PREVENTION OF FATAL VINCRISTINE (AND OTHER VINCA ALKALOIDS) ADMINISTRATION

MOROCCO, April 2019

A 38-year-old male with diffuse large B-cell lymphoma was to receive five preparations on the same day: a rituximab bag, a cyclophosphamide bag, a doxorubicin bag, an intravenous vinCRIStine syringe and an intrathecal methotrexate syringe. The physician discovered on the vinCRIStine syringe it was inadvertently labeled "strictly intrathecal". The information on the secondary packaging was the source of confusion as both syringes indicated the intrathecal route of administration without mentioning the name of the medication. Through communication between the physician and the pharmacist the error was intercepted.[1]

GUYANA ,January 2019

Three children, 1 male and 2 females were inadvertently administered intravenous vinCRIStine intrathecally. The 3 children received both methotrexate and vinCRIStine as part of cancer treatment, they all became paralyzed and were placed on life support. Unfortunately, all 3 children died.[2]

NORWAY, August 2017

A 6-year-old male diagnosed with a brain tumor was given vinCRIStine given via an Ommaya reservoir in place of methotrexate. The error was discovered by a nurse 20 minutes after the injection had ended. He was placed in an artificial coma and died 22 days later.[3]

VinCRIStine (and other vinca alkaloids) should only be given intravenously via a minibag

Since 1968 this error has been reported in international settings over 140 times.[4] While there appears to be a recent decrease in the rate of reported cases of this scenario, they still occur with devastating outcomes for patients, their families and all involved.

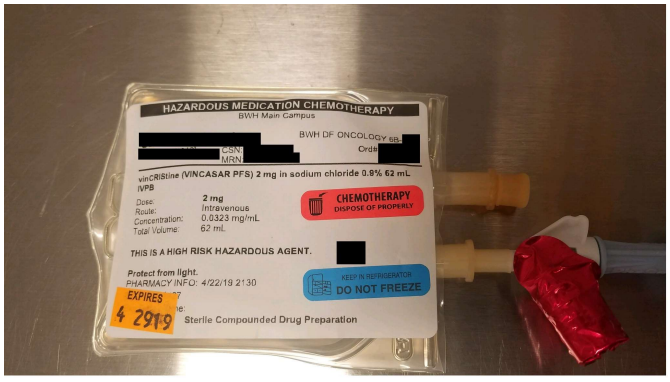
VinCRIStine is one of the vinca alkaloids (others are vinBLAStine, vinorelbine and vindesine); these medications are used for cancer chemotherapy. The drugs should be given by way of the intravenous route.[5] When injected intrathecally these medications cause breathing problems, brain-spinal cord

dysfunction and death; almost universally. Depending on the protocol, the misidentification of vinCRIStine in a syringe as intrathecal methotrexate in a syringe, intrathecal cytarabine in a syringe or an intrathecal glucocorticoid in a syringe continue to put patients at risk for fatal outcomes. In addition, the ability to recover from this event is minimal, making prevention of these events essential.

Intrathecal cytarabine syringe and intravenous vinCRIStine syringe

STRATEGY FOR PREVENTION OF FATAL VINCRISTINE ADMINISTRATION ERRORS

The United States Food and Drug Administration recently updated the product labeling of vinCRIStine to indicate that it should be administered ONLY in minibags, NOT syringes.[6] The use of a pre-filled flexible minibag (25 or 50 mL) of normal saline has been utilized as a strategy to prevent these incorrect route of administration events. The use of minibags to administer vinCRIStine and other vinca alkaloids provides a visual cue to administering providers that the medication is NOT for intrathecal use. If pre-filled flexible minibags of normal saline are not commercially available, it might be possible to utilize sterile empty 50 mL flexible containers for administration of vinca alkaloids. Administration of vinCRIStine in this way has not been demonstrated to increase rates of extravasation.[7] Utilizing pharmacy services to prepare vinca alkaloids in a minibag provides a prevention strategy that occurs further away from the site of direct patient care, where better results may be achieved.[8]



Intravenous vinCRIStine in a minibag

Empty flexible 50 mL container

SUPPORT FOR THIS INTERVENTION

WHO has previously issued a warning [9] and the occasional reports of these events are still of concern. These events are occurring worldwide and the use of minibags to administer vinCRIStine (and other vinca alkaloids) should be implemented as a strategy to prevent these events. Organizations such as Association of Clinical Oncology[10], Oncology Nursing Society[11], International Society of Oncology Pharmacy Practitioners[12], National Comprehensive Cancer Network[13] and Institute for Safe Medication Practices-US[14], Canada[15], Spain[16] and Brazil[17] also recommend dispensing and administering vinca alkaloids in this way to increase the safety of care provided to patients.

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