Perception of the Usefulness of Drug/Gene Pairs and Barriers for Pharmacogenomics in Latin America

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Abstract:

Pharmacogenetics and Pharmacogenomics areas are currently emerging fields focused to manage pharmacotherapy that may prevent undertreatment while avoiding associated drug toxicity in patients. Large international differences in the awareness and in the use of pharmacogenomic testing are presumed, but not well assessed to date. In the present study we review the awareness of Latin American scientific community about pharmacogenomic testing and the perceived barriers for their clinical application. In order to that, we have compiled information from 9 countries of the region using a structured survey which is compared with surveys previously performed in USA and Spain.

The most relevant group of barriers was related to the need for clear guidelines for the use of pharmacogenomics in clinical practice, followed by insufficient awareness about pharmacogenomics among clinicians and the absence of regulatory institutions that facilitate the use of pharmacogenetic tests.

The higher ranked pairs were TPMT/thioguanine, TPMT/azathioprine, CYP2C9/warfarin, UGT1A1/irinotecan, CYP2D6/amitriptiline, CYP2C19/citalopram and CYP2D6/clozapine. The lower ranked pairs were SLCO1B1/simvastatin, CYP2D6/metoprolol and GP6D/chloroquine. Compared with USA and Spanish surveys, 25 pairs were of lower importance for Latin American respondents. Only CYP2C19/esomeprazole, CYP2C19/omeprazole, CYP2C19/celecoxib and G6PD/dapsone were ranked higher or similarly to the USA and Spanish surveys.

Integration of pharmacogenomics in clinical practice needs training of healthcare professionals and citizens, but in addition legal and regulatory guidelines and safeguards will be needed. We propose that the approach offered by pharmacogenomics should be incorporated into the decision-making plans in Latin America.

Keywords: Adverse drug reactions, biomarkers, clinical recommendations, clinical relevance, pharmacogenomics.

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