

Administration of Doxorubicin via Central Line

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Problem

- Identified need for change in administration of doxorubicin from IV push to IV pump for patients with a central line, due to risk of human error with IV push pace and high nursing time burden.

Introduction

- Doxorubicin is a chemotherapy vesicant that can only be given via IV pump if a central line is present.
- Doxorubicin is traditionally administered by IV push over 45-55 minutes, requiring over an hour of dedicated 1:1 RN time.
- When pushing a vesicant through a central line, there is a higher chance of human error (pushing too fast or too slow) than if the medication is administered by IV pump at a controlled rate.
- Due to the nursing shortage, chemotherapy clinic has been short staffed and is looking for ways to decrease nursing time burden.

References

- "Highlights of Prescribing Information," Doxorubicin Hydrochloride, <https://www.drugs.com/pro/doxorubicin.html#s-34093-5>
- "Hazardous Drugs," OSHA, <http://www.osha.gov/SLTC/hazardousdrugs/index.html>

Objectives

- The purpose of this quality improvement project was to change the administration procedure for doxorubicin via central line from IV push to IV pump.
- This change was initiated to increase patient safety, by reducing human error, and increase nurse availability on the unit.



Figure 1: Vials of IV doxorubicin.

Methods

- The Chemotherapy Unit Based Council consulted Pharmacy on what changes can be made to increase patient safety and reduce nursing time burden.
- By working with pharmacy, it was determined that doxorubicin can be safely diluted in saline or D5W for administration via IV pump, if a central line is present.
- This change in IV preparation was introduced to the oncology providers, who suggested updating the ordering templates for this administration method.
- Education was provided to the chemotherapy nurses who infuse the medication and the oncology providers who order doxorubicin.

Results

- Administration of doxorubicin via IV pump through a central line was implemented in the outpatient chemotherapy clinic in November 2023.
- The chemotherapy ordering templates that include doxorubicin administration were updated to reflect the change in VAPORHCS.
- After 6 months of implementation, there were no patient safety reports and anecdotal improvement in nursing satisfaction with process.

Discussion

- This nurse led change has improved patient safety and decreased nursing time burden.

Contact

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Doxorubicin 50mg/m² = mg in NS 100ml at a rate NTE 4mg/min via pump ONLY if central line. Otherwise, infuse through sidearm of free flowing IV of NS by gravity.

Figure 2: EMR order template for doxorubicin.