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Review Article

Strategies to Manage and Prevention of the Look-Alike and Sound-Alike (LASA) Drugs Associated Medication Errors: A Review

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ABSTRACT

In healthcare, drugs related confusions are one of the major contributors to the inappropriate use of drug therapy. Look-alike and sound-alike (LASA) drugs are a category of drugs having a high potential to confuse the healthcare professionals and patients due to their similar resemblance and pronunciation. Due to the confusing nature of LASA drugs, there is always a possibility of medication errors and potential harm to the patient. So, proper management is very essential to prevent the misuse of LASA drugs. Development, implementation and maintenance of medication policy are highly required for the proper management of medications and ensure patient's safety.

Keywords: Look-alike and sound-alike (LASA) drugs, medication errors, adverse drug events, Medication management, drug formulary, patient's safety

INTRODUCTION

Drugs related issues are always a concern for the patient's safely in healthcare. Improper drug management may lead to potential of medication errors and significant harm to the patients. Out of many drugs associated problems, handling of LASA drugs is one of the major concerns due to their potential to create confusion among healthcare professionals and patients. A pair of look-alike drugs resembles physically (Figure- 1 & 2) and sound-alike drugs have almost similar pronunciation to each other. Due to this reason the potential of LASA drugs to involve in medication errors is very high. So, all LASA drugs are high alert medications due to the potential to cause medication errors and possible harm to the patient.

Potential of LASA drugs associated medication errors can happen at any level of medication process. During selection and procurement of drugs or brands, there may be similarity in appearance or pronunciation with the existing drugs in the formulary. If such drugs are selected for the drug formulary, it may provide an opportunity of medication errors. If the drugs prescribed with illegible handwriting, the drugs having small differences in their names can easily be misinterpreted while transcribing the order to pharmacy or misinterpretation by pharmacist. Due to confusion of LASA drugs, wrong drug may be dispensed by pharmacist and administered by nursing staff to the patient.

Healthcare accreditation bodies like NABH (national accreditation board for hospitals and healthcare providers) and JCI (joint commission international) also recommend the implementation of a system to manage LASA drugs.

Pyrolate (Glycopyrrolate) and Tropine (Atropine) Injection

Figure- 1 (Look-alike drugs)

Augmentin DUO and Augmentin DDS Syrup

Figure- 2 (Look-alike drugs)

Some examples of look-alike and sound-alike drugs (LASA) are given in table- 1 & 2.

Table no. - 1		
Sl No.	LOOK-ALIKE DRUGS	
1	AVIL 25MG TAB	LASIX 40 MG TAB
2	DOMSTAL TAB	ALPRAX 0.25MG TAB
3	ROPARK TAB	LONAZEP TAB
4	OLEANZ - 5 MG TAB	MIRTAZ - 7.5 MG TAB
5	SOLU-MEDROL INJ	DEPO-MEDROL INJ
6	ADRIAMYCIN INJ	FARMORUBICIN INJ
7	CISPLATIN INJ	CYTOSAR INJ
8	PYROLATE INJ	TROPINE INJ
9	AUGMENTIN DUO SYP	AUGMENTIN DDS SYP
10	OTRIVIN NASAL DROP (ADULT)	OTRIVIN NASAL DROP (PAEDS)

Table no. - 2		
Sl No.	SOUND-ALIKE DRUGS	
1	ALPrax TAB	ATArax TAB
2	ACivir DT TAB	VALCivir TAB
3	DOPamine INJ	DOBUTamine INJ
4	epHEDrine INJ	epiNEPHrine INJ
5	haloVAte CREAM	haloBAte s CREAM
6	hydrALAzine INJ	hydrOXYzine TAB
7	monOTRATE TAB	mONTAIR TAB
8	R-ciN CAP	R-ciNEX CAP
9	RELent TAB	VALent TAB
10	SOLiten TAB	ROLiten TAB

Contributing factors to cause LASA drugs associated medication errors

I. **System related problems:** No medication management policy (includes High alert medications policy) or if available lack of adherence to it, improper distribution of work, work overload and no monitoring of LASA drugs are the main system related issues.

II. **Staff related problems:** Negligency, casual attitude towards patient's safety, overconfidence and lack of knowledge are the main staff related issues.

Steps to prevent LASA drugs associated medication errors

A. **Development, implementation and monitoring of medication management policy**: As LASA drugs comes under high alert medications so a policy should be made and approved by pharmacy & therapeutics committee to handle LASA drugs. The policy needs to be made to avoid potential of LASA drugs associated medication errors and should include following important points:

I. All high alert medications should be labeled with red dot so that it can be indentified easily.

II. These drugs should be stored behind lock and key and separate from the rest of drugs stock.

III. These drugs should be verified at least twice by two different health care professionals involved in medication process at all levels i.e. prescribing, ordering, dispensing, administration and monitoring steps.

IV. Specific instructions for LASA drugs:

- A defined list of LASA drugs should be made in accordance with hospital drug formulary. This list should be approved by pharmacy and therapeutics

committee and circulated well among all healthcare professions for reference, training and education use.

- Color coding of storage cabinets should be done to differentiate LASA drugs. For example- Look-alike drugs may be stored behind blue labeled cabinet and sound alike drugs may be stored behind pink colored cabinet.
- A pair of LASA drugs should not be stored together. Both the drugs of a pair should be stored separate from each other and a different cabinet to avoid confusion.
- Tall man lettering may also be done to write the LASA drugs to differentiate easily and prevents the possibility of medication errors.

B. While selection of the drugs for the hospital drug formulary, it is necessary to ensure whether the drug is look-alike or sound-alike with the existing drugs in the formulary or not. If possible, drugs with similar appearance and pronunciation should not be added in the hospital drug formulary.

C. Minimize the prescribing of such brand name of drugs that can create confusion. The prescription should be neat and clean to prevent misinterpretation.

D. Verbal drugs orders should be avoided. Only in case of emergency, the order should be taken only by doctor, pharmacist or nurse and read back again to avoid confusion.

E. Establish a mechanism to monitor the complete medication process for prevention of potential of adverse drug events. Clinical pharmacy services should be employed in each patient care area to review and manage the medication process.

CONCLUSION

As LASA drugs have potential to create confusion so these drugs should be handled carefully to prevent the medication errors and potential harm to the patients. All healthcare professionals should be careful while processing LASA drugs for the patient's safety. Proper development, implementation and monitoring of medication management policy is a very essential requirement for a healthcare setup. Clinical pharmacists may be appointed due to their important role in management of medications. It is the responsibility of all healthcare professionals to respect the hospital policy and promotes the quality of patient's care.

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