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Novel approaches for concurrent irradiation in locally advanced cervical cancer: platinum combinations, non-platinum-containing regimens, and molecular targeted agents.

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Abstract

Despite the available prevention and early detection strategies, squamous-cell carcinoma of the uterine cervix is still diagnosed as locally advanced disease in a considerable proportion of patients. As a potent sensitizer of cancer cells, cisplatin has been the "traditional partner" of external beam irradiation in this setting for more than two decades. Induction chemotherapy strategies followed by concurrent chemoradiation or surgery and preoperative concurrent chemoradiation have been recently implemented in clinical trials in an effort to optimize local control and to minimize the risk of distant metastases. In this context, cisplatin has been combined with a number of other potential radiosensitizers, including 5-fluorouracil, capecitabine, and gemcitabine. In patients resistant or intolerant to platinum compounds, numerous non-platinum-containing regimens have been developed, implementing various antimetabolites, taxanes, antineoplastic antibiotics, and topoisomerase II inhibitors. More recently, molecular agents targeting critical pathways in cervical malignant transformation are being assessed in early clinical trials in combination with external-beam irradiation. In the current work, we review the evolving role of cisplatin and other platinum compounds, either alone or in combination regimens, in the context of other potent radiosensitizers. The emerging role of molecular targeted agents, as candidate partners of external beam irradiation, is also discussed.