



# Novel therapies leading to a new landscape in gynecologic tumors

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In the past decade, we have witnessed notable advances in gynecologic cancer research, from the laboratory to the clinic, including therapeutics targeting DNA damage repair, immune checkpoint inhibitors, and antibody drug conjugates.<sup>1–5</sup> This is an unprecedented time of rapid shift in gynecologic oncology drug development, as manifested by an expanding list of new therapies for cervical, endometrial, and ovarian cancer. Furthermore, research and innovation in less common tumors, such as gestational trophoblastic tumors, low grade serous, and clear cell ovarian carcinoma have also revealed new therapeutic opportunities, optimizing efficacy, and reducing potential toxicity.<sup>6–8</sup> This special issue showcases review articles by world leaders in gynecologic oncology discussing the biology of gynecologic tumors, rationale and development of new therapeutic approaches, clinical trial design and interpretation, and novel drug related adverse event management.

Incorporation of poly ADP-ribose polymerase inhibitors as maintenance therapy in ovarian cancer has been one of the most important breakthroughs in gynecologic oncology. The unprecedented results with poly ADP-ribose polymerase inhibitors as maintenance in the front line for patients with high grade serous ovarian cancer, and the extraordinary impact in patients with a *BRCA1/2* mutation, highlight the importance of developing drugs that selectively target the disease biology.<sup>2</sup> The introduction of immune checkpoint inhibitors in endometrial and cervical cancer is another relevant shift in the therapeutic landscape of gynecologic cancers.<sup>1,4</sup> As an example, front line pembrolizumab, in combination with standard of care chemotherapy (with or without bevacizumab), has shown improvements in overall survival and quality of life in patients with advanced or recurrent cervical cancer compared with placebo.<sup>3,4</sup>

The future is bright in the treatment of gynecologic cancers with the discovery of novel therapeutics that have provided clinically meaningful improvements in patients outcomes.<sup>3</sup> But it is important to recognize that there is much more to

do, and social and racial inequities in prevention and cancer care need to be addressed.<sup>1</sup> As highlighted in this special issue, non-Hispanic black women have an increasing incidence of endometrial cancer, with a higher prevalence of more aggressive non-endometrioid subtypes.<sup>1</sup> Efforts to increase inclusion of racial and minority ethnic groups in gynecologic cancer clinical trials and translational studies should continue, so that all communities benefit from scientific advances.

Gynecologic cancers, in particular cervical cancer, affect many women in low and middle resourced countries. In this special issue, the unequal access to prophylactic vaccination and early detection of cervical cancer will be discussed.<sup>4,9</sup> In their article, Viveros-Carreño and colleagues highlight the WHO strategy to eliminate cervical cancer by 2130.<sup>9</sup> Global efforts prioritizing the eradication of this highly preventable disease are laudable. Further, drug development programs for gynecologic cancers in low resource settings are slowly gaining momentum. Ongoing endeavors designing global collaborative studies that are clinically relevant for the specific population, building research capacities and registries in these settings, could help increase global access to equitable and affordable cancer care. The gynecologic oncology community must continue striving to provide our patients clinically meaningful, cost effective, and well-tolerated therapies.

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