

Potential drug name confusion in Taiwan: an analysis of look-alike, sound-alike list of 72 hospitals

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Background: Drug name confusion is one of the most common causes of medication errors and may be harmful to the patients. Medications with look-alike or sound-alike (LASA) names, either brand or generic, can easily lead to errors in drug prescribing, dispense or administration, and therefore is a critical safety management issue. However, there is a lack of systematic study on drug name confusion in Taiwan. **Methods:** In May 2017, 155 accredited hospitals in Taiwan were invited to provide their LASA drug list and related records of medication error and near-miss data. We measured orthographic and phonetic similarity of the reported LASA drug pairs respectively using the BI-SIM and modified EDITEX algorithms (both scores range from 0-1, with a higher score indicating greater similarity). Similarity scores comparing each pair's generic and brand name combination were calculated. The highest similarity score for each LASA drug pair was analyzed by its origin, and the distribution associated with pharmacological / therapeutic category was assessed (using 3-digit code level of the Anatomical Therapeutic Chemical [ATC] code). LASA pairs of insulins, vaccines, and combination drugs were not included in the analysis. **Results:** A total of 1,219 unique pairs of LASA drug names (both generic and brand names considered) were reported from 72 hospitals, after excluding 12 pairs of insulins, 6 with vaccines and 94 with combination drugs. The highest similarity score of LASA drug names ranged from 0.25 to 0.93. Approximately half of the highest similarity score were resulted from brand name-brand name confusion (49.96%), following by generic name-generic name confusion (38.72%). Three-fourths (76.54%) of the LASA pairs were in different pharmacological/therapeutic subgroup. Antidiabetics, systemic antibacterials, and psycholeptics were the most likely to be reported with the same pharmacological / therapeutic subgroup, while psycholeptics, psychoanaleptics, and agents acting on the renin-angiotensin system were the most likely to be confused with drug names of different subgroups. **Conclusions:** Brand name-brand name confusion is the most common type of LASA pairs reported in Taiwan. Most of the reported LASA pairs are in different pharmacological / therapeutic subgroups, which makes it more difficult to prevent and might be more dangerous when medication errors occur. Pre-approval strategies such as computerized search for orthographic and phonetic similarity, although cannot eradicate the problem, may be an efficient way to reduce confusing drug names in the market. To ensure safer medication use, more studies are needed to investigate the problems of drug name confusion and identify effective measures for prevention.