Hefty Subcutaneous Dose Volumes

There are a few cancer treatment drugs on the market that should only be administered by subcutaneous injection, such as Rituxan Hycela (rituximab and hyaluronidase) and Herceptin Hylecta (trastuzumab and hyaluronidase-oysk). These drugs are different from their intravenous (IV) formulations, Rituxan (rituximab) and Herceptin (trastuzumab) respectively and cannot be used interchangeably. The subcutaneous formulations Rituxan Hycela and Herceptin Hylecta can be administered in minutes instead of hours making them more convenient for oncology patients. However, confusion may arise as the dose volumes for these drugs are quite large compared to a typical subcutaneous dose (1 to 2 mL). The dose volume for subcutaneous Rituxan Hycela is either 11.7 mL or 13.4 mL. The dose volume of Herceptin Hylecta is 5 mL.

The administration of chemotherapy drugs by subcutaneous injection is a new practice. There have been reports of clinicians erroneously administering these large dose volumes intravenously. Education and training should be provided to all oncology staff including the following information:

- Rituxan Hycela (rituximab and hyaluronidase), subcutaneous formulation
    - Used to treat adults with chronic lymphocytic leukemia, diffuse large B-cell lymphoma, or follicular lymphoma
    - Usual dose is either 11.7 mL (1,400 mg rituximab/23,400 units hyaluronidase) or 13.4 mL (1,600 mg/26,800 units) provided in a 20 mL syringe
    - Inject into the subcutaneous tissue of the abdomen over 5 to 7 minutes
- Herceptin Hylecta (trastuzumab and hyaluronidase-oysk), subcutaneous formulation
    - New drug used to treat human epidermal growth factor receptor 2 (HER2) breast cancer
    - Fixed dose is 600 mg/10,000 units per 5 mL (120 mg trastuzumab/2,000 units hyaluronidase per mL)
    - Inject over 2 to 5 minutes, once every 3 weeks, alternating between the left and right thigh
- These formulations contain hyaluronidase which help to increase dispersion and absorption of drugs when given subcutaneously
- Subcutaneous and intravenous formulations share the same first name:
    - Rituxan Hycela (rituximab and hyaluronidase) is the subcutaneous form and Rituxan (rituximab) is the IV form
    - Herceptin Hylecta (trastuzumab and hyaluronidase-oysk) is the subcutaneous form and Herceptin (trastuzumab) is the IV form
- Subcutaneous Rituxan Hycela should not be used as initial therapy
    - IV Rituxan (dosed at 375 mg/m^2) should be given as the first dose and if tolerated, subcutaneous Rituxan Hycela can be used as subsequent treatment
- Subcutaneous Herceptin Hylecta may be used as initial therapy, without an initial IV dose
    - IV Herceptin is dosed based on weight (mg/kg)

Strategies to help prevent errors:

References

1. Institute for Safe Medication Practices. (2018). *Nurse Advise-ERR.* Retrieved from Institute for Safe Medication Practices: http://www.ismp.org/newsletters/nursing/issues/NurseAdviseERR201904.pdf

- Utilize barcode systems.
- Check labels and ensure the drug prepared is the subcutaneous-only formulation.
- Herceptin Hylecta syringes should be labeled with an auxiliary warning “Administer subcutaneously in the thigh.”
- Rituxan Hycela syringes should be labeled with an auxiliary warning “Administer subcutaneously in the abdomen.”

References

1. Institute for Safe Medication Practices. (2018). *Nurse Advise-ERR.* Retrieved from Institute for Safe Medication Practices: http://www.ismp.org/newsletters/nursing/issues/NurseAdviseERR201904.pdf