Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

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Clinical Commentary

COVID-19 and ovarian cancer: Exploring alternatives to intravenous (IV) therapies

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On 11 March 2020, the World Health Organization (WHO) declared the outbreak of the coronavirus SARS-CoV-2 and its associated disease COVID-19 a pandemic [1]. The need to contain and mitigate transmission of SARS-CoV-2 to prevent surges of patients that may overwhelm healthcare systems has led to unprecedented challenges for health care professionals (HCPs) around the world, including managing the use and distribution of healthcare resources. In March 2020, ASCO created a COVID-19 resource center that contains evidence-based, up-to-date information gathered from the medical literature (PubMed), Centers for Disease Control and Prevention (CDC), WHO, Infectious Diseases Society of America (IDSA), clinicians, and infectious disease experts [2].

The WHO-China Joint Mission on Coronavirus Disease published a report indicating that the case fatality rate for COVID-19 patients with cancer as a comorbid condition was 7.6% vs. a case fatality rate of 3.8% in the entire COVID-19 population [3]. In addition, the case fatality rate was 1.4% in COVID-19 patients with no comorbid conditions. Yu et al. found that cancer patients from Wuhan, China had a higher risk of SARS-CoV-2 infection compared with the general community and that hospital admissions and recurrent hospital visits were potential risk factors for infection [4]. Given these emerging data, it is prudent to reduce visits to the clinic whenever possible to minimize SARS-CoV-2 exposure and risk of transmission, especially in immunocompromised cancer patients.

One way to reduce clinic visits is to use oral therapies, especially if there are viable alternatives to IV therapies in the desired setting. Patients who receive IV treatment need to visit a hospital or infusion clinic, which may put further pressure on oncology centers that are being converted to temporary COVID-19 units to help manage outbreaks in the regions they serve. If an oral agent is taken at home, this may help foster an environment that will keep the patient, her caregivers, and her medical team safe by minimizing the need for in-person clinic visits. HCPs will need to assess the benefit-risk profile of each therapy and its mode of administration against other factors, including the patient's goals of care, comorbidities, financial considerations, ability of available nursing services to help manage toxicities, the need to obtain outside laboratory values, susceptibility for developing severe symptoms, and the patient's risk of dying from COVID-19 and/or cancer. Prophylactic use of supportive care (e.g., myeloid growth factor to manage febrile neutropenia) may also help minimize return visits to the clinic.

In the setting of ovarian cancer, there are several classes of oral agents that can potentially serve as alternatives to IV therapies, including cytotoxic chemotherapy, inhibitors of poly(ADP-ribose) polymerase (PARP), targeted agents, and hormonal therapies [5]. Eight randomized placebo-controlled trials of PARP inhibitors have been reported, all with improved progression-free survival associated with use as maintenance therapy (primary endpoint hazard ratios, 0.18–0.68) in first line and platinum-sensitive recurrent ovarian cancer [6]. In addition, one randomized phase 3 study demonstrated that a PARP inhibitor had improved efficacy vs. IV chemotherapy in women with germline *BRCA1/2*-associated relapsed ovarian cancer [7], suggesting that PARP inhibitors are reasonable alternatives to IV chemotherapy in the treatment setting.

During this pandemic, if a patient has persistent disease after receiving 4–6 cycles of platinum-based chemotherapy, she may be an appropriate candidate for maintenance therapy with an oral PARP inhibitor. If active therapies are not used in the maintenance setting, watchful waiting can lead to rapid recurrence and a shorter time to subsequent therapy, which may place more demands on healthcare systems, especially if IV infusions are required. In the treatment setting, holding therapy to reduce SARS-CoV-2 exposure may not be a viable option because of concern that the patient's cancer will progress more rapidly.

We believe the principles outlined above may serve as appropriate alternatives for treatment of other solid tumors during this pandemic. As noted in the COVID-19 resource center, there is no direct evidence to support changing or withholding chemotherapy or immunotherapy in patients with cancer. Nevertheless, a brief treatment holiday and/or switching from IV to oral therapies may be viable options for some patients. Within the global healthcare community, the time for action is now: let's use logic and all available therapies—especially if there are viable alternatives to IV therapies that are indicated for use in the desired setting—to keep our patients out of the clinic for nonessential, routine visits. Conserving healthcare resources and minimizing the number of times a patient needs to visit an inpatient or outpatient clinic is a simple, yet powerful strategy to help slow the spread of SARS-CoV-2.

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Author contributions

Dr. Bradley J. Monk wrote the first draft of this editorial and approved the final draft for submission. Dr. Monk's coauthors (Drs. Robert L. Coleman, Kathleen N. Moore, Thomas J. Herzog, Angeles Alvarez Secord, Ursula A. Matulonis, Brian M. Slomovitz, Saketh R. Guntupalli, and David M. O'Malley) contributed equally to this work and approved the final draft for submission.

Declaration of competing interest

Dr. Bradley J. Monk reports personal fees from AbbVie, personal fees from Advaxis, personal fees from Agenus, personal fees from Amgen, personal fees from Aravive, personal fees from AstraZeneca, personal fees from Asymmetric Therapeutics, personal fees from Boston Biomedical, personal fees from ChemoCare, personal fees from ChemoID, personal fees from Clovis Oncology, personal fees from Easai, personal fees from Geistlich, personal fees from Genmab/Seattle Genetics, personal fees from GOG Foundation, personal fees from ImmunoGen, personal fees from Immunomedics, personal fees from Incyte, personal fees from Janssen/Johnson & Johnson, personal fees from Laekna Health Care, personal fees from Mateon (formally Oxigene), personal fees from Merck, personal fees from Mersana, personal fees from Myriad, personal fees from Nucana, personal fees from Oncomed, personal fees from Oncoquest, personal fees from Oncosec, personal fees from Perthera, personal fees from Pfizer, personal fees from Precision Oncology, personal fees from Puma, personal fees from Regeneron, personal fees from Roche/Genentech, personal fees from Samumed, personal fees from Takeda, personal fees from Tesaro/GSK, personal fees from VBL, personal fees from Vigeo, personal fees from Iovance, personal fees from Vavotar Life Science, personal fees from Senti Bio, personal fees from Akesio Bio, personal fees from Dicepheria, personal fees from Tarveda, outside the submitted work.

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