



## TRENDS IN GYNECOLOGIC ONCOLOGY BEFORE AND DURING COVID - 19 PANDEMIC IN TUZLA CANTON

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ISSN 0350-364X

DOI: 10.5457/667

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## ABSTRACT

**Aim:** The aim of this study was to assess the impact of the COVID-19 pandemic and its management on the rate of newly diagnosed cancers from the perspective of a tertiary referral center in Tuzla Canton.

**Methods:** All patients diagnosed with gynecological cancer at Department of Gynecology and Obstetrics, University Clinical Center Tuzla, in pre-pandemic, pandemic and post-pandemic period, were presented in this study.

Gynecological cancer was defined as one of the following diagnoses: ovarian or tubal carcinoma, cervical carcinoma, endometrial carcinoma, uterine sarcoma, vulvar carcinoma, vaginal carcinoma, and germ cell tumors.

A total of 579 patients with newly diagnosed cancers were collected in 2020. There were 109 newly diagnosed gynecological cancers in 2020., while in 2019 there were 134, and 136 in 2021. Numbers of gynecological cancers diagnosed during pandemic were compared to numbers in pre-pandemic and post-pandemic period.

**Results:** There was a total of 579 patients with newly diagnosed cancer in Clinical Center of Tuzla during 2020. That shows strong decline of newly diagnosed cancers compared to 2019 with 1030 newly diagnosed cancers. Of these 579 patients, 109 presented in 2020 with newly diagnosed gynecological cancers. That shows strong decrease compared to 2019. with 134 newly diagnosed gynecological cancers and 2021 with 136 gynecological cancers. In 2019. 4015 PAP tests were examined, with only 1917 PAP tests examined in 2020 (diagram 4). In 2019. we did 199 HPV typisation test, while in 2020. there were only 34.

**Conclusion:** The lockdown caused by COVID - 19 pandemic led to decreased number of routine examinations including annual PAP smear testing and HPV typisation tests. It also led to decrease number of other checkups. All of that led to decreased number of newly diagnosed gynecological cancers.

**Key words:** COVID - 19 pandemic, gynecological cancers, Oncology

## INTRODUCTION

The Coronavirus disease 2019 pandemic was very challenging for healthcare systems all around the world. COVID - 19 pandemic started in december 2019. in Wuhan, China. First COVID - 19 positive patient in Bosnia and Herzegovina was diagnosed in Banja Luka on 5.mart 2020., while nationwide lockdown was ordered few days after. In october, government ordered physical distancing measures.

We all witnessed that COVID-19 pandemic put healthcare systems into an unknown entity and made them put all possible resources to disposal for treatment of those patients. That left other patients vulnerable.

In case of gynecologic oncology patients both the diversion of resources and the

precautions taken to prevent exposure and spread of the virus have impacted every aspect of their disease course, from diagnosis to treatment, and even supportive care.

Results in Austria showed strong decline in newly diagnosed tumors during the lockdown [1]. Two-thirds of patients diagnosed during the pandemic presented with tumor-specific symptoms compared with less than 50% before the pandemic.

The upsetting findings of fewer cancer diagnoses were initially disseminated among the Dutch community on April 2, 2020, and again on April 15, 2020, by the Netherlands Comprehensive Cancer Organisation - which hosts the Netherlands Cancer Registry - to create awareness of this issue [2].

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## Received:

27.12.2022.

## Accepted:

4.1.2023.

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## Funding: none

## Competing interests: none

COVID - 19 pandemic has brought notable changes in cancer diagnosis in Tuzla Canton and whole country and it led to decrease in cancer diagnoses when compared to pre-pandemic period. Several arguments can explain this decrease. First, individuals with non-specific symptoms of cancer might have barriers to consulting general practitioner, including moral concerns about waisting practitioner's time for non-COVID symptoms or feeling anxiety of acquiring COVID - 19 in primary health-care settings. Second, hospital had to postpone diagnostic evaluation or had longer turnaround times for diagnostic evaluation. Third, gynecological screening examinations and routine checkups, including annual PAP smear testing were disrupted [3].

Meanwhile, strong decline in newly diagnosed cancers was observed in breast, colorectal, lung and prostate cancer in the USA and across Europe [4-7].

**AIM:** The aim of this study was to assess the impact of the COVID-19 pandemic and its management on the rate of newly diagnosed cancers from the perspective of a tertiary referral center in Tuzla Canton.

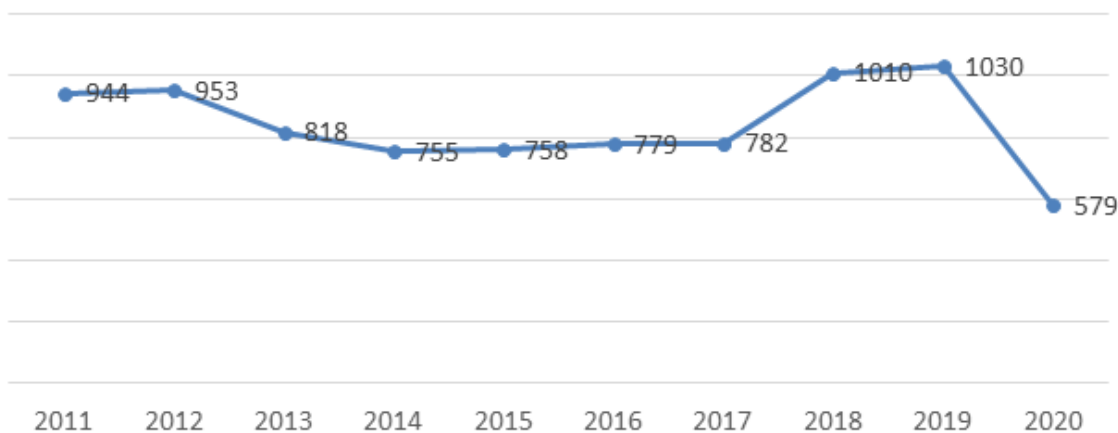
**METHODS**

All patients diagnosed with gynecological cancer at Department of Gynecology and Obstetrics, University Clinical Center Tuzla, in pre-pandemic, pandemic and post-pandemic period, were presented in this study.

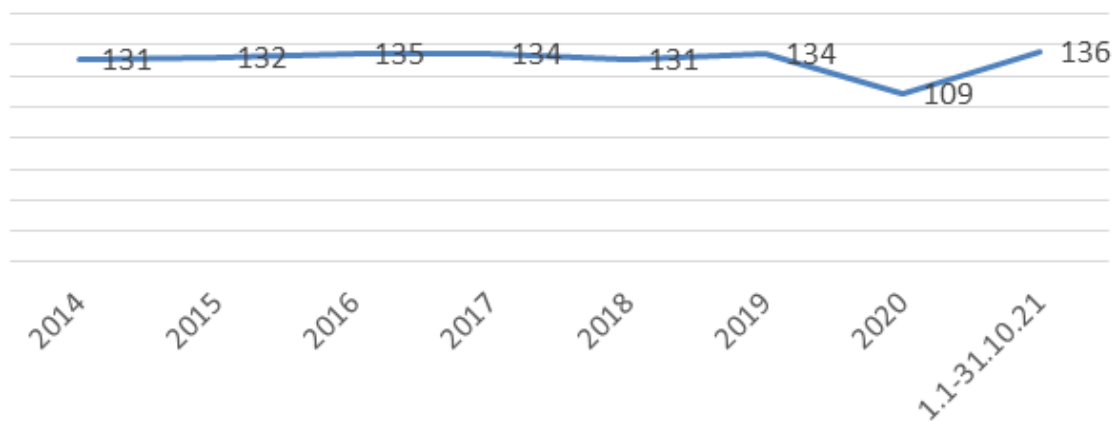
Gynecological cancer was defined as one of the following diagnoses: ovarian or tubal carcinoma, cervical carcinoma, endometrial carcinoma, uterine sarcoma, vulvar carcinoma, vaginal carcinoma, and germ cell tumors.

A total of 579 patients with newly diagnosed cancers were collected in 2020. There were 109 newly diagnosed gynecological cancers in 2020., while in 2019 there were 134, and 136 in 2021. Numbers of gynecological cancers diagnosed during pandemic were compared to numbers in pre-pandemic and post-pandemic period.

**RESULTS:** There was a total of 579 patients with newly diagnosed cancer in Clinical Center of Tuzla during 2020. That shows strong decline of newly diagnosed cancers compared to 2019 with 1030 newly diagnosed cancers (diagram 1).

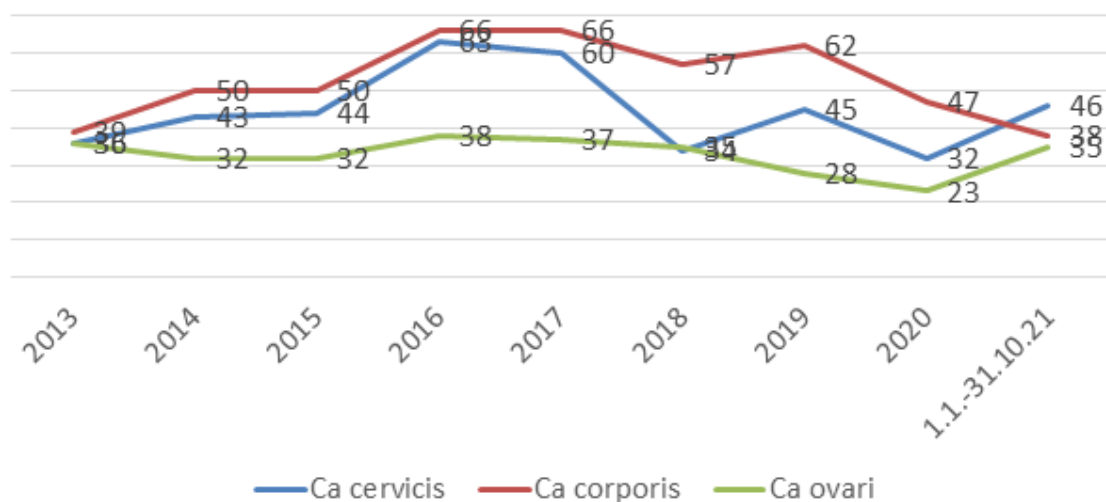


**Diagram 1.** Number of newly diagnosed cancers in Tuzla Canton in period 2011. to 2020.



**Diagram 2.** Number of newly diagnosed gynecological cancers in Tuzla Canton

Of these 579 patients, 109 presented in 2020 with newly diagnosed gynecological cancers. That shows strong decrease compared to 2019. with 134 newly diagnosed gynecological cancers and 2021 with 136 gynecological cancers (diagram 2).

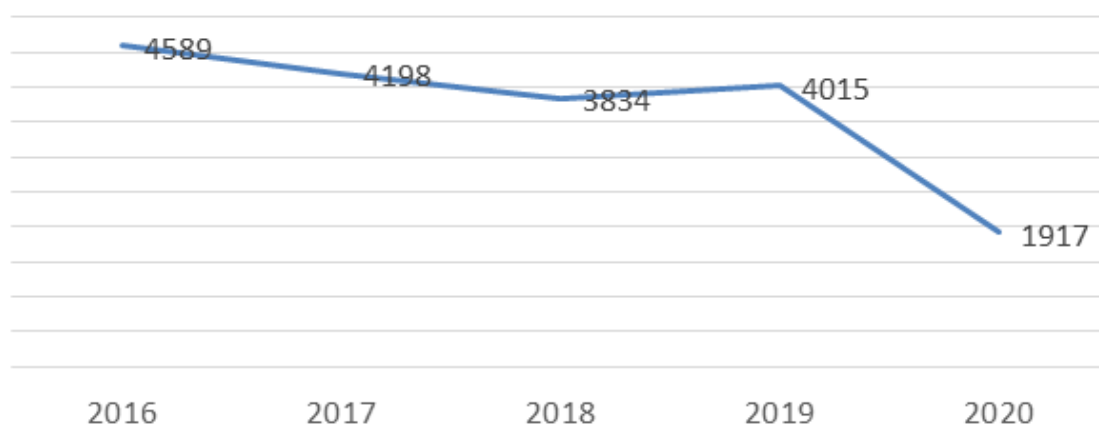


**Diagram 3.** Gynecological cancer types newly diagnosed in period from 2013 to 2021.

Out of 109 newly diagnosed gynecological cancers in 2020., there were 47 corporal uterine cancers, 32 cervical cancers, 23 ovarian cancers and 7 other gynecological cancers. In 2019. there were 62 corporal uterine cancers, 45 cervical cancers, 28 ovarian cancers. In 2021. number of endometrial cancers decreased (38) compared to 2020. while number of ovarian and cervical cancers increased (35 ovarian, 46 cervical) (diagram 3).

These upsetting findings could be explained with several arguments.

In 2019. 4015 PAP tests were examined, with only 1917 PAP tests examined in 2020 (diagram 4). In 2019. we did 199 HPV typisation test, while in 2020. there were only 34.



**Diagram 4.** Number of PAP test examined on UKC Tuzla prepandemic and during pandemic

In 2019. 937 diagnostic interventions were done. Of those 937, there were 787 endometrial abrasions and 150 biopsies. In 2020. only 613 interventions were done, with 504 endometrial abrasions and 109 biopsies.

**CONCLUSION**

The lockdown caused by COVID - 19 pandemic led to decreased number of routine examinations including annual PAP smear testing and HPV typisation tests. It also led to decrease number of other checkups. All of that led to decreased number of newly diagnosed gynecological cancers.

To guarantee adequate patient care, considerable efforts have been made during the lockdown to facilitate gynecological screening examinations with a minimized risk of a hospital acquired infection: COVID-19 symptom screening by questionnaires, temperature measurements, mandatory facemasks and optimized patients waiting time.

However, as our study shows, even with optimized pandemic management, a strong decline in newly diagnosed cancers was still observed.

Treatment delays in potentially curable disease could lead to inferior outcomes and have impact on the overall survival of our patients, with the risk of missing the optimal treatment window.

Those parameters points that routine checkups and preventive medicine should be more available even during pandemic period or it could cause delayed treatment of newly diagnosed cancers and therefore worst outcome.

The major limitations of the current study are its relatively small sample size of only 889 patients and its single-center observational character. Despite these limitations, we were able to demonstrate that the COVID-19 pandemic led to a strong decline in the detection rate of newly diagnosed gynecological and breast cancers, which is in accordance with the findings of other subspecialties.

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