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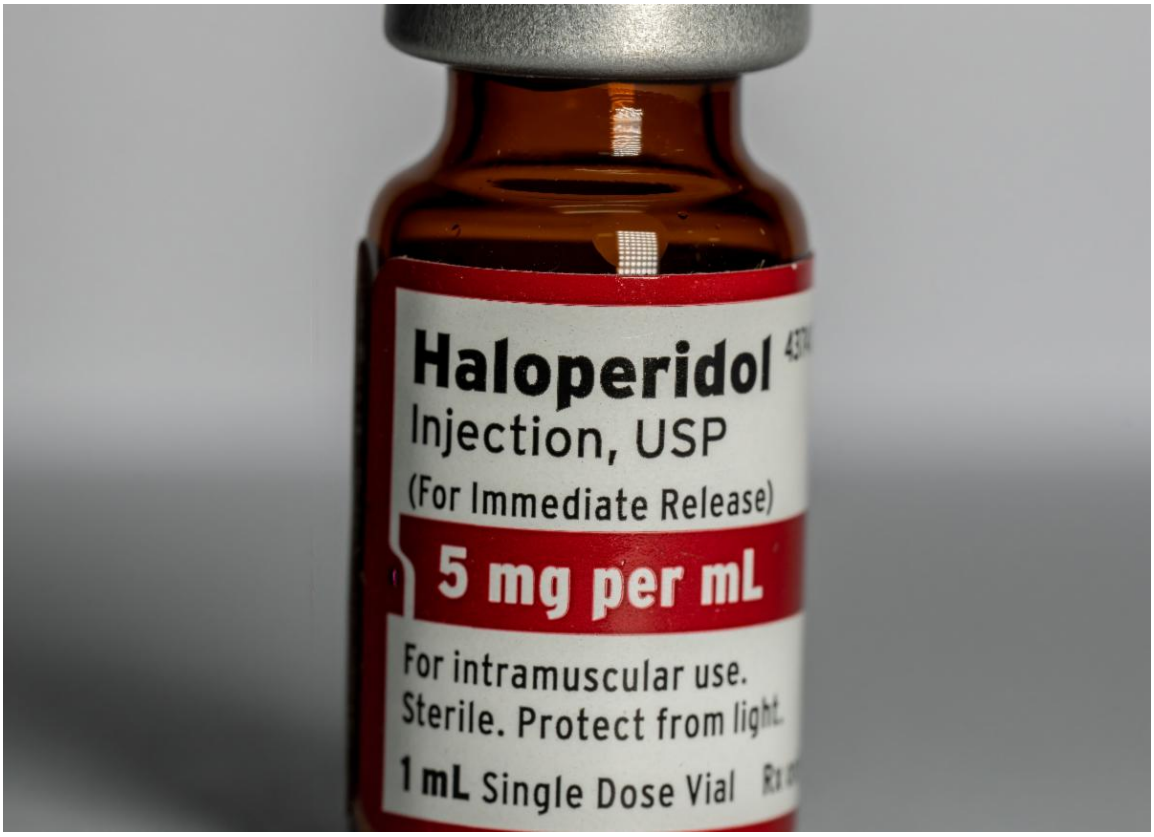

Wrong-Route Errors Involving Haloperidol: Beware of Its Unintended Intravenous Administration

By Myungsun Ro, PharmD, MS

Haloperidol is a butyrophenone antipsychotic that is approved for the treatment of schizophrenia.[1] Only the intramuscular route is approved for parenteral use by the U.S. Food and Drug Administration (FDA); however, intravenous (IV) haloperidol lactate has been used over the years for several off-label indications.[2-4] The long-acting depot formulation, haloperidol decanoate, should never be administered intravenously.[5]

The IV administration of haloperidol carries a label warning relating to QTc prolongation and Torsades de Pointes, for which electrocardiogram monitoring is recommended.[1,5] A review of Pennsylvania Patient Safety Reporting System (PA-PSRS)[†] event reports found adverse drug reactions involving IV haloperidol include ventricular tachycardia, apnea requiring intubation, neuroleptic malignant syndrome, and seizure.

Over 200 events describing wrong-route errors involving haloperidol have been reported to PA-PSRS. Of these, almost half detail cases in which parenteral haloperidol, which was originally intended for *intramuscular* injection, was administered *intravenously*. Most of these events involve the haloperidol lactate formulation; however, accidental IV administration with the decanoate formulation has also been reported.

To prevent wrong-route errors with haloperidol lactate, we advise that facilities examine and consider implementing the action items below.

- Restrict verbal orders to urgent situations where computerized provider order entry is not possible or practical. Reevaluate and/or create guidelines for the appropriate use of verbal orders, specifying the required information that should be included and recommending safe practices such as the readback method to confirm the order.
- Require pharmacist verification of the order and subsequent profiling of medication in the automated dispensing cabinet (ADC).
- Follow proper protocol in labeling and scanning the medication prior to administration.
- Create an alert in the ADC and/or barcode medication administration to remind the user of the intended route of administration.
- Reduce distractions during dispensing, preparation, and administration of the medication.
- Supervise students and trainees throughout all stages of the medication-use process.

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† PA-PSRS is a secure, web-based system through which Pennsylvania hospitals, ambulatory surgical facilities, abortion facilities, and birthing centers submit reports of patient safety–related incidents and serious events in accordance with mandatory reporting laws outlined in the Medical Care Availability and Reduction of Error (MCARE) Act (Act 13 of 2002).[6] All reports submitted through PA-PSRS are confidential and no information about individual facilities or providers is made public.

References

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Medication Safety Event Reports

Lead to Facilitywide Change

Event reports do more than simply record what went wrong—they're an important way to communicate issues so things can go better next time. That's why one medical center holds weekly meetings to review all medication-related events reported by frontline staff. Over several months, two participants of this workgroup, a pharmacy manager and quality improvement coordinator, noticed a concerning trend: a bacitracin solution ordered for wound irrigation was being administered through an intravenous (IV) bag instead of through the wound vacuum-assisted closure (VAC) device. Although the error had not yet harmed any patients, these staff members saw an opportunity to make improvements that would keep patients safe.

Recognizing that the mistake was happening because the antibiotic medication was provided in an IV bag, the workgroup queried frontline staff for solutions and consulted with the wound VAC manufacturer about their ideas. This resulted in a product switch to bacitracin in a bottle instead of a bag; the bottle cannot be connected to a patient's IV, only to the wound VAC for irrigation. The pharmacy manager also worked with the center's information technology team to change computerized provider order entry for the medication to indicate "irrigation solution" instead of "intravenous solution," which also removed "intravenous" from printed medication labels, helping to avoid possible confusion. By highlighting an issue before patients were harmed, these event reports and proactive staff kicked off facilitywide innovations in hardware, systems, and processes, preventing more serious adverse events later.

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