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Correspondence

The hazards of look alike packaging in anaesthesia practice



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Dear Editor,

We address a problem that we faced while working at a tertiary level teaching institute. Our institution follows a zero prescription policy where all the drugs, intravenous fluids and commodities are available on schedule. According to our local government policy, the company that matches the desired specifications and has the lowest price point gets the contract for supplying the drug. Reducing the cost of production often leads to reduction in the quality and safety of the products. In municipal hospitals, purchasing of drugs is the exclusive responsibility of the municipal pharmacy, and usually, the drugs are purchased without reference or discussion with the concerned department. Any changes in supply or packaging are usually not officially communicated to the users, as was in our case.

One of the problems faced is the similar packaging of intravenous drugs. The problem is compounded in anaesthesia as the drugs being mostly intravenous, are rapidly acting and of diverse actions. Look-alike ampoules and vials are a reality; simply because there are so few designs and colours to choose from and so many injectable drugs to dispense. Though some of the combinations may have subtle differences in font, shade, size some others are blatantly similar. Though extreme caution has to be taken while loading drugs, some oversight occurs in emergency situations, fatigue, stress, in the hands of inexperienced juniors, poor lighting and with multiple distractions. The mistake of injecting ranitidine in place of chlorpheniramine, or gentamicin in place of ondansetron may not seem to be very significant but the similarities in the midazolam-heparin, atracurium-noradrenaline, soda bicarbonate-potassium chloride ampoules and vials are a recipe for disaster (See Figs. 1–3).

As we gradually became aware of the possibility of these drastic blunders, there was more vigilance among the residents especially with the above mentioned combinations of duplicitous drugs. Junior residents started devising new ways of distinguishing between the ampoules and vials, storing them at the back of the drug cupboard in a separate box, wrapping transparent micropore

around one of the drugs in the pair to help in tactile differentiation. We were also trained to read the name of the drug aloud twice to eliminate most chances of errors. But the sheer possibility of the iatrogenic complications that could occur is bewildering.

About 1/3 of all cases of confusing medication correlate with similar packaging and labelling of drugs, at the same time 50% of all cases of confusing medication is due to poor performance of qualified staff.¹ Many articles are available documenting the hazards of look alike drug labels.² These should continue to be documented as this can increase awareness among care givers and reduce complications. Also stricter legislation should be implemented and guidelines should be laid down with regular scrutiny to reduce the incidence of this problem. Potent and dangerous drugs like vasopressors, muscle relaxants should be labelled with more diligence with different non similar colours as the problems can be fatal if these drugs are involved in a mixup.

The Joint commission national patient safety goals have issued a list of Look alike sound alike (LASA) drugs and have included look-alike packaging as an additional safety check and hospitals are supposed to adapt practices to prevent mixup of these drugs. Implemented process changes include moving and reorganizing shelf storage bins, enhancing labelling for intravenous medications with similar packaging, tracking and responding to automated dispensing cabinet filling errors and revising processes for selecting and maintaining the list of look-alike, sound-alike medications added to the formulary and changes in packaging resulting from contract changes or drug shortages.³ The FDA and the Institute for safe medication practices (ISMP) have promoted the use of tall-man lettering as one of the means of reducing confusion between similar drug names.⁴

Current recommendations to prevent these errors are quite extensive but in a country like ours, not all are feasible. This issue needs to be approached on an individual basis, taking into consideration local setups as well as financial issues. Apart from all regular requirements like dispensing of medications only by degree holding doctors and nurses, extreme vigilance while dispensing medications, enough workforce to shoulder workload, other recommendations like interdisciplinary cooperation, keeping lists of such duplicitous drugs in all wards and operation theatres to increase awareness, replacing such drugs with drugs having different packaging or drug names from different companies, barcode scanning technology at point of care, recurrent training for staff for LASA awareness, highlighting or relabelling of these drugs by the pharmacy and stringent feedback of these issues to the supplying pharmaceutical companies by the hospital administration should be followed.



Fig. 1. (Left) The ampoules of ranitidine and chlorpheniramine look strikingly similar. (Right) The ampoules of atracurium and noradrenaline are similar in all aspects except slight difference in size.

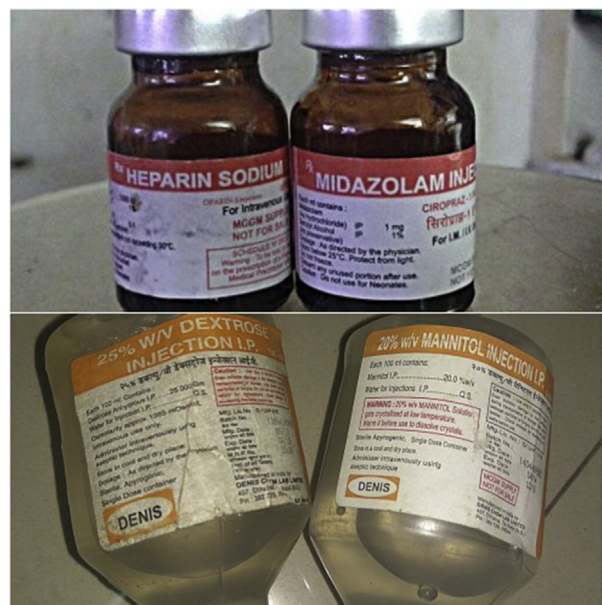


Fig. 3. (Top) The vials of midazolam and heparin are spitting images of each other. (Bottom) The 100 ml pints of 25% dextrose and mannitol are very similar.

Ethical approval

Ethics review form not applicable as our article is in the correspondence section also it is a purely observational article without any involvement of human subjects.

Conflicting interest

There are no conflicts of interests for either authors.

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Fig. 2. (Left) The ampoules of gentamicin, ondansetron, tramadol are very similar with slight differences in shade. (Right) The ampoules of soda bicarb and potassium chloride are very similar in size and shade.

Drug errors are said to be uncommon, but its mostly because they are underreported. Safety should not rely only on human perfection, but rather focus on designing systems, processes, and tasks that make it difficult for people to make mistakes at all. As the saying “An ounce of prevention is worth a pound of cure”, There should be no compromises in ensuring patient safety.