



A smelly business

Case report

In January 2004 an ampoule of acetylcystein (Lysomucil[®], ampoule C in the picture) was found in place of Dynatra[®] (ampoule B) in the dopamine section of the drawer of the anesthesia drug cart in a cardiac surgery operating room. Inspecting the dopamine section in the central pharmacy of the operating theatre found, among some twenty B-type ampoules one small size -same concentration- dopamine ampoule (D) and one normal-sized ampoule on which the label was reduced to a few dots of white enamel (A). All mistakes had clearly occurred before transport to the operating theatre where only B-type ampoules are normally distributed.

Acetylcystein is used mainly in Intensive Care Units (ICU), vaporized as aerosol or injected intravenously as a bolus. Dopamine also is regularly used in the ICU. A quick inquiry among ICU personnel disclosed that Lysomucyl[®] ampoules were frequently confused with Dynatra[®] ampoules, and both were frequently found in the wrong rack. Four nurses from four different ICU sections were interviewed separately ; despite the differences between ampoules in print size, orientation and color, all nurses admitted having already drawn one ampoule for the other. None had actually injected the wrong drug, yet. When asked why, every one answered “the smell”.

Discussion

Acetylcystein has a pungent and easily recognizable smell. One could understand this feature could stop diluting the drug in place of dopamine by experienced personnel. However, the major danger of these look-alike ampoules comes from a direct intravenous injection of 200 or even 50 mg of dopamine in place of acetylcystein when treating an acute respiratory condition, not from diluting the latter before infusing it to a cardiac patient. Once more, this example underscores the potentially unsafe practice of marketing concentrated solutions of potent resuscitation drugs in undiluted ampoules instead of ready-to-use clearly labeled syringes.

The present issue is complicated because the ampoules are fabricated by two different companies, while their similar aspect is obviously source of confusion. Because their similar shapes and colors provoke so many routing and stocking errors, today the principal barrier preventing lethal mistakes is located at the execution level, at the patient bedside, and consists in the recognition by experienced personnel of the typical smell of acetylcystein. A very weak barrier indeed when considering the current frequency of near-misses. Let us hope a common cold afflicting a nurse won't result in a patient's death before an adequate solution is found.