

عنوان مقاله:

The mechanism of Kadcyla to Treat Patients with Breast Cancer

محل انتشار:

اولین کنگره پژوهُشی دانشجویان دانشگاه علوم پزشکی هرمزگان (سال: 1398)

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خلاصه مقاله:

Introduction: Antibody-drug conjugates (ADCs) are a new cancer therapeutics, combining the specificity of monoclonal antibodies (mAbs) and the cytotoxic potency of small cytotoxic payloads. Ado-trastuzumab emtansine, sold under the trade name KADCYLA®, represents an ADC containing a highly-cytotoxic small molecule agent DM1 covalently conjugated to a humanized mAb trastuzumab via a stable non-cleavable linker. Materials and Methods: In the present study, we aimed to explain the mechanism by which Ado-trastuzumab emtansine exerts its therapeutic effects on patients with breast cancer. Results: Ado-trastuzumab emtansine, when administrated, is internalized through receptor-mediated endocytosis into the target cells, the mAb moiety of the ADC is proteolytically degraded in the lysosomes, and the cytotoxic drug DM1 is released into the target cells and bind to tubulin, leading to mitotic arrest and cell death. Ado-trastuzumab emtansine, as a single-agent treatment, was demonstrated to improve thetherapeutic index and limit the exposure of normal tissue via the intracellular delivering of DM1 to HER2overexpressing cells. T-DM1 was approved for patients with HER2-positive metastatic breast cancer after disease progression on a trastuzumab-based regimen. Importantly, the drug was demonstrated to result in improved rates of progression-free and overall survival amongst patients treated for human epidermal growth factor receptor 2 (HER2)positive metastatic breast cancer. The ado-trastuzumab emtansine dose for patient administration is recommended to be 3.6 mg/kg as an intravenous infusion every 3 weeks for a total of 14 cycles, unless there is disease recurrence or unacceptable toxicity. Conclusions: Ado-trastuzumab emtansine was granted breakthrough therapy designation for the treatment of patients with HER2-positive early breast cancer, representing highly efficacious in patients with .HER2- positive breast cancer

کلمات کلیدی: breast cancer; Antibody-drug conjugates (ADCs); Ado-trastuzumab emtansine; KADCYLA

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