

Preventing Vincristine Administration Errors: Does Evidence Support Minibag Infusions?

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Although vincristine sulfate is indicated for IV use only, it has been inadvertently administered intrathecally. Accidental vincristine administration via the spinal route (intrathecally via a lumbar puncture or intraventricularly via an Ommaya reservoir) causes rapid sensory and motor dysfunction, usually followed by encephalopathy, coma, and death (Schulmeister, 2004). Autopsy findings include grossly edematous and congested brain and spinal cord tissue, with axonal degeneration and myelin loss of the spinal nerves (Kwack et al., 1999; Williams et al., 1983).

The incidence of this type of “wrong route” medication error is unknown, but 37 cases have been reported in the literature and 8 were reported to the United States Pharmacopeial (USP) Convention, Inc., and Institute for Safe Medication Practices (ISMP) Medication Errors Reporting Program. Additional cases have not been reported but have prompted litigation or appeared in the media (Joint Commission on Accreditation of Healthcare Organizations [JCAHO], 2005; Schulmeister, 2004).

Inadvertent intrathecal vincristine administration occurs when a syringe containing vincristine intended for IV administration is mixed up with another syringe that contains a drug to be given intrathecally, such as methotrexate or cytarabine. It also can occur when a vincristine-filled syringe is placed in close proximity to a syringe containing intrathecal chemotherapy and healthcare providers incorrectly assume that vincristine is an additional intrathecal drug to be injected. Mislabeling of syringes, failure to check a prescriber’s treatment plan and medication orders, and unfamiliarity with cancer chemo-

therapy also may cause or contribute to this type of error (Fernandez, Esau, Hamilton, Fitzsimmons, & Pritchard, 1998; JCAHO, 2005).

Vincristine administration errors prompted USP labeling requirements and standards for vincristine packaging, which include cautionary labeling that states “FATAL IF GIVEN INTRATHECALLY. FOR IV USE ONLY. DO NOT REMOVE COVERING UNTIL MOMENT OF INJECTION.” Vincristine syringes also are placed in overwraps imprinted with the warning. Despite the USP standard, a patient died when vincristine was dispensed without a warning label on the syringe or outer wrapper and the drug was inadvertently administered intrathecally along with the patient’s prescribed intrathecal chemotherapy (ISMP, 2003).

Various recommendations to eliminate the risk of inadvertent intrathecal vincristine administration have been proposed.

Consensus is that (a) healthcare providers who prescribe, prepare, and administer intrathecal chemotherapy should receive specialized training; (b) orders for intrathecal chemotherapy should be written separately from orders for IV chemotherapy, and, ideally, an order form should be designed specifically for intrathecal chemotherapy; (c) intrathecal chemotherapy should be packaged and transported separately from IV or other drugs; (d) intrathecal chemotherapy should be delivered to patient care areas immediately before administration and should not be stored in patient care areas; (e) “time out” should be conducted immediately preceding intrathecal chemotherapy administration; and (f) a “do not disturb” sign should be posted while intrathecal chemotherapy is being administered (Department of Health, 2003; Gilbar & Carrington, 2004; ISMP, 2003; JCAHO, 2005; Root & the British

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Digital Object Identifier: 10.1188/06.CJON.271-273