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Short Note on Gynaecological Cancer Treatment

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COMMENTARY

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Commentary

The introduction of immunotherapy—drugs that target the body's immune system to attack cancer—has recently revolutionised cancer treatment. The majority of clinically used drugs inhibit the mechanisms that dampen immune response. Immune checkpoint inhibitors are the name given to these medications (ICIs). In gynaecological cancers, ICIs are most effective in treating uterine endometrial cancer, but less effective in treating ovarian, uterine cervical, or vulvar cancer. Combining ICIs with other drugs, on the other hand, has yielded promising results in some studies in these cancers. Stopping mechanisms that dampen immune response can have serious consequences, as seen with the use of ICIs. As a result, selecting patients who will benefit the most from ICI therapy is critical. This can be accomplished by examining tumour characteristics such as protein expression, genetic changes, and even the composition of faecal microbiota, which are referred to as biomarkers. It is unclear which biomarkers most accurately predict response, and this varies by cancer type.

The concept of activating the immune system against cancer dates back to William Coley's experiments in the nineteenth century, when he injected live or inactivated pathogens into tumours. However, until recently, modern oncological practises did not, at least not directly, take advantage of this mechanism. The introduction of oncological immunotherapy, most notably the development of a new class of systemic biological therapy directed at immune receptors and their ligands, known as immune check-point inhibitors, has revolutionised the field in the last ten years (ICIs).

These agents revolutionised the treatment of several solid tumours, including previously difficult-to-treat tumours like metastatic melanoma and non-small cell lung, urothelial, and kidney cancer. Several biomarkers for treatment response have been tested in clinical trials based on the mechanism of action of these agents, leading to regulatory approvals of ICIs based on the presence of these biomarkers. Furthermore, this has resulted in tissue-agnostic approvals, in which an anticancer drug is approved based solely on the presence of a biomarker rather than its histology. Recently, trials of ICIs for gynaecological cancer have yielded promising results, particularly for endometrial and, to a lesser extent, uterine cervical carcinoma. Gynecological cancers are a diverse group of tumours, and their responses to ICIs can be predicted using a variety of biomarkers. However, the best biomarkers for each type of cancer have yet to be identified.[1-5]

Endometrial cancer, the most common gynaecological cancer in the developed world, has an increasing incidence and prevalence, with an estimated 121,000 new cases and 30,000 deaths in Europe in 2018 [46]. Although patients diagnosed early have a good 5-year survival rate of 95%, patients diagnosed late have a dismal prognosis with a 5-year survival rate of only 17%. Until recently, the only options for patients with recurrent or metastatic disease were platinum-based chemotherapy and hormonal therapy. The median progression-free survival (PFS) and overall survival (OS) in the standard-of-care chemotherapy regimen used in first-line settings (carboplatin plus paclitaxel) were 13 and 37 months, respectively. Prior to the advent of immunotherapy and targeted therapy, the options for patients who progressed after first-line systemic chemotherapy were carboplatin plus paclitaxel retreatment, single-agent chemotherapy, or hormonal therapy; the median OS was generally 12 months.

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