

Letter to the Editor

Severe hypoglycemia with trastuzumab: An unseen adverse event

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Dear Editor,

Human epidermal growth factor receptor type 2 (HER2) is overexpressed in 20%–30% of breast cancers, and targeting this receptor with anti-HER2 agents is a prime therapeutic strategy in such patients.^[1] Trastuzumab (Herceptin, Genentech), a humanized monoclonal antibody targeting HER2 receptor, was approved by the Food and Drug Administration (FDA) in 1998. The drug is generally well tolerated without any serious adverse effects, except for cardiotoxicity. We would like to report an event of severe hypoglycemia with trastuzumab therapy in a patient of metastatic breast cancer.

A 45-year-old female, a case of carcinoma breast (hormonal receptor positive, HER2 overexpressing), was treated with surgery (modified radical mastectomy) and adjuvant chemotherapy, followed by hormonal agents. She did not receive any HER2-directed therapy at the outset due to financial constraints. The patient presented with liver metastasis after 2 years and was planned for trastuzumab and chemotherapy in view of visceral crisis. The patient received 4 mg/kg of loading dose of trastuzumab on day 1. On the next day of therapy, she complained of palpitation and excessive sweating. Her blood sugar was found to be 32 mg/dl during the episode. She was managed with 50% dextrose and strict RBS monitoring during the hospital stay. There was no recurrence of hypoglycemia during the hospital stay. She was a nondiabetic female, taking normal diet, and was not on any drugs that could account for her hypoglycemic episode.

Hypoglycemia, generally defined as blood sugar level <70 mg/dl, can have serious consequences if unrecognized. Hypoglycemia occurring after trastuzumab therapy has not been reported in any scientific journal till date. The FDA label of trastuzumab^[2] considers hypoglycemia as other serious adverse events that occurred in at least 1 of the 958 patients in the clinical trial. As per eHealthMe (a platform that continuously analyzes data from many sources, including FDA), of 25,147 adverse events reported to be related to trastuzumab, only 21 were hypoglycemic episodes [Figure 1].^[3] All of these events were reported within 1 month of initiation of therapy. The available literature on pharmacokinetics and pharmacodynamics of trastuzumab cannot explain the mechanism of hypoglycemia associated with it and may need future research to elucidate the same.

Hypoglycemia is a very rare adverse event known to be caused by trastuzumab. If occurs during therapy, trastuzumab could be a possible culprit. However, more common causes of

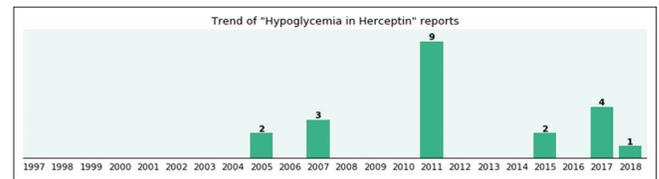


Figure 1: Trend of reported cases of hypoglycemia related to trastuzumab (adapted from herceptin and hypoglycemia – from the Food and Drug Administration reports, eHealthME November 2018)

hypoglycemia in day-to-day practice such as poor oral intake and oral hypoglycemic drugs/insulin need to be ruled out. This communication also highlights the importance of reporting such rare adverse events that can explain many uncertainties in daily medical practice.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

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