

Anti-drug antibodies anti-trastuzumab in the treatment of breast cancer

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Abstract

Introduction: Trastuzumab is a monoclonal antibody which could induce the activation of a humoral immune response generating anti-drug antibodies (ADAs). Such response depends of the protein nature and the route of administration (intravenous or subcutaneous). The formation of these antibodies could block the action of trastuzumab (ADA-Tras) and forming immune complexes which decrease its efficacy, so it would be interesting to determine the presence of ADA-Tras in patients treated with trastuzumab.

Material and methods: The blood samples were centrifuged to separate the plasma. The presence of ADA-Tras in plasma was determined using an ELISA-type automated immunoassay.

Results: Fifty-one women with non-metastatic HER2-positive breast cancer treated with trastuzumab were included. Two groups were studied: patients treated intravenously and subcutaneously. In neither case was there any presence of ADA-Tras.

Discussion: This study may be the first ever conducted under usual clinical practice conditions to detect the presence of ADA-Tras in patients with non-metastatic HER2-positive breast cancer. We have wanted to show the antibodies anti-trastuzumab determination as a possible tool that would enable comparison of potential differences in immunogenic behavior between trastuzumab and its biosimilars.

Keywords

Anti-drug antibody, HER2-positive, pharmacokinetics, administration route, trastuzumab

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