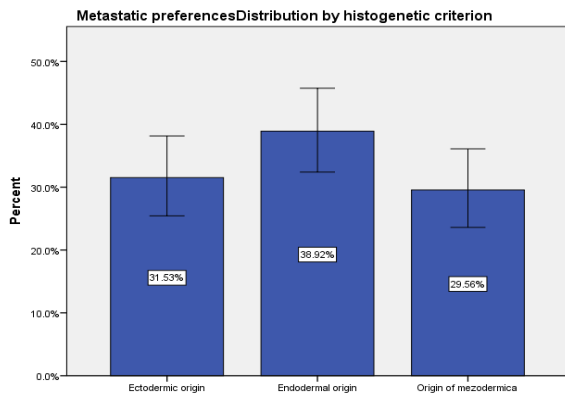


Fig. 27. Percent expression of the histogenetic origin of identified types of cancer **in July**

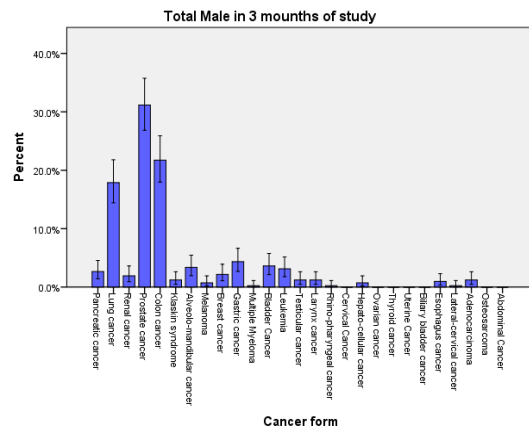


Fig. 28. Distribution of cancer cases in the investigated men **in the 3 months of study**

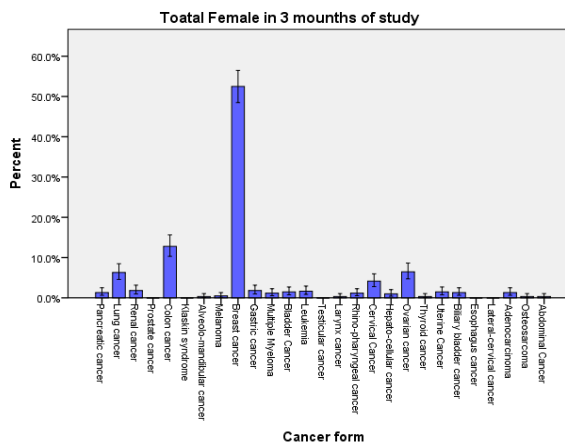


Fig. 29. Distribution of cancer cases in the groups of women investigated **in the 3 months of study**

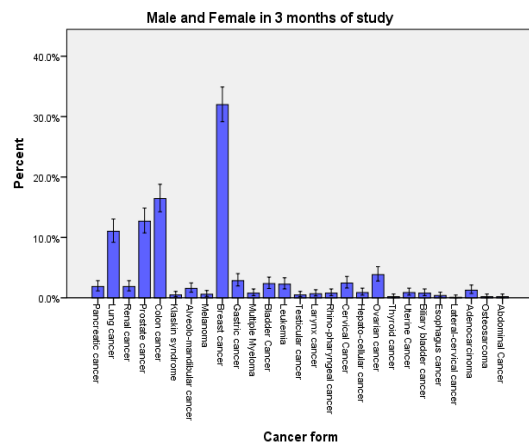


Fig. 30. Distribution of cancer cases in all investigated patients (1016 patients) **in the 3 months of study**