

## IMSN Alert – Risk of confusion between the names trastuzumab-emtansine and trastuzumab

Trastuzumab emtansine (Kadcyla<sup>®</sup>) is an anti-HER-2 monoclonal antibody conjugated to DM1, a maytansinoid microtubule inhibitor. Trastuzumab emtansine is indicated for the treatment of adult patients with HER2-positive, unresectable locally advanced or metastatic breast cancer who previously received trastuzumab (Herceptin<sup>®</sup>) and a taxane, separately or in combination. The recommended dose of trastuzumab emtansine is 3.6 mg/kg given as an IV infusion every 3 weeks (21-day cycle) as a single agent until disease progression or unacceptable toxicity. Trastuzumab is prescribed in doses up to 8 mg/kg every 3 weeks—more than twice the maximum dose of trastuzumab emtansine.

Considering trastuzumab emtansine merely as a salt of trastuzumab, instead of a much more potent drug conjugated with an active moiety, is a root cause of confusing trastuzumab emtansine and trastuzumab leading to serious overdoses. During the clinical trials of trastuzumab emtansine, there were two deaths due to this mix-up. As a result, the US Food and Drug Administration added a contrived prefix (ado) to help differentiate these drugs, but ado-trastuzumab emtansine is a common name only used in the US (1). In Canada, two near misses have occurred and reported leading to ISMP Canada's safety alerts to raise awareness about the potential for medication errors involving trastuzumab emtansine and trastuzumab (2).

However, the nomenclature commissions at national and international level (respectively USAN Council and WHO INN Programme) did not approve the drug name proposed by the FDA, a complementary source of confusion throughout the world. Even in the US there remains a danger that it might be ignored because electronic indexes and other references available via the Internet most often do not include the US prefix. The International nonproprietary names (INN) trastuzumab emtansine and trastuzumab are respectively published in recommended lists 45 and 65 by the WHO INN Programme, the international body to which a proposal for substitution of any INN shall be submitted. The risk of confusion between trastuzumab emtansine and trastuzumab at a global level was presented by the International Medication Safety Network (IMSN) to the WHO INN Programme during the last meeting on 10 April 2014. A proposal for substitution of trastuzumab emtansine is being considered by the Canadian Association of Provincial Cancer Agencies (CAPCA). Health Canada wrote to the WHO INN Programme on behalf of CAPCA expressing their concerns, which are planned to be discussed during the 59<sup>th</sup> Consultation on INNs from 14 to 16 October 2014.

Considering the interim period during which a new substitute INN should be examined, the International Medication Safety Network (IMSN) highly recommends that health care professionals be made aware of this problem and that drug information systems and guidelines employ strategies to differentiate the names and warn against confusion as a proactive risk reduction strategy. Ideally, healthcare authorities as well as patient and medication safety organisations should promote use of both the INN and the brand name for these medications throughout all the medication-use process (e.g. medication order, computer prescriber order entry systems, medication labels, medication administration record, etc.). Such a redundancy can be helpful in reducing error potential.

**About IMSN:** The International Medication Safety Network (IMSN) is an international network involving medication safety organizations, and medication safety experts and advocates. Established in November 2006 by the “Salamanca Declaration to Promote Safe Medication Practices Globally”, IMSN aims to prevent patient harm globally by promoting safe medication practices and collaboration between everyone involved in the medication use process. [www.intmedsafe.net](http://www.intmedsafe.net)

- (1) National Medication Errors Reporting Program - Institute for Safe Medication Practices. Confusion regarding the generic name of the HER2-targeted drug KADCYLA (ado-trastuzumab emtansine). 17 April 2013, 2 pages. <http://www.ismp.org/NAN/files/20130417.pdf>
- (2) ISMP Canada. Look-Alike / Sound-Alike ALERT: trastuzumab emtansine (Kadcyla) and trastuzumab (Herceptin) ISMP Canada safety bulletin 4 November 2013 ; 13 (10) : 6. [http://www.ismp-canada.org/download/safetyBulletins/2013/ISMPCSB2013-10\\_HYDR0morphone.pdf](http://www.ismp-canada.org/download/safetyBulletins/2013/ISMPCSB2013-10_HYDR0morphone.pdf)