

Assessing the Quality of Published Case Reports of Look-Alike and Sound-Alike Medication Errors

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BACKGROUND

- 15% to 25% of the reported medication errors in the United States are accounted for by look-alike and sound-alike drug name confusions.
- It is important that we learn from these errors to prevent similar incidents from happening again.
- Most of our knowledge about these drug name confusions is based on voluntary medication error report mechanisms such as the USP Medication Error Reporting (MER) Program and USP MedMARxSM.
- Voluntary case reports on drug name confusions can also be found in published journals, newspapers, magazines, and other literature.
- Until now there has been no study assessing availability and quality of these published drug name confusion case reports.

OBJECTIVES

- To evaluate the availability and the content of published case reports on drug name confusions.

METHODS

Search Strategy

- Published case reports on drug name confusions were identified using computerized search of MEDLINE /PubMed, International Pharmaceutical Abstracts (IPA), and Google.
- Keywords or Medical Subject Headings (MeSH) such as *look alike, sound alike, drug name confusion, medication errors, nomenclature, terminology, prescription drugs, handwriting and memory* were used.
- The date of most recent search was July 2004.

Content Analysis

Drug Product Information

Drug names, generic/brand, strength, route of administration, dosage form, manufacturer, dosage schedule, color and shape.

METHODS

- Medication Error Information**
 Direction of the error, number of incidents, severity of the error, staff who made/discovered the error, settings where the error occurred, origins of error.
- Patient Information**
 The gender and the age of the patient.
- Case Report Information**
 The name of the author(s), the year of publication, the name/volume/issue of the journal/magazine/newspapers, etc.

RESULTS

- 1641 articles published from year 1964 to 2004 relevant to drug name confusions were retrieved.
- A subset of articles reporting actual errors (as opposed to near misses) was identified.
- 281 articles met the inclusion criteria.
- These articles discussed 611 cases with 892 occasions where the wrong drug was given due to drug name confusion.
- 501 unique drug names were involved in these medication errors.
- 307 unique drug pairs contributed to these 611 cases.
- The most widely available information is the direction of the error, 78.1% (477 out of 611).
- The least available information was the color (<1%), shape (<1%), manufacturer (13%) of the drug products, patient age (17%) and gender (25%).
- Frequency Distribution of different features:

Direction	Case
Not Specified	134
Specified	477
% of Specified Information	78.07

RESULTS

Error Outcome Category	Case
Error, Harm (G)	9
Error, No Harm (D)	14
Error, Harm (H)	28
Error, Harm (F)	39
Error, No Harm (C)	45
Error, Death (I)	53
Error, Harm (E)	74
Error, No Harm (B)	85
Not Specified	264
% of Specified Information	56.79

Settings	Case
Others	3
Physician Office	12
Pharmacy	78
Hospital	124
Not Specified	394
% of Specified Information	35.52

Staff Made	Case
Patient	1
Others	12
Technician	17
Physician	49
Nurse	51
Pharmacist	127
Not Specified	354
% of Specified Information	42.06

Staff Discovered	Case
Others	15
Patient	17
Nurse	29
Pharmacist	60
Physician	60
Not Specified	430
% of Specified Information	29.62

RESULTS

Error Originations	Case
Administering	19
Prescribing	43
Documenting	57
Dispensing	166
Not Specified	326
% of Specified Information	46.64

Drug Attributes	Specified	Not Specified	% of specified info
Drug1 Strength	252	359	41.24
Drug1 Dosage	176	435	28.81
Drug1 Route	192	419	31.42
Drug1 Manufacturer	82	529	13.42
Drug2 Strength	251	360	41.08
Drug2 Dosage	163	448	26.68
Drug2 Route	190	421	31.10
Drug2 Manufacturer	79	532	12.93

LIMITATIONS

- The search might be not exhaustive.
- Some information coding involved subjective judgment.
- Information retrieved might not be comprehensive, some other features might be important but were not included.
- A case might appear in more than one publication.

CONCLUSIONS

- Most of the case reports did not contain sufficient and important information regarding the drug name confusion medication error.
- Standard format for medication error reporting is recommended.

ACKNOWLEDGEMENT

- This project was funded by Agency for Healthcare Research and Quality (AHRQ).