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Case report medication error: oral antibiotics and simethicone accidentally injected intravenously

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Sir: We report the clinical sequelae of the accidentally intravenous administration of a nonsterile mixture of oral antibiotics and simethicone to a 62-year-old woman in our ICU. The lady was admitted with septic shock following a laparotomy for a large-bowel perforation. Selective decontamination of the digestive tract (SDD) was instituted [1, 2, 3]. SDD consists of the administration of an intravenous antibiotic together with the topical application of antibiotics: SDD pasta is applied orally, SDD containing suppositories are inserted rectally and SDD solution (containing per 10 ml: 500 mg amphothericin B, 100 mg colistin sulfate and 80 mg tobramycin sulfate and viscosity enhancers carbomere and propylene glycol; preparation protocol, Pharmacy Isala Clinics, Sophia, Zwolle, The Netherlands) is administered with simethicone (to prevent flatulence and meteorism) via the feeding tube.

Unintentionally 10 ml oral SDD solution and 4 ml simethicone were injected into the parenteral feeding catheter, lying next to the oral feeding catheter beside the patient, and flushed with 10 ml nonsterile water. Realizing her mistake, the nurse immediately withdrew 30 ml blood and reported the incident. While seeking information on possible clinical consequences that would herald specific medical intervention, the following treatment adjustments were made:

- FIO_2 was increased from 0.4 to 1.0 due to a sudden transient decrease in SaO_2 from 98% to 88%.
- PEEP was increased from 10 to 14 cmH_2O.
- Hydrocortisone (100 mg) was given intravenously and three times per day thereafter.
- Clemastin (4 mg) was administered intravenously once to prevent allergic reactions.

The rest of the treatment policy was maintained.

The FIO_2 and PEEP could gradually be tapered over a period of 24 h to, respectively, 0.4 and 10 cmH_2O. One of the repeated chest radiographs showed slight worsening of the already existing small left pleural effusion, which regressed again during the following hours. There was a transient febrile response (from 37.5°C to 39.6°C) at 2 h after the incident and an acute-phase response (C-reactive protein rose temporarily from 39 mg/l to a maximum of 98 mg/l 18 h after the incident and the leukocyte count from 17.6×10^9 to a maximum of 24.2×10^9/l 19 h after the incident). Serum lactate rose to a maximum of 2.9 mmol/l 10 h after the incident and measured 1.7 mmol/l on the following morning. All other laboratory values were restored to preincident values within 48 h following the incident, and there were no signs of other organ dysfunction. Three days after the incident the patient was weaned from the ventilator and extubated. After another 3 days she was discharged from the ICU to the general surgical ward in a good clinical condition.

Very little information could be retrieved from the present literature. The Netherlands' National Poisons Information Centre and the pharmacist suggested observation and symptomatic treatment. Viscosity enhancers such as carbomerum and polypropylene glycol from the SDD suspension or the hydrophobic simethicone may cause pulmonary microvascular occlusion and simulate a clinical acute respiratory distress syndrome. This may explain the transient rise in temperature, C-reactive protein, lactate, and leukocytes. It has been suggested that intravascular injection of dimethicones may be fatal [4]; however, this claim has not been substantiated. Measures should be taken to avoid such accidents from happening. For instance, syringe connections used for administration of solutions through oral and parenteral feeding lines should not be interchangeable or use only previously prepared syringes.

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