



Management of Gynecologic Cancer During COVID-19 Pandemic: South Asian Perspective

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Abstract

Management of gynecological cancers has suffered during the pandemic, partly due to lockdown and partly due to directing resources to manage COVID-19 patients. Modification of gynecological cancer management during this pandemic is recommended. Cervical cancer patients who present with stage IA1 disease can have a delay of up to 8 weeks for surgical treatment, considering the slow tumor growth rate. Women with stages IA2, IB1, IB2, IIA1 must undergo radical hysterectomy and lymphadenectomy within 6 to 8 weeks. In areas where surgical treatment is not available, patients should be referred for radiation therapy/areas with adequate surgical expertise. The surgical option is attractive for early cancers during the COVID era, as it involves a single visit compared to the multiple visits required for chemoradiation. The value of lymph node staging needs to be reconsidered. Neoadjuvant chemotherapy should be given preference over primary cytoreductive surgery for advanced ovarian cancers. Surgeries, which demand extended surgical time such as Hyperthermic Intraperitoneal Chemotherapy and pelvic exenterations, should be avoided during this pandemic. For patients scheduled for interval surgery after two or three neoadjuvant cycles, six cycles of chemotherapy should be considered before surgery is performed. For early-stage, low-grade endometrial cancer, consideration should be given to medical management until surgery is possible. The above recommendations have been made keeping in mind the geography, patient load, and availability of resources available to health care providers from southeast Asia. They might not be applicable globally and every practitioner should take call regarding patient's management as per availability of resources and loco-regional circumstances. The implementation of recommended international guidelines for the management of gynecologic cancers should take precedence. Each modification to the standard approach should be approved by a multidisciplinary team depending on the condition of the patients and the locoregional circumstances.

Keywords

burden, 1st line treatment, adjuvant chemotherapy, cancer, cancer therapy, cancer survival, chemoradiation, early diagnosis, mortality, ovarian cancer

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Introduction

The first case of coronavirus was reported in India in Kerala on 30th January 2020, amid worldwide panic over the viral outbreak. As of now, millions of cases of coronavirus have been detected and thousands have died due to this disease. In India, 43 million persons are known to be infected with the virus as of May 2022, with an estimated 5.2 lakh deaths.¹ Since then, COVID-19 has caused a substantial impact on healthcare services in terms of delivery of essential services,

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availability of medicines and surgical procedures. Lockdown measures imposed to contain the pandemic have led to loss of work, difficulty in transportation services and financial disability, all of which have added to the inability to access healthcare services. Such disruption has been most pronounced in patients with malignancies, due to the highly critical nature of disease itself and long treatment periods which necessitates frequent visits to the hospitals, inpatient admissions, and immunosuppressive side effects.² The COVID-19 pandemic has led to unique challenges in treating cancer patients. These challenges are distressing for both cancer patients as well as the health care providers. Management of gynecological cancers has suffered during the pandemic, partly due to the lock down and partly due to directing resources to manage COVID-19 patients. Also, cancer patients are advised to stay home as they face higher risk of morbidity and mortality after contracting the novel coronavirus.

Currently, circumstances to treat cancer patients, vary broadly by region and hospital. Managing a cancer patient depends on COVID-19 prevalence, type of hospital, whether these hospitals are managing both COVID and non-COVID patients and available resources. Due to this reason, despite having many practice guidelines, individualization according to region and area needs is important. The risk related to COVID-19 is not over yet with the new strains coming up and relaxation of regulations regarding COVID-19. We are now in the reset phase of health services. In this article, we aim to provide a snapshot of the healthcare disruption in gynecologic practices due to the COVID-19 pandemic in India, the restructuring of services and changes in operational workflow adopted to circumvent the unprecedented challenges faced. The future of such practice as we adapt to the rapidly but continuously evolving pandemic as we move forward enduring new strains and recurring waves of COVID infection is also discussed.

Gynecological Cancer Burden in India

More than 1.3 million Indians are diagnosed with cancer every year and over 800,000 deaths are attributable to this deadly disease.³ The projected incidence of all cancer among Indian females was 712,758 in the year 2020, accounting to an incidence rate of 103.6/100,000 women, which was higher than for Indian males (679,421 men in the year 2020). Among female cancers, 155,630 cancers will be attributed to gynaecological malignancies which include cancers of the uterine cervix, uterine corpus, ovary, vagina, vulva, and gestational trophoblastic diseases. It was predicted that 1 in 36 Indian women would be diagnosed with a gynaecologic cancer in their lifetime. Breast cancer was the most common cancer among females followed by cervical and ovarian cancers. Majority of cancers are diagnosed as locoregional/locally advanced as seen in 60% cases of cervical cancer. As a

result, most patients would receive multimodal cancer directed treatment as first treatment of choice.⁴

With the new data coming from GLOBOCON 2020, the incidence of new cervical cancer cases was 6,04,127, new ovarian cancers 313,959 and new uterine cancers 414,367 (2.2% of all cancers in females) globally. The mortality was 341,831 (3.4%) from cervical cancer, 207,252 (2.1%) from ovarian cancer and 97,370 (1.0%) from uterine cancer.^{3,5} India accounts for 20% of the world's burden of cervical cancer.³

Concerns About Patients Suffering from Gynecological Malignancy during COVID-19 Pandemic

COVID-19 had led to immense health-related, economic, and social suffering and harm worldwide. 20% of patients who expired due to COVID-19 in Italy were cancer patients.⁶ COVID-positive Cancer patients had a 40% mortality rate in China, much higher than any other cancer related cause.^{6,7} India was no exception to this tragedy with many facing job losses, financial destabilization, economic shrinkage, and loss of livelihoods, especially women. The situation is compounded in women with cancer, due to the chronic nature of their disease, need for frequent hospital visits, possible immunosuppressive therapies, need for strict follow up, and multidisciplinary approach of treatment to the illness. Though management of cancer cases is not an immediately life-threatening condition, the repercussions of delaying treatment may have serious health outcomes. A cross-sectional survey on perspectives of 310 patients in Lucknow regarding the impact of COVID-19 pandemic on cancer treatment showed a significant adverse impact in 5 domains (financial status, healthcare access, stress, anxiety, depression). The maximum impact was seen in patients earning less than INR 35,000 and living in rural areas.⁸

Patients with cancer who are admitted, receiving chemotherapy/radiation therapy may be at an increased risk of COVID-19 infection, according to a recent JAMA Oncology report.⁹ However, most infected patients belonged to lung cancer group and there were no patients with gynecologic cancer in this study. Due to this, experts have suggested revising the goals of treatment, expected benefits of treatment, and avoiding complications of COVID-19 in an immune-compromised cancer patient. Infectious diseases are the second-leading causes of mortality in patients with cancer, whose immune systems are often compromised and COVID can be one such infection during time of pandemic. The cause of their systemic immunosuppressive state can be malignancy or anti-cancer treatments, such as chemotherapy, targeted therapy, and immunotherapy. Most cancer patients are, therefore, asked to avoid non-essential travel to the hospital and urged to take advice online.¹⁰ A multicentric retrospective study evaluating the effect of COVID-19 on endometrial cancer patients revealed that more patients suffered from advanced stage endometrial cancer in pandemic as compared

to pre-COVID era. The total number of endometrial cancer patients who had been offered treatment significantly reduced in pandemic.¹¹

Challenges Faced by Gynecologic Oncologists, Gynecologists, and Medical Personnel

New gynecologic cancer patients usually need surgery. Surgery during the time of pandemic, especially in high burden areas, may be risky. At the same time, surgery offers one time treatment. Radiotherapy requires multiple visits while chemotherapy suppresses immune system. So, surgery should be considered in the present phase of resetting health services after carefully screening the patient. This needs to be discussed with the patient, before, making any decision.¹² For follow-up of gynecological malignancy cases, oncologists and their patients need to discuss the necessity of avoiding clinic visits, due to higher risk of morbidity and mortality from COVID-19 and choose telemedicine facility instead if applicable. Another issue of significance is the tough decision for both patients and oncologists to continue immuno-suppressive treatments during this COVID-19 crisis. The patients must be made aware regarding risks pertaining to delaying cancer treatment while emphasizing about its effect on immunity simultaneously. Patient centric approach should be preferred. With the opening of all the gynae-oncologic services currently, balance must be maintained between the old pending cases and newly diagnosed cases.¹³ Some nations have defined specialized treatment center (includes cancers) and COVID treatment centers separately. They perform screening of all the patients coming to specialized centers to limit cross infection. However, many variations were noted in the method of triage. Patients undergoing surgery were given priority for nasopharyngeal swab testing for COVID-19 while history and contact tracing method was adopted for patients planned for chemotherapy/radiotherapy.¹⁴

Being front-line workers, medical personnel play an important role in effectively treating patients with COVID infection. As of 12th June 2021, the Indian Medical Association reported that 719 Indian doctors have lost their lives to COVID-19, with the state of Bihar recording the maximum fatalities. In many parts of the world, including India, doctors have worked despite shortage of liquid medical oxygen, inpatient and ICU beds, ventilators, healthcare personnel, personal protective equipment (PPE) kits. Many healthcare workers in India faced discrimination in the society outside hospitals and refused accommodation within the community.¹⁵ Those dealing with cancer patients had more burn-out due to the unpredictable nature and duration of the pandemic, stoppage of all oncology services including palliative care and dealing with frustrations of cancer patients who faced risk of disease progression.

Education and research related activities were held less often in 2020 compared to pre-pandemic time.¹⁶ Medical

training has been largely impacted by COVID-19 pandemic. With less time spent in training for cancer surgeries and management of cancer patients, oncology students and residents being deployed into managing the pandemic, education and training of future doctors will most likely suffer. In an online survey conducted amongst gynecologists, gynecologic oncologists, surgical oncologists, radiation oncologists, and medical oncologists of Association of Gynecological Oncologists of India (AGOI), 54% respondents felt that alternative learning methods like virtual conferences, online reading material through professional society websites, and limited gathering were necessary to inform medical practices, but expressed concern that there would be few opportunities for professional interaction and networking.¹²

Determining Surgical Emergency in Gynecologic Cancer Cases

Indication for any surgery is classified as elective/non-urgent, semi-urgent, and urgent/emergent. The Elective Surgery Acuity Scale (ESAS), adapted for gynecologic oncology procedures, may guide surgeons with routine procedural classification and prioritization; the table of advised tiers is mentioned in the document by Society of Gynecologic Oncology (SGO).¹⁷ Most gynecologic oncology procedural indications will fall into a Tier 3a/b (semi-urgent) category. Tier 3a includes high acuity surgery/healthy patient, potentially life threatening, or when patient is severely symptomatic and requires admission. Tier 3b comprises of high acuity surgery in unhealthy patients. For these two categories, the Society of Gynecologic Oncology (SGO) recommends not to postpone surgery.¹⁷ They also recommend that if there is high COVID-19 census for any tier, case prioritization might change.

Resource Considerations

Since the onset of the pandemic in 2020, healthcare resources in terms of personnel, hospital beds, PPE kits, medical equipment, etc. have been directed to care of persons suffering from COVID-19 infection. As a result, many health emergencies including periodic screening, diagnosis, and management of cancer have taken a back seat.¹⁸ Those already diagnosed and on treatment for cancer had faced treatment interruptions due to the pandemic. Women with gynecologic cancers faced many challenges in cancer treatment such as unavailability of operating theatres, chemotherapy units, and radiation services leading to cancelled/postponed surgeries and definitive treatment. Several cancer centers including the National Cancer Institute (NCI, Jhajjar) were converted into COVID-19 care facilities. Healthcare personnel were deployed into caring for persons with COVID infection, were infected or exposed, and quarantined. Health resources like inpatient and ICU beds, ventilators, etc. were diverted to managing COVID patients.¹⁹

Survivorship was also affected due to lack of follow up visits which may affect early detection of recurrences and subsequent treatment.

An ambidirectional cohort study conducted across 41 cancer centers in India between 1st March 2020 and 31st May 2020 (inclusive of the nationwide lockdown period), it was seen that there was reduction in registration of new patients (54%), follow-up visits (46%), hospital admissions (36%), chemotherapy admissions (37%), major surgeries performed (49%), minor surgeries performed (52%), radiotherapy services (23%), pathological diagnostic testing (38%), radiology services (43%), and palliative care referrals (29%). Public and charitable hospitals had larger reductions in patient numbers compared to private hospitals.¹⁶

A survey of challenges faced by Indian cancer patients by a multispecialty hospital in Bihar identified several factors preventing optimum care. The main challenges included lack of availability of teleconsultation slots for consultation, chemotherapy slots, deferral of surgery, tumor boards, radiotherapy dates, transportation problems, unavailability of psychological and peer group support services, nutritionist advice, difficulty in maintaining precautionary measures against COVID transmission, restriction of family/attendants at the hospital and visa issues. Almost 91.7% patients reported an increase in anxiety levels, associated with fear of contracting COVID infection, progression of cancer due to treatment delay, death and loss of jobs leading to financial crisis.²⁰

The decision of continuing elective surgeries during pandemic should be made after considering manpower and infrastructure available at organization. Local authorities looking after readiness of a facility in managing COVID patients should share information about scarcity of resources regularly. These resources include protective gear for providers and patients.¹⁷ With this mutual sharing of information, apt decision can be taken, with idea of its potential impact on delaying crucial gynae-oncologic procedures/limiting the hospitals capacity to pandemic response. One needs to balance the risk of delay of surgery against the immediate availability of resources for COVID-19 patients, while operating upon cases with a high likelihood of postoperative ICU or ventilator requirement. These problems are being encountered more frequently currently with the opening of all the non-COVID services almost everywhere. The judicious allocation of resources during this phase of recovery, resumption and renewal of gynae-oncology services is the need of the hour.²¹

Acceptable Delay in Gynecologic Cancer Surgery

No delay is acceptable psychologically, however, from an oncologic perspective, up to 3-8 weeks delays might be considered for select cancer cases if the risks of COVID-19 exposure are deemed high enough. Referral to regional centers, if possible, is a feasible alternative. If semi-urgent cases are no longer operated upon or managed at an institution,

patients requesting appointments should be carefully prioritized to identify patients requiring early management. It is important to note that patients with advanced or high-grade cancer conditions, if delayed for long, may develop symptoms worsening or progression of disease. If a case is delayed, re-evaluation at every 2–4-week intervals is necessary. Finally, it is prudent to prioritize patients beforehand, who need to be operated first. Priority should be given to highly curable, early-stage, and those with advanced gynecologic malignancies who require surgery or with symptoms necessitating surgical palliation.¹⁷

In an Indian study looking at mortality rates in cancer patients with COVID, Mehta et al reported a case fatality rate of 14.52%. The risk of dying was associated with presence of severe symptoms at presentation and coexisting morbidities, especially diabetes and cardiovascular diseases. Recent anti-cancer therapy (including surgery, radiotherapy, chemotherapy, targeted therapy and immunotherapy) within a month prior to COVID infection appeared to have no influence on mortality rates.²² The median duration to negative RT-PCR test in cancer patients after COVID infection was 16 days in 88 Indian patients with solid organ cancers.²³

To understand the effect of delaying cancer treatment in view of avoiding COVID infection, a Markov-model-based analysis was conducted for women at risk of cervical cancer in India. It was seen that there was a lifetime increase of about 795 to 2160 (2.52-3.80%) cervical cancer related deaths due to delay in treatment ranging from 9 weeks to 6 months, respectively. The model also predicted that 88 to 238 COVID related deaths would be prevented for the same time period, but this would result in an excess 18,159-53,626 life-years and 16,808-50,035 disability adjusted life-years being lost due to cervical cancer. The study concluded that cancer related mortality may be higher than COVID related mortality for Indian women due to delays in treatment.²⁴

In a modelling study by COVIDSurg initiative, it was estimated that almost 48728 surgeries were being cancelled per week. This translated into 59.7% of cancer surgeries being cancelled in India over a 12-week period.²⁵

Modification in Management of Specific Cancers- Worldwide

Several international societies have laid down general guidelines on managing different gynaecological malignancies to help clinicians with the decision-making process during the COVID pandemic. Surgical procedures have been critically analysed for their risks of spreading infection. Risk of laparoscopic surgery concerning pneumoperitoneum in the setting of COVID-19 must be weighed against risk of laparotomy.²⁶ A proof-of-concept study by Bogani et al demonstrated that SARS-CoV2 has the potential to disseminate via smoke from surgery and get transmitted in surgical smoke and aerosols generated by abdominal fluid.²⁷ However, some

studies advocate minimally invasive surgeries in favor of open surgeries due to lesser post-operative complications, lesser duration of hospital stay, and lesser spread of COVID-19 in patients' wards. Laparoscopy could be considered if benefits outweigh the risks with utmost attention to the safety of health personnel.^{28,29} The uncertainty regarding open/laparoscopic approach was demonstrated by a survey where one out of four surgeons reported that they restricted laparoscopic procedures and opted for open surgeries.³⁰ Currently, only half of the surgeons are using any specific protection gear with merely one-third adopting respirator masks during open/laparoscopic surgeries.³⁰

Cervical cancer. The International Gynecological Cancer Society (IGCS) recommends that in early-stage cervical cancer (IA, IB1-IIA), radical hysterectomy with/without bilateral salpingo-oophorectomy and lymphadenectomy can be performed as a medium priority procedure. When access to surgery is limited, one must assure that disease is localized by imaging studies, and if so, consideration of postponing procedures that may be considered high-risk of prolonged operative time or complications, should be taken. The procedures may be postponed for 6-8 weeks or until crisis resolves. In the setting of visible cervical cancer, neoadjuvant chemotherapy can be considered. In cases of locally advanced disease (IIB-IVA), hypofractionation (increase dose per day and reduce the number of fractions) should be considered.³¹ According to the American Brachytherapy Society, brachytherapy procedures for cervical cancer patients should not be delayed in patients without COVID-19 symptoms.²⁶ The FRANCOGYN group of the National College of French Gynecologists and Obstetricians also recommended that radiotherapy and concomitant radio-chemotherapy could be considered in case of non-feasibility of surgery for cervical cancer.³² Also, the value of lymph node staging needs to be reconsidered as per individual case scenario.³² In a nationwide survey done in Italy, gynaecological oncologists reported several modifications in management of patients with cervical cancer such as radiotherapy replacing surgery, sentinel lymph node mapping as opposed to lymphadenectomy, and limiting radical procedures are some modifications.³⁰

Ovarian Cancer. The IGCS and FRANCOGYN group also recommended that neoadjuvant chemotherapy should be chosen over primary cytoreduction surgery for ovarian cancers.^{26,32} HIPEC should be avoided during the COVID-19 pandemic. For patients scheduled for interval surgery after three neoadjuvant cycles, consideration should be given for six cycles of chemotherapy before surgery. Surgery should be advised on priority basis for young patients with germ cell tumours as they have rapid growth rates and for epithelial ovarian cancers of mucinous, clear cell and low grade serous histology which are expected to respond poorly to chemotherapy. Completion or staging surgery for incidentally

detected ovarian cancers after adnexectomy can be postponed for a period of 4 to 8 weeks. Similarly, surgery for adnexal masses with normal tumour markers and those with Risk of Malignancy Index (RMI) less than 200 can be postponed following multidisciplinary tumour board discussion. In recurrence settings, platinum sensitive tumours should be treated with platinum-based chemotherapy regimen as soon as feasible. BRCA testing can be performed both in frontline and recurrent settings for initiation of PARP inhibitor therapy.³¹

Endometrial Cancer. For patients with early-stage endometrial cancer of low and intermediate preoperative European Society of Medical Oncology (ESMO) risk, hysterectomy with bilateral salpingo-oophorectomy combined with a sentinel lymph node sampling is recommended. Surgery can be postponed for 1 to 2 months in low-risk endometrial cancers (FIGO IA stage on MRI and grade 1-2 endometrioid cancer on endometrial biopsy).^{12,13,33} For patients of high ESMO risk, the MSKCC (Memorial Sloan Kettering Cancer Center) algorithm combining PET-CT and sentinel lymph node biopsy, should be used to avoid pelvic and lumbar-aortic lymphadenectomy.¹⁸ In management of endometrial carcinoma, postponing surgery in early stage disease, hysterectomy with or without salpingo-oophorectomy excluding lymphadenectomy, and exploring medical treatments were some modifications adopted by Italian gynaecological oncologists.^{10,28}

For the details regarding existing guidelines and proposed modifications in the treatment plan pertaining to cervical, endometrial and ovarian cancer, refer to [Table 1](#).

Vulvar and Vaginal Cancer. The vulvar cancer requires primarily surgical management, it should not be delayed. However, in early-stage diseases, treatment can be delayed for few weeks. The patients with locally advanced cases of vulvar cancer may be offered exclusive radio-chemotherapy or radical surgery followed by radiotherapy. Radical lymphadenectomy should be considered in cases involving inguinal lymph nodes. Sentinel lymph node biopsy may be considered in clinically selected N0 cases. In case of substantial perineal involvement (urethra/vagina/anus), radical radiotherapy followed by surgery on residual disease should be considered. For local recurrences, surgery/radical radio-chemotherapy/electrochemotherapy/other palliative treatments could be tried. In frail patients, balanced plan after multidisciplinary discussion should be made. In early stage, radical surgery is to be considered in selected cases. In patients with larger lesions, palliative surgery/radiotherapy/electrochemotherapy regimens could be tried. Radiotherapy-chemotherapy is the recommended choice in locally advanced cases with debulking surgery in minimal residual disease. The vaginal cancers usually present at an advanced age and should be offered radio/brachy/chemotherapy with individualized considerations to lymph node staging surgeries.^{32,35}

Table I. Existing Guidelines And Modifications In Gynae-Oncologic Cancers.

S.no	Gynecological cancer	Existing guidelines	Modifications suggested pertaining to Covid-19 pandemic
1.	Cervical cancer	<p>CIN2/CIN3: LEEP/Conization</p> <p>FIGO IA1 (without LVSI): Conization/Trachelectomy/ Simple hysterectomy</p> <p>FIGO IA1 (with LVSI): Surgical hysterectomy plus assessment of lymph nodes (includes sentinel lymph node)</p> <p>FIGO IA2: Modified radical hysterectomy and pelvic lymphadenectomy/sentinel lymph node assessment.</p> <p>FIGO IB1: Radical hysterectomy with bilateral lymphadenectomy. Modified radical hysterectomy may be considered.</p> <p>IB2, and IIA1: Both surgery (radical hysterectomy with bilateral lymphadenectomy) and radiotherapy could be chosen as primary treatment modality depending on patients' preferences and available resources.^{19,24}</p> <p>IB3 AND IIA2: Concurrent chemoradiation (CRT) based on platinum have better survival rates as surgery followed by postop radiotherapy.</p> <p>FIGO IIB-IVA: Chemoradiotherapy (CRT) /Neoadjuvant chemotherapy followed by surgery or RT#/tailoring RT as per surgical staging or PET-CT^{19,24}</p> <p>*Fertility sparing surgeries could be offered.</p> <p>*Laparoscopic/robotics surgeries could not be considered preferable as compared to open surgery in FIGO stage IA2, IB, and IIA. Patients should be counselled about risks and benefits.^{33,34}</p>	<p>RT and concomitant CRT should be considered as the first line therapy wherever applicable.³²</p> <p>Lymph node dissection should be considered on a case-to-case basis.¹⁵</p> <p>Surgery after concomitant CRT should be done only if residual disease is present.³²</p> <p>Risks vs benefits of adapting modifications should always be individualized and discussed with the patient.</p>
2.	Uterine cancer	<p>FIGO I, II (occult disease): Extra-fascial total hysterectomy with bilateral salpingo-oophorectomy, ± pelvic lymphadenectomy</p> <p>FIGO II (overt disease): Radical/modified radical hysterectomy, bilateral salpingo-oophorectomy, Bilateral pelvic lymphadenectomy, and selective aortic node dissection/neoadjuvant therapy followed simple hysterectomy/pelvic radiotherapy and intracavitary brachytherapy in inoperable patients medically.^{17,23}</p> <p>FIGOIII: surgery followed by postoperative EBRT and/ or chemotherapy, Non-resectable disease: Pelvic irradiation, with or without chemotherapy/ neoadjuvant chemotherapy followed by laparotomy</p> <p>FIGO IV: Cytoreductive surgery/Neoadjuvant chemotherapy followed by interval bulking surgery/ pelvic radiotherapy.^{33,36}</p>	<p>Surgery is always the first choice for early stage cancers. Laparoscopy could be considered.³⁵</p> <p>For early stage disease, postponement of the procedures for 1-2 months might be offered.</p> <p>For advanced stage disease, medical treatment should be the first line of management.Sentinel lymph node sampling/MSKCC algorithm should be used to avoid lymphadenectomy.³⁵</p> <p>Risks vs benefits of adapting modifications should always be individualized and discussed with the patient.</p>
3.	Ovarian cancer/ fallopian tube/ peritoneal	<p>For early stage disease staging laparotomy(TAH +/- BSO, peritoneal wash cytology, multiple biopies from undersurface of diaphragm, peritoneum, pelvic side walls etc., infracolic omentectomy, selective pelvic and paraortic lymphadenectomy,</p> <p>For advanced stage: Primary debulking/interval debulking/neoadjuvant chemotherapy/secondary cytoreduction/second look surgeries.³⁷</p>	<p>Neoadjuvant chemotherapy should be preferred over cytoreductive surgery. The chemotherapy for 4 cycles could be extended to 6 cycles. 2 cycles of chemotherapy should be given at least post-operatively.</p> <p>Risks vs benefits of adapting modifications should always be individualized and discussed with the patient.</p>

Management of Gynaecologic Cancer During COVID-19- Indian Scenario

The management of gynecologic cancers during the pandemic is a complex situation, with no 'one size fits all, strategy. While treading in this unfamiliar and perilous times, it is necessary to have a multidisciplinary approach involving all the treating physicians, support staff, patient and their family in making a treatment plan. It is imperative that the benefit of starting early treatment is weighed against the risk of contracting COVID infection and vice versa. A case-to-case discussion should be done to choose the best treatment approach that is suitable for the patient's ideas and goals.

Guidelines on Cancer Screening in Women. India had launched the operational framework for the first national screening program for breast, cervix, and oral cancer in 2016 under the National Program for Prevention and Control of Cancer, Diabetes, Cardiovascular diseases, and Stroke for women over the age of 30 years in 100 districts of India before expanding the program to other areas. The operational framework aimed to implement screening practices in smaller health centers that cater to 3000-5000 persons.³⁸ Despite such national programs, the uptake of cancer screening among women in India is dismal. The National Family Health Survey 2019-2021 (NFHS-5) report showed that the percentage of women who had ever undergone a screening test for cervical, breast and oral cancer were 1.9%, .9% and .9%, respectively.³⁹ The COVID pandemic had further impacted screening practices adversely in most health centers. In a survey of 41 cancer centers in 2020, it was seen that the cancer screening practices were almost non-existent or functioning at less than 25% capacity in more than 70% of the healthcare centers.¹⁷

Several professional societies in India gave out guidelines for screening women for cancer and managing a positive screening test. ISCCP-FOGSI-AOGIN consensus guidelines for cervical cancer screening during COVID pandemic advises hospitals and institutions to consider HPV self-sampling wherever possible as it has the advantage of decreasing the need for a physical visit combined with an excellent negative predictive value. Patients with red flag signs such as postcoital bleeding, postmenopausal bleeding, foul smelling white discharge, and low back pain need to report to a healthcare facility without delay. All outreach camps should be delayed till pandemic settles and virtual consultations should be encouraged to increase participation in screening. Patients with low grade squamous intraepithelial lesions (LSIL) can be triaged with HPV testing. If HPV test is negative, they can opt to get a Pap smear after 12 months. If HPV testing is positive, they should be subjected to a colposcopic examination within 3 months. Patients with high grade squamous intraepithelial lesions (HSIL) should be scheduled for colposcopy immediately. Patients tested positive with primary HPV screening should be triaged with cytology, VIA, or HPV genotyping. If either cytology or VIA are positive, she should undergo

colposcopic examination immediately. HPV 16/18 positive patients must have a colposcopic examination within 3 months and those who triage negative with HPV 16/18 should get a repeat HPV screening after one year.⁴⁰

After colposcopy, the management guidelines depend on the histopathological diagnosis. Patients with cervical intraepithelial neoplasia (CIN) 2 or 3 should initiate treatment as soon as possible, while CIN 1 can be managed with observation for 12 months provided the preceding abnormality was ASCUS or LSIL.⁴⁰

Considerations for management of preinvasive cervical cancer by Dewan et al suggest that low grade lesions can be followed up after 6 to 12 months, whereas high grade lesions require further evaluation and treatment within 3 months.⁴¹

Cervical Cancer. ISCCP-FOGSI-AOGIN India had published consensus guidelines for management of invasive cervical cancer during the pandemic. For patients presenting with early stage cervical cancer, surgical management should be initiated as soon as possible. Women presenting with stage IA1 disease can be allowed a delay of up to 8 weeks for surgical management, considering the slow rate of growth of the tumour. Women with stages IA2, IB1, IB2, IIA1 must undergo radical hysterectomy and lymphadenectomy within 6 to 8 weeks. In areas where surgical treatment is not available, patient should be referred for radiotherapy or to areas where adequate surgical expertise is available.⁴⁰ Surgical option is attractive for early cancers during the COVID era as it involves a single visit as opposed to multiple visits required for chemoradiation.⁴² In case access to surgery is limited, complicated surgeries like radical hysterectomy can be postponed for 6 to 8 weeks. If delay of more than 8 weeks is anticipated, chemoradiation (CRT) can be opted for. In very early disease with size less than 2 cm, simple procedures like conization or trachelectomy with or without sentinel lymphadenectomy and neoadjuvant chemotherapy (NACT) can also be considered.⁴¹ In a tertiary care center from New Delhi involving 12 new cases of cervical cancer and 79 follow up cases managed over 4 months during the pandemic, it was seen that there was no morbidity or mortality and the median hospitalization duration was 5 days among the new cases managed by open radical hysterectomy. The COVID infection rate among healthcare personnel during the study duration was only around 3%.⁴³

For patients with locally advanced cervical cancer (stage IB3, IIA2-IVA), chemoradiation is the treatment of choice and should be offered without delay, preferably within 4 weeks of diagnosis.⁴¹ External beam radiation (EBRT) can be given as hypo fractionated regimens (higher doses given in fewer visits) to decrease hospital visits, though concerns exist regarding the safety and efficacy of such regimens in cervical cancer.^{40,41} A study on 74 Indian women with cervical cancer in PGIMER institute in North India after the pandemic struck, 7 patients with early stage cervical cancer were treated with chemoradiation instead of surgery. No patient treated with CRT had treatment interruption. Brachytherapy was

administered in 23 patients in a hypo fractionated regimen of 9 Gy per week for two weeks or 14 Gy in 2 fractions per day (6 hours apart) for 2 weeks. Palliative chemotherapy was given to 4 patients after thorough discussion on the risks and benefits.⁴⁴

For metastatic disease, palliative chemotherapy or radiation therapy may be considered and should be weighed against best supportive care.⁴¹

Management of recurrent cervical cancer depends on site of recurrence, time from treatment completion and presence of distant metastasis. Locally recurrent cervical cancer after 12 months of treatment should be considered high priority and treated with chemotherapy. Local symptomatic central or para-aortic recurrence should be considered medium priority and treated with salvage radiotherapy. Slow growing central recurrence should be considered lowest priority and should undergo resection or pelvic exenteration.⁴¹

Adjuvant chemotherapy after surgery is decided based on the presence of intermediate or high risk factors. It should be started within 4 to 6 weeks, if possible. EBRT may be delayed up to 12 weeks and CRT up to 8 weeks following surgery. Some authors have proposed forgoing brachytherapy with the use of higher dose EBRT at 50.4 Gy in place of the conventional 45 Gy with brachytherapy boost. This is because brachytherapy is done in operation theaters with anaesthesia and may increase chances of COVID infection. Brachytherapy in time of COVID pandemic should be done with regional anaesthetic methods like spinal and epidural anaesthesia instead of general anaesthesia as it involves risk of aerosol generation associated with intubation, extubation, and mechanical ventilation procedures. Image guided brachytherapy should be used as sparingly as possible, with more tendency to opt for CT or ultrasound than MRI. If MRI guided brachytherapy is deemed necessary, this should be limited to first application.⁴¹ Reducing the number of applications and increasing dose per fraction of brachytherapy represents a method of delivering the required dose without increasing risk of COVID infection.⁴⁵

Endometrial Cancer. Women with postmenopausal bleeding should be evaluated based on presence of risk factors like obesity, diabetes mellitus, hypertension, history of PCOS, tamoxifen intake, and other features of metabolic syndrome. For those with endometrial thickness (ET) less than 4 mm and no risk factors, a waiting period of 3 to 6 months is acceptable. Women having postmenopausal bleeding with ET more than 4 mm and one or more risk factors should have an endometrial sampling as soon as possible to diagnose endometrial cancer.⁴⁶

Women with early stage, low risk endometrial cancer can be allowed a delay of 6 to 8 weeks for starting treatment.^{42,47} Such patients can be treated with oral hormonal therapy or insertion of LNG-IUD system to control disease till definitive treatment. Laparoscopic staging surgery with peritoneal wash cytology, extrafascial hysterectomy with or without salpingo-

oophorectomy, and lymphadenectomy can be considered with efficient filtering and smoke evacuation systems to prevent contamination of operating room with pneumoperitoneum induced aerosols.⁴⁶ Methods such as balloon trocars, creation of low pressure pneumoperitoneum and evacuation of all pneumoperitoneum prior to removal of trocars have been suggested to minimize risk of OR contamination with surgical plume. (38) Endometrial cancers with high risk factors should be immediately treated without any delay. Sentinel lymphadenectomy (SLND) should be strongly considered to increase recovery rates, decrease operative times, and morbidity.⁴⁶ An Indian study on management of 81 new cases and 143 follow up cases of carcinoma endometrium which involved 8 cases managed by robotic radical hysterectomy during the COVID pandemic found no adverse events.⁴³

Adjuvant therapy must be individualized on a case-to-case basis after discussing the pros and cons of additional therapy and risk of COVID infection with the patient. Delay in such therapy should be limited to 9 weeks.⁴² Hormone receptor positive tumours may benefit from hormonal therapy and radiation can be deferred.⁴⁷ Where possible, molecular classification should be performed to exclude patients who may not require adjuvant therapy. Immunotherapy should be started with caution in patients in whom tumours show microsatellite instability or POLE mutations. Among 14 endometrial cancer patients managed during the pandemic, all patients completed scheduled chemoradiation except for one patient on adjuvant therapy in whom chemotherapy initiation was delayed. Patients with high risk received 3 fractions of 7 Gy on alternate days in a week.⁴⁴

For advanced low grade endometrial cancers with low tumour burden, hormonal treatment with megestrol acetate, medroxyprogesterone acetate, tamoxifen, etc can be opted either alone or in combination. In case of high grade or extensive disease, salvage chemotherapy can be opted.⁴⁶

For locally recurrent disease primarily treated by surgery, radiotherapy in the form of brachytherapy may be administered. For extensive disease, discussion regarding institution of palliative chemoradiation vs supportive care should be discussed with the patient.⁴⁶

Ovarian Cancer. Women with early-stage ovarian cancer should be considered medium priority and surgery should be scheduled on a semi-urgent basis to prevent spread. Postoperatively, 6 cycles of single agent carboplatin can be considered for low risk, early-stage disease confined to pelvis, particularly for elderly patients.⁴² For advanced stage ovarian cancers, neoadjuvant chemotherapy can be preferred in place of extensive cytoreductive surgeries. In those who have completed 3 cycles, a further 3 cycles can be administered before attempting interval cytoreductive surgery.^{46,47}

Low risk surgeries like completion surgery following incidental diagnosis after ovarian cystectomy or oophorectomy, and risk reducing salpingo-oophorectomy are considered low priority disease and may be deferred. For hormone responsive

tumours like low grade serous and endometrial cancers, oral hormonal therapy can be instituted.⁴⁵ Intraperitoneal chemotherapy, HIPEC (heated intraperitoneal chemotherapy) and PIPAC (pressurized intraperitoneal chemotherapy) are highly toxic procedures with minimal margin of benefit and longer postoperative benefit and hence, should be done with caution.⁴²

In patients with tumours with HR deficiency or BRCA positivity, oral PARP inhibitors may represent an excellent strategy to continue treatment while preventing infection risk. In case of recurrent tumours with low probability of cure, oral metronomic therapy with cyclophosphamide, etoposide or targeted therapy like pazopanib can be started. Platinum refractory cases should be treated with best supportive care.⁴⁶

Follow up can be completed via tele-health with serum markers of ovarian cancer and imaging studies at local centers.

Vulvar Cancer and Vaginal Cancers. Since vulvar and vaginal cancers are rare, Indian experience regarding management of these cancers during Covid-19 pandemic is limited. In a prospective study done by Sekon et al in national capital, 1 vulvar and 3 vaginal cancer patients were treated along with the follow-up of 11 and 12 old cases of vulvar and vaginal cancers respectively. Two radical vulvectomy with bilateral inguinofemoral lymphadenectomy and 1 partial vaginectomy was done. There was no mortality.⁴³ Mishra et al quoted that radiotherapy may be considered in selected cases in vulvar cancer patients having early disease. In locally advanced cases, consideration to neo-adjuvant chemoradiation should be given. First line chemotherapy might be considered depending on symptoms in metastatic cases. Relapsed cases should be provided symptomatic management.⁴⁶ The prudent treatment of these rare gynecological cancers with surgery or chemotherapy/radiotherapy depending on patients' age, comorbidities, stage of disease, risk factors etc has been advocated by other studies as well.⁴⁷

Covid-19 Positive Gynecologic Cancer Patients

It is now increasingly being recognized that carcinogenesis is a form of immune dysfunction, where immune cells fail to identify and control nascent tumour cells in a process called 'immunosurveillance'.⁴⁸ This has been further reinforced by the fact that there is a high incidence of tumours in immunodeficient individuals.⁴⁹ Immunocompetency of patients with cancer is further depleted as a result of treatment like extensive cytoreductive surgeries, radiation therapy, and chemotherapy. A weakened immune system predisposes cancer patients to infection, particularly with COVID-19 virus. It has been seen that such infection is likely to persist for a long time and lead to increased rates of morbidity and mortality. In a study of more than 5 million patients with COVID (of which 2.8% were cancer patients), it was seen that patients with cancer had a higher mortality rate compared to those without cancer. The mortality rate was 1.6% in patients

without cancer, 5.0% for patients with cancer with no recent treatment, and 7.8% for cancer patients on active treatment. It was seen that this risk was higher in patients with metastatic solid tumors and hematologic cancers. Patient receiving chemotherapy and immunotherapy were particularly at a higher risk of worse outcomes.⁵⁰

SGO recommends that whenever possible, one must avoid operating on known COVID-19 positive patients or those with flu-like symptoms and unknown COVID-19 status, unless the case is emergent/urgent.¹⁷ The National College of French Gynecologists and Obstetricians Guidelines say if a patient with a gynecologic cancer presents with COVID-19, surgical management should be delayed for at least 15 days.³² Vulvar Cancer multidisciplinary team from Italy recommended that any diagnostic/surgical /medical treatment should be postponed in Covid-19 positive symptomatic patients. In case of emergent need of palliative treatment in acute, severe, and extremely urgent patients, least invasive therapy should be given. Even in Covid-19 positive asymptomatic patient, initiation of treatment is risky with adverse outcomes. The multidisciplinary discussion should be held, and treatment should be withheld till negative laboratory report is obtained. In cases having aggressive disease/severe symptoms where Covid-19 positive status persists with no symptoms, multidisciplinary tumor board should decide the lines on which treatment should be initiated considering least invasive therapy. In patients turning Covid-19 positive after the start of treatment, the decision to complete, discontinue, or postpone the initiated treatment should be decided based on multidisciplinary discussion, presence/absence of Covid-19 symptoms, general condition of patient, stage of disease, and time required for treatment completion. The discontinued treatment could be started again after two negative laboratory reports > 24 hours apart/subsidence of symptoms since last 3-7 days.³⁵

The guidelines for giving chemotherapy in the background of an infection say that in case of any infection, be it COVID-19 or otherwise, one should wait until the infection is resolved to resume chemotherapy. Doctors should be able to test every patient (symptomatic or asymptomatic) before beginning chemotherapy to ascertain regarding infective status ideally as incubation period of virus is 5 days.¹⁸

Many centers are adopting the universal testing screening policy in current times for renewal of gynecological oncology services.

Economic, Social, and Psychological Burden due to Steps Taken to Mitigate COVID Transmission

Non-pharmaceutical interventions such a stringent social distancing and lockdown measures have led to lack of transportation, pay-cuts, furloughs and lay-offs, financial instability and social hurdles for patients with cancers. Such disruptions in daily living have affected women more than men.

India is predominantly a rural country with two-thirds of the population and 70% of the workforce living in rural areas. In contrast, cancer care centers are located mainly in eight densely populated cities in India. Patient to oncologist ratio is 585:1 as opposed to 95:1 in the US. In 2016, only 20% of Indian districts had a Comprehensive Cancer Center (CCC). This meant that most of cancer patients had to travel from their hometown to tertiary care centers to avail cancer care.⁵¹ Almost 50% of patients in public sector travel long distance to avail these services and this contributes to 20-25% increase in treatment cost for travel and stay. This has been further exacerbated by the lockdown measures which meant that all public modes of transportation were suspended. Several reports of people travelling over 100 miles by walk to access cancer care were reported.^{52,53}

Shinghal et al studied the effect of the 100-day nationwide lockdown in India on gynaecological cancer radiation therapy in a tertiary care center in Mumbai. Out of 270 patients, almost 75% were residing outside Mumbai, with almost 48% residing more than 500 to 2000 kms away from the hospital. Most patients were suffering from cervical cancer (78.9%), followed by endometrial cancer (16.7%). One-third (90 patients) were referred to oncologic services near their place of residence due to the pandemic situation. Among patients planned for EBRT, only 76.8% patients completed full therapy. Among patients planned for definitive EBRT and brachytherapy, only 72.5% patients were able to complete treatment. Among patients planned for brachytherapy alone and palliation radiotherapy, 12% and 30% were unable to complete therapy. Almost 53.3% patients had overall treatment time that exceeded 60 days. Only 26.2% patients received full dose chemotherapy as planned. The main reason for not being able to complete treatment was fear of contracting COVID and logistic issues due to lockdown. Infection with COVID leading to treatment postponement was observed in 8.2% patients only. No contact could be made with 9% patients. It is estimated that delay in treatment due to such fear can increase the risk of local recurrence by 10-12%, which translated to an additional 8000-12,000 Indian women relapsing or dying per year.⁵⁴

More than 75% of Indian households cannot afford baseline treatment cost for early-stage cancers and only 10% can afford treatment costs for advanced cancers.⁵⁵

What does International Guideline say regarding management of Gynecologic Cancer patients

The Society of Gynecologic Oncology states that precise triage is essential to maintain harmony between existing resources and protecting staff and patients. Decisions regarding proceeding with semi-urgent and elective surgeries need participation of state health department and hospital system levels at ground level.¹⁷ Informed consent and mutual decision making with patients, along with counseling patients about the harms of surgical delay as compared to in hospital

COVID-19 cross infection, is important while planning procedures with proper documentation. Determinations regarding cancer surgery are based on local/projected resources, emergence of COVID-19 in community, patient and tumor factors and expected outcomes from delays. This guideline also clearly delineates urgent (immediate), semi-urgent (1-4 weeks) and non-urgent (>4-12 weeks) gynecologic oncology surgeries as mentioned earlier in the article.¹⁷

The International Gynecological Cancer Society (IGCS) advocates restricting number of physicians and healthcare providers involved in providing out-patient services to restrain exposure to everyone.²⁶ They also recommend delaying all routine services/follow-up visits or changing to telemedicine/web-based consultation until crisis has resolved and it is advised to return to resumption of routine services. Patients should use teleconsultation and electronic correspondence in case of any important issues. Patients should be counselled to postpone unnecessary interventions/routine investigations and imaging if that is not absolutely required, for example, in patients who are free of symptoms/not showing relapse or progression.¹⁷

The American College of Surgeons (ACS) has also issued guidance for triage of patients for cancer surgery in general.⁵⁶ However, many cancer surgeries cannot be considered as elective. If decision for surgery is taken, it requires multiple hospital visits and treatment related low immunity; these risks need thoughtful consideration. At the same time, the risks of postponing any surgery or chemotherapy also need evaluation. The American College of Surgeons (ACS) have categorized most gynecologic cancer cases as semi-urgent (i.e., non-elective) surgeries, second only to trauma cases and surgical emergencies in order of their importance. The ACS advocated that delaying cancer surgeries could cause more harm rather than benefits to patients.⁵⁶

There is some guidance from the Centre for Disease Control (CDC), USA, that 'elective surgeries' may be re-scheduled, if possible.⁵⁷

Mental Health of Gynecologic Cancer Patients

The anxiety, uncertainty and stress arising due to conflicting decisions regarding cancer management, whether to undergo surgery or postpone it, the fear of relapse and recurrence, loss of life due to non-accessibility of health services during pandemic, all these factors have taken toll of mental health of cancer patients. It is a dreadful situation for oncologists and more so for cancer patients. Cancer patients should refrain themselves from the myths and misinformation that is being widely circulated on WhatsApp, Facebook, and other social media platforms. The misinformation, related to COVID-19 and cancer, can do more harm than good to a patient mentally. The proliferation of false information has led to depression, suicidal tendencies, and fear in vulnerable populations and expanding the heavy emotional burden of this disease for those who could least bear it. Patients are encouraged to avail

of appropriate cancer organizations, including the World Health Organization (WHO) for definitive information.⁵⁸

Building up coping mechanisms during this crisis, is quintessential. At this time, family support is most important for cancer patients, but if someone in the family gets sick, cancer patients must start social distancing, wearing gloves and masks, sleeping in a different room if possible, and wiping down the areas with regular hands washing with soap or with alcohol wipes if available.

Role of Tele Consultation

Tele-health has never played a more important role in saving lives than during this pandemic. An example is Navya Care, a tele-consultation service provided by the Tata Memorial hospital. These online portals are providing advice from experts online, without the need to step out of homes. Initially, a patient registers with the help of an online link available on the hospital website. Following this, all case files, past medical test reports and prescriptions are uploaded on the site. When this is complete, the online team of Navya Care coordinates with the doctors and forwards their suggestions to the patients in a few days. If the patient is not required to come to hospital, they are asked to wait until the lockdown is over. Patients, who lack website access or awareness regarding how to operate on the website, may contact experts on their mobiles and send the case papers via WhatsApp™.

The Ministry of Health & Family Welfare has launched the COVID-19 National Tele-consultation Centre (CoNTeC) and also interacted with Nodal Officers of Medical Colleges of States and other AIIMS of the country. The Ministry of Health and Family Welfare (MoHFW) also issued guidelines on provision of telemedicine services by healthcare workers on 25th March 2020, to regulate such services.⁴¹

This teleconsultation service can be used for gynecological cancer patients too. The All India Institute of Medical Sciences, Delhi has started its teleconsultation services on basis of this, for catering to the needs of its outpatients including those with gynecological cancer. CoNTeC has been made functional at AIIMS with a view to integrate the Doctors across the country to AIIMS in real time for treatment of the COVID-19 patients.

In a study on teleconsultation services by the Department of Radiation Oncology for 1103 women with gynecological cancer on follow-up, it was seen that the incidence of symptom burden was low at 9.6%. It was seen that almost half (54%) of these patients had resolution of symptoms by 4 weeks. Six patients had disease progression. Four patients who received teleconsultation services had died (three due to disease progression and one due to COVID infection).⁵⁴

The major drawbacks of teleconsultation are the need for tests to assess the patient's condition and progress of the disease while on chemotherapy and radiotherapy especially for aggressive types of cancer. There are many concerns among patients of what happens if one stops, delays, or

switches the cancer treatment. The other problem is feasibility of teleconsultation, which is not possible at all centers. Hence, catering to the needs of all gynecological cancer patients in the Indian scenario is not feasible through teleconsultation.

Future Directions

Decrease in screening and diagnosis of cancer in the peak months of COVID pandemic will be expressed as increase in incidence of cancer cases, particularly as higher stages, in the forthcoming time. It is predicted that these reductions in cancer screening and early diagnosis will lead to missed diagnoses in over 83000 to 111000 persons leading to advanced disease at presentation over the next 2 years and over 98000 to 131000 excess cancer related deaths in next 5 years.¹⁷ Cancer care system should anticipate rise in cancer cases requiring multi-modality treatment in the immediate future and build capacity to accommodate this backlog of cases. Screening of cancer should be resumed actively and more aggressively than before to ensure maximum participation of women. Healthcare systems must also have a backup plan for possibility of future outbreaks and new COVID waves and plan care strategically.

Limitations of the current review

The situation regarding gynae-oncology practices and COVID-19 is an ever changing one. Though the authors tried to give a comprehensive review, however, the data and guidelines regarding impact of COVID-19 on gynae-oncology keep emerging. Also, the current review is a narrative review, rather than a detailed systematic review.

Conclusion

The COVID-19 pandemic has been tackled for now but with the emergence of new strains and anticipation of multiple waves over a period, it had left an unforgettable impact on cancer patients and their caregivers along with oncologists who are helpless on deciding whether "to treat or not to treat". Oncologists must think critically and prepare a guideline as per regional considerations to deal with gynecologic cancer patients during the time of health emergencies and how to manage gynecological cancers, as these patients are more prone for adverse outcomes. Very real ethical dilemmas abound for cancer clinicians bearing the hopes and dreams of their patients, who deserve empathy but also a realistic insight into their situation. The implementation of recommended international guidelines for the management of gynecologic cancers should take precedence. Each modification from standard approach should be approved by multidisciplinary team depending on patients' condition and locoregional circumstances. The resetting of gynae-oncology services will need the novel ways to ensure standard care to cancer patients while minimizing their risks to COVID-19 at the same time.

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