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Antiseptics: sometimes the cause of infection

● **Single-use containers are safer.**

In late 2013, the US Food and Drug Administration (FDA) issued a warning about the possibility of bacterial contamination of antiseptic solutions (1).

Many infections caused by contaminated antiseptic solutions have been reported (1). The consequences ranged from localised infection at an injection site, to deep infections and even fatal septicaemia.

The FDA analysed a series of reports including 4 deaths, 5 wound infections, 7 cases of peritonitis, 10 cases of septic arthritis, 14 catheter infections, 16 injection site infections, and 32 cases of bacteraemia. These infections were confirmed to have been caused by a contaminated antiseptic solution. The products involved included all of the commonly used antiseptic agents: alcohol, iodophores, *chlorhexidine*, and quaternary ammonium compounds. The microorganisms involved were a variety of bacteria and mycobacteria (1).

The microorganisms were usually introduced into the antiseptic by diluting it with contaminated water, by inappropriate handling, or by storing it under non-sterile conditions. In a few cases, contamination occurred during the manufacturing process.

In practice. The use of an antiseptic is not a barrier to infection. It is better to avoid using and discard any antiseptic that has been stored or used under conditions that could result in contamination, in particular if it has been diluted with non-sterile water or stored inappropriately. Antiseptic solutions packed in single-use containers avoid this problem, provided they are not kept after opening.

Selected references from Prescrire's literature search

1- US FDA "FDA Drug Safety Communication: FDA requests label changes and single-use packaging for some over-the-counter topical antiseptic products to decrease risk of infection" 20 November 2013: 2 pages.

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Mirtazapine: rhabdomyolysis

● **Reports from the WHO database.**

In late 2013, the Uppsala pharmacovigilance centre analysed 47 reports in the World Health Organization (WHO) pharmacovigilance database of rhabdomyolysis associated with the antidepressant *mirtazapine* (1).

The affected patients, 31 men and 16 women, had a median age of 43 years. One case involved in utero exposure of a neonate whose mother had attempted suicide by overdosing on *mirtazapine* and *venlafaxine*. The outcomes of 35 cases were known, and included one death, and two patients who recovered with sequelae. Six cases were suicide attempts.

Mirtazapine was the only suspected drug in 18 cases. The doses were generally between 15 mg and 45 mg daily.

Mirtazapine is similar to *mianserin* and has noradrenergic, serotonergic and antihistamine properties (1,2). Many possible mechanisms were postulated, mainly related to the fact that *mirtazapine* provokes muscle adverse effects, such as myalgia and muscle rigidity, as well as serotonin syndrome and neuroleptic malignant syndrome. It is metabolised by the cytochrome P450 isoenzyme CYP3A4, and co-administration of inhibitors of this isoenzyme can therefore lead to *mirtazapine* accumulation and enhance its dose-dependent effects.

In practice. In light of these findings, healthcare professionals and patients should be on the alert for muscle symptoms during *mirtazapine* therapy, and its harm-benefit balance should be reviewed if they develop.

Selected references from Prescrire's literature search

1- Uppsala Monitoring Centre "Mirtazapine and rhabdomyolysis" *WHO Pharmaceuticals Newsletter* 2013; **5**: 15-17.

2- "Mirtazapine". In: "Martindale The Complete Drug Reference" The Pharmaceutical Press, London. www.medicinescomplete.com accessed 16 December 2013: 8 pages.

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Antithrombotic and cytotoxic drugs: too often fatal

● **Anticoagulants, antiplatelet drugs and cancer drugs were the leading causes of drug-related hospital deaths in a study conducted in Bordeaux, France.**

In France, national data on drug-related mortality are scarce (1). Extrapolating from data from other countries, a very approximate estimate is that about 20 000 hospitalised elderly or disabled patients die of adverse drug effects in France each year (1).

The Bordeaux regional pharmacovigilance centre conducted a retrospective cohort study over a one-year period, using the databases of two hospitals in the Aquitaine region, including Bordeaux University Hospital. It identified 66 patients whose death was attributed to a drug. 31 of these patients died from haemorrhaging during treatment with an anticoagulant and/or an antiplatelet drug (the drugs involved were not specified). The deaths of 16 other patients were attributed to cancer drugs (drug not specified) (2).

In practice. This local study serves as a reminder of how close an effective dose can be to a harmful dose for many drugs, particularly antithrombotic and cytotoxic drugs. It also underlines the urgent need for serious action to help healthcare professionals improve their practices in a tangible way.

Selected references from Prescrire's literature search.

1- Prescrire Rédaction "Effets indésirables mortels des soins hospitaliers" *Rev Prescrire* 2011; **31** (330): 269.

2- Begnis L et al. "Medicine-associated deaths and use of the medical hospital database: extension of a previous study" 34th pharmacovigilance meeting, Angers: 22-24 April 2013. *Fundamental Clin Pharmacol* 2013; **27** (suppl. 1): 99 (abstract P2-108).