SAFER HANDLING OF ORAL HAZARDOUS DRUGS IN HOSPITAL UNITS

P. Tejedor Prado, E.A. Álvaro Alonso, E. Izquierdo García, A. Santiago Pérez, A. Such Díaz, S. Esteban Casado, A. Lázaro Cebas, I. Cañamares Orbis, C. Esteban Alba, and I. Escobar Rodríguez.

Hospital Universitario Infanta Leonor, Pharmacy, MADRID, Spain.

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BACKGROUND

After the National Institute for Occupational Safety and Health (NIOSH) classified Hazardous Drugs (HD), it was deemed necessary to make healthcare workers aware of the risks associated with handling HD in their daily work to mitigate them.

PURPOSE

Analyzing oral HD handling activities to make handling recommendations based on the lowest dust-inhalation risk and to ensure the safety of healthcare workers in hospital units.

MATERIAL AND METHODS

1. Oral HD were classified in two categories: group 1&2 and group 3 according to NIOSH grouping system.
2. Oral HD handling activities in hospital units based on their dust-inhalation risk to the workers were ranked and decisions were taken accordingly:

- Marketed liquid formulations is strongly preferred
- Crushing tablets using closed systems is preferred over compounding medication due to shorter administering periods in hospital units
- Opening capsules and sachets must be avoided

3. ranking was followed for every oral

- If no marketed liquid alternatives were found,
- research on crushing and dissolving tablets techniques was conducted
- Lacking crushing techniques, academic research on compounding oral HD was carried out
- For the remaining oral HD, information was requested to manufacturers

RESULTS

59 Active Pharmaceutical Ingredients (API) from group 1&2 were analyzed

Marketed liquid formulation	Techniques on crushing and dissolving tablets	Compounding oral information	No information
13 API	21 API	13 API	12 API
abacavir, cyclosporine, crizotinib, phenytoin, megestrol, mycophenolate mofetil, mycophenolic acid, nevirapine, oxcarbazepine, trametinib, tofacitinib, valganciclovir, and zidovudine	abiraterone, axitinib, busulfan, dasatinib, entecavir, enzalutamide, everolimus, exemestane, flutamide, imatinib, letrozole, medroxyprogesterone, melphalan, mercaptopurine, methimazole, methotrexate, mitotane, ponatinib, rasagiline, sorafenib and tamoxife	azathioprine, capecitabine, carbamazepine, cyclophosphamide, chlorambucil, etoposide, hydroxyurea, procarbazine, spironolactone, sunitinib, tacrolimus, thalidomide and topotecan	bexarotene, bosutinib, cabozantinib, fingolimod, fludarabine, ixazomib, lenalidomide, nilotinib, pazopanib, pomalidomide, regorafenib y vinorelbine

No information was obtained for 20,3% API for which avoiding their handling and seeking other therapeutic alternative is advised. For the remaining 79.7% API, recommendation priority is given to the lowest dust-inhalation risk handling alternative.

CONCLUSION

Save handling alternatives were found for most of the analyzed oral Hazardous Drugs in the sample with potential to minimize workers handling risk and ensures safety measures in hospital units.

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Contact us: pilar.tejedorprado@gmail.com

Hospital Universitario Infanta Leonor, Madrid, Spain

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