




# Management of patients with ovarian cancer in the COVID-19 era

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## Abstract

At the beginning of 2020, coronavirus disease 2019 (COVID-19) spreads worldwide. Patients with ovarian cancer should be considered at high-risk of developing severe morbidity related to COVID-19. Most of them are diagnosed in advanced stages of disease, and they are fragile. Here, we evaluated the major impact of COVID-19 on patients with ovarian cancer, discussing the effect of the outbreak on medical and surgical treatment.

## KEYWORDS

chemotherapy, COVID-19, ovarian cancer, SARS-CoV, surgery

The coronavirus disease 2019 (COVID-19) outbreak started in December 2019, and received worldwide attention as it spread throughout China.<sup>1</sup> On 30 January 2020, the World Health Organization (WHO) declared the COVID-19 epidemic as a public health emergency of international concern and in March 2020, WHO declared it as a pandemic. As of 31 March 2020, there were 750 890 confirmed cases of infection in the world, 101 739 of whom were in Italy. The global death toll was 36 405 cases, of which 11 591 cases were in Italy.<sup>1,2</sup> We recognized that we must continue to provide the adequate medical care during this time for the patients affected by gynecological cancer. Here we discuss the possible treatment modalities for women affected by early or advanced ovarian cancer during the COVID-19 outbreak. We agreed that oncologic patients would be managed in dedicated COVID-19-free centers (HUBs). Patients were screened for fever and symptoms or direct exposure to COVID-19 subjects in the previous 2 weeks. A preoperative computed tomography scan was mandatory to identify those patients

with pulmonary infections for whom the execution of active oncologic treatments would be harmful their overall status. Additionally, patients were required to have a negative swab before admission into the HUBs.

There are growing concerns about the impact of COVID-19 on patients with ovarian cancer.<sup>3</sup> Patients with ovarian cancer are generally fragile, and particular attention is required to improve outcomes of those patients. We were guided by the following principles. In the early stage of disease, surgery is considered mandatory even in the COVID-19 era. Patients should have hysterectomy, bilateral salpingo-oophorectomy and peritoneal staging (the uterus and the other adnexal structures could be preserved in young women wishing to preserve their childbearing potential).<sup>4</sup> Lymphadenectomy during COVID-19 outbreak is controversial and, in our opinion, should be avoided, because no clear data support the beneficial effects of lymphadenectomy, especially if adjuvant chemotherapy is planned on the basis of tumor histology. Conversely, when node

status might impact the choice regarding chemotherapy, retroperitoneal staging should be performed. In patients with advanced stage disease at diagnosis, the use of primary cytoreductive surgery should be carefully considered. When extensive surgical procedures are anticipated in this setting, surgery should probably be avoided. Histological diagnosis could be obtained by image-guided biopsy or diagnostic laparoscopy (if possible, by using gasless technique). Owing to the lack of clear data suggesting the superiority of primary versus interval debulking surgery, the latter approach would permit the use of neoadjuvant chemotherapy followed by the debulking procedure when the effects of the pandemic have diminished.<sup>3,4</sup>

There are growing concerns related to the performance of surgical procedures in the COVID-19 era.<sup>5,6</sup> In patients harboring asymptomatic COVID-19 infection, there is evidence that surgery might be extremely detrimental.<sup>7</sup> Preoperative triage methods are of paramount importance to identify patients with COVID-19, thus minimizing possible complications. Another point deserving attention is the possible contamination of the staff working in the operating room during surgical procedures. Although open surgery should not be considered without risk, the gynecologic oncology community is wondering about the possible risk of contamination during laparoscopic procedures.<sup>6</sup> Studies on DNA viruses have suggested that viral components could be identified in surgical smoke and could potentially spread to nearby individuals. To date, there is no clear evidence that RNA viruses might remain active after exposure to electrocautery. Although the possibility of disease transmission through surgical smoke exists in humans, actual documented cases of pathogen transmission via surgical smoke are rare.<sup>4,6</sup> In our opinion, there is no clear evidence to support the concerns related to the adoption of laparoscopic surgery during COVID-19 outbreak. However, until good evidence is accumulated, we believe that health care providers should be using personal protection equipment that includes ultra-filtration systems placed on trocar valves to reduce possible contamination.<sup>8</sup>

In conclusion, we recommend that patients with ovarian cancer be treated in COVID-19 free HUBs. In case of active infection from COVID-19, surgical and medical treatments should be delayed. As a matter of general principle, extensive procedures should be avoided during the outbreak. Further attempts are needed to reduce in-hospital spread of COVID-19 and to promote the adoption of innovative and highly effective treatments to improve the outcomes of patients with ovarian cancer.

## CONFLICT OF INTERESTS

The authors declare that there are no conflict of interests.

## AUTHOR CONTRIBUTIONS

Conceptualization: GB; methodology: all authors; project administration: FR; supervision: FR; writing the original draft: GB, JC, CP, and VDD; writing, review, and editing: all authors.

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