International Society of Oncology Pharmacy Practitioners

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2014 Updates and Changes to the NIOSH Hazardous Drug List

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Since 2010, the National Institute for Occupational Safety and Health (NIOSH-U.S.) has updated its list of hazardous drugs every two years. The most recent update to the list was published in late 2014. The 2014 update initially reviewed approximately 250 potentially hazardous drugs. Following the review process, 27 new drugs were added to the list (see below table) (Tables 1-3www.cdc.gov/niosh/docs/2014-138/). Of these, five already had safe handling recommendations from the manufacturer which are automatically listed by NIOSH as hazardous drugs. The new additions met one or more of the NIOSH criteria for a hazardous drug. Until recently, the handling information in the drug package insert has included references to ASHP (2006) Oncology Nursing Society (2011); OSHA (1999); and NIOSH (2004), but recently they only include a link to the OSHA website that links to the NIOSH website on hazardous drugs (www.osha.gov/SLTC/hazardousdrugs/index.html).

In addition to the new drugs listed for 2014, 11 drugs were removed from the original 2004 list based on their evaluation according to the NIOSH criteria and one other drug, tetracycline, was removed from the list based on stakeholder feedback and revaluation (Tables 4a and 4b, www.cdc.gov/niosh/docs/2014-138/).

To better meet the needs of stakeholders and end-users, NIOSH moved from a universal precautions type of approach to a user-based approach for the most recent update. The 2014 list includes three classes of hazardous drugs: Group 1, drugs that are classified as antineoplastic drugs by American Hospital Formulary Service (AHFS); Group 2, non-antineoplastic drugs that are hazardous; and Group 3, drugs that primarily have adverse reproductive effects. Some drugs in Group 2 also have reproductive effects and are identified as such. The three groups contain 97, 47, and 40 drugs, respectively.

The 2014 list includes a new class of drugs used to treat some cancers. Two conjugated monoclonal antibodies, ado-trastuzumab emtansine and brentuximab vedotin, are listed based on safe handling recommendations from their manufacturers. These drugs have a toxic compound linked to the monoclonal antibody that delivers the compound to the tumor and releases it to kill the tumor cells. With more drugs of this type being developed, it is expected that others will be added to the list in future updates.

Recently, more medications that belong to two groups of drugs have been added to the list. One is oral cancer drugs that are often taken for months or years by patients. The other group includes non-antineoplastic drugs or drugs with reproductive effects that also meet the NIOSH criteria for a hazardous drug.

NIOSH has provided guidance on engineering controls and personal protective equipment for handling hazardous drugs in a number of the more common scenarios that might be encountered in healthcare settings (Table 5, www.cdc.gov/niosh/docs/2014-138/).

During the past couple of years, several states have adopted the NIOSH Alert and the NIOSH hazardous drug list into their state regulations. The first to do this was Washington, followed by California and North Carolina. California's and North Carolina's rules, however, only refer to antineoplastic drugs and not all hazardous drugs.

2014 Additions to NIOSH Hazardous Drug List	
Drug	ASHS Classification
Group 1. Antineoplastic Drugs	
Abiraterone	10:00 Antineoplastic Agents
Ado-trastuzumab emtansine*	10:00 Antineoplastic Agents
Brentuximab vedotin*	10:00 Antineoplastic Agents
Cabazitaxel*	10:00 Antineoplastic Agents
Crizotinib	10:00 Antineoplastic Agents
Eribulin	10:00 Antineoplastic Agents
Erlotinib	10:00 Antineoplastic Agents
Vandetanib*	10:00 Antineoplastic Agents
Vemurafenib	10:00 Antineoplastic Agents
Group 2. Non-Antineoplastic drugs	
Abacavir	8:18.08.20 nucleoside and reverse transcriptase inhibitors
Apomorphine	28:36.20.08 Nonergot-derivative dopamine receptor agonists
Deferiprone	64:00 Heavy metal antagonists
Dexrazoxane*	92:56 protective agents
Fingolimod	92:20 biologic response modifiers
Fosphenytoin	28:12.12 hydantoins
Liraglutide recombinant	68:20.06 incretin mimetics
Nevirapine	8:18.08.16 nonnucleoside reverse transcriptase inhibitors
Phenytoin	28:12.12 hydantoins
Propylthiouracil	68:36.08 antithyroid agents
Spironolactone	24:32.20 mineralocorticoid receptor antagonists
Group 3. Drugs with Reproductive Effects	
Fluconazole	8:18.08 azoles
Icatibant	92:32 complement inhibitors
Misoprostol	56:28.28 prostaglandins
Topiramate	28:12.92 anticonvulsants, miscellaneous
Ulipristal	68:12 contraceptives
Voriconazole	8:14.08 azoles
Warfarin	20:12.04.08 coumarin derivatives
*Safe handling recommendations from manufacturer	

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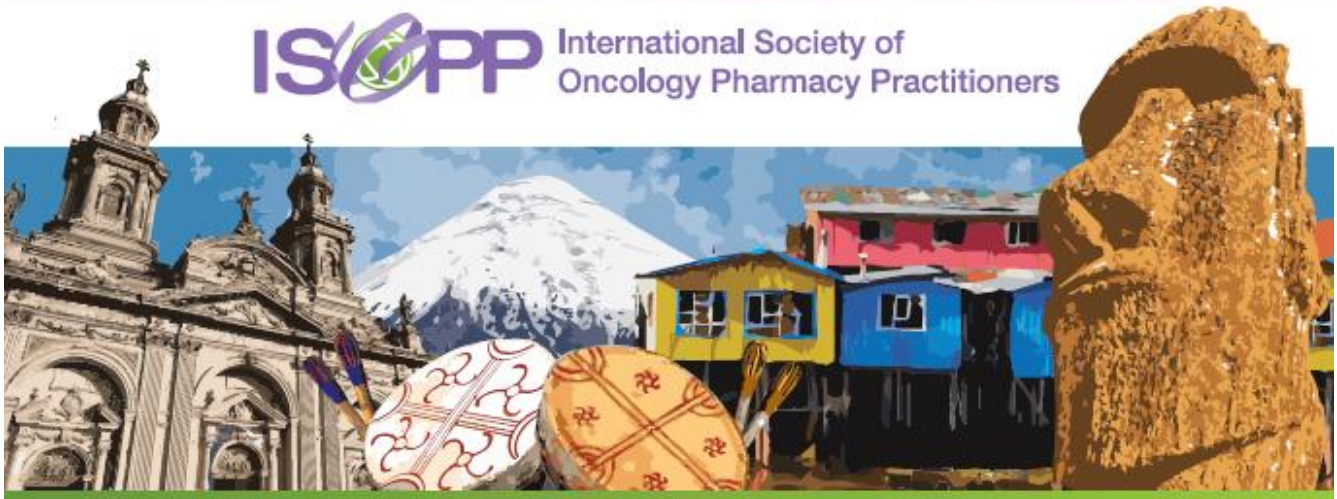

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Julie Torode, MD

Deputy CEO and Advocacy & Programmes Director of the Union for International Cancer Control (UICC), Geneva, Switzerland

Clinical Impact and Recent Outcomes of Immunotherapy in Solid Tumours: Is it the Pathway for Cancer Cure?

Christian Caglevic, MD

Medical Oncologist and Head of Early Development Drug Unit of Instituto Oncologico, Fundación Arturo López Pérez, Santiago, Chile

Novel Immunotherapy for Melanoma: Mechanisms, Outcomes, and Future Strategies

R. Donald Harvey, PharmD

Associate Professor, Hematology/Medical Oncology, Director, Phase 1 Clinical Trials Section, Winship Cancer Institute of Emory University, Atlanta, USA

Dermatologic Toxicities: The Superficial Side of Targeted Therapies

Mario Lacouture, MD

Associate Professor and Oncodermatology Program Director, Dermatology Service, Memorial Sloan Kettering Cancer Center, New York, USA

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