The Use of Chlorhexidine in Combating Phlebitis

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Introduction

Phlebitis is a common complication that can easily be prevented if the proper steps are taken. Phlebitis is the inflammation of the tunica intima of the venous wall characterized by discomfort, swelling, redness, pain, erythema, puss at the insertion site, and an increased risk of developing further complications (Mulugeta et al., 2021).

Phlebitis is the inflammation of the tunica intima of the venous wall characterized

- **Discomfort**
- **Swelling**
- **Redness and Erythema**
- **Pain**
- **Puss**

(Mulugeta et al., 2021).

Purpose

There has been an increase in the number of patients developing phlebitis at the IV site after experiencing a chlorhexidine swab shortage.

After speaking to the nurse managers and coordinator of the IV team, they felt that providing staff with education and the importance would benefit the department and aid in the decrease of infection rates.

Know Your Needle!

When inserting an IV we need to know why we are doing it.

Based on the reason for needing an IV determines the size that will be inserted

- draw blood (20 gauge)
- administer medications and/or fluids (20-22 gauge)
- surgery (16 gauge)
- blood transfusion (18 gauge)

A pediatric patient will be receiving a 24 gauge needle due to the size of their veins.

We practice the same cleaning techniques prior to insertion on every person that needs an IV. We take the same precautions no matter the age or circumstance.

REFERENCES

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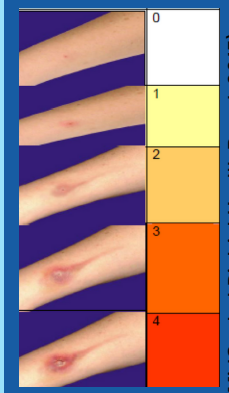
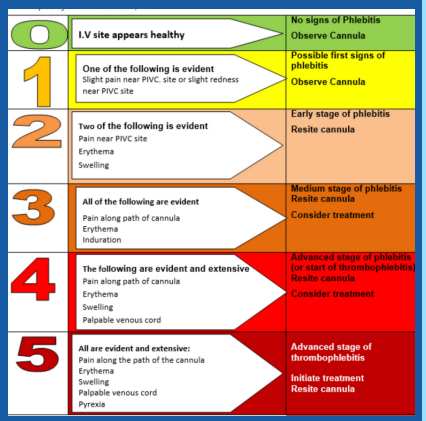
Visual Infusion Phlebitis Score (V.I.P)



(MidCentral District Health Board, 2015)



(J.J.L.C, 2019)

****If improper techniques is used the following signs and symptoms may occur:**

1.Discomfort at IV site
2. Pain
3. Redness
4. Swelling
5. Warmth
6.Streaking along the vein

Tips:

1. Wash hands for at least 20 seconds with warm water and soap before donning gloves
2.Allow the cleansed area dry for 15 seconds before initiating IV placement
3.Ensure the correct needle size is chosen

Proper Cleaning and Technique

1. **Gather all necessary supplies and wash your hand**
2. **..Apply a tourniquet 5-10cm proximal to the site, tight enough to engorge the vein**
3. **Inspect and palpate the desired area**
4. **Clean the site with 2% chlorhexidine-70%alcohol solution in a circular motion for 15-20 seconds and let the site AIR DRY completely**
5. **Apply traction using the opposite hand holding the needle to stabilize the vein by pulling the skin tautly**
6. **Hold the needle over the vein for 2 seconds and slowly insert the needle until you see a flashback**
7. **Advance the rest of the catheter into the vein and remove the tourniquet**
8. **Finally, secure the IV in place using appropriate dressings and flush the line**

(Beecham & Tackling, 2022)

Greenwich Policy

Clean site with 2% chlorhexidine- 70% alcohol solution in a back-and- forth motion for 30 seconds and let site AIR DRY completely

(Greenwich Hospital, n.d.)

Choosing Appropriate Sites:

Hands:

1. Basilic
2. Cephalic
3. Dorsal Metacarpal
4. Dorsal Arch

Arms:

1. Cephalic
2. Median Cubital
3. Median Antebrachial
4. Accessory Cephalic Basilic
5. Basilic

Always Avoid Areas of Flexion

Areas to Avoid:

1. Lymphedema
2. Vein Napping
3. Valves
4. A-V Fistula
5. Central Venous Access Device
6. Mastectomy
7. Axillary Lymph Node Dissection

(Greenwich Hospital, n.d.)

Why Alcohol- Chlorhexidine?

One study calculated the incidences of Staphylococcus epidermidis after applying the cleaning solutions

- alcohol-chlorhexidine use 4%
- alcohol use 20%
- chlorhexidine 22%

(Sarani, et al., 2018)

Concluding alcohol-chlorhexidine is the most effective

Alcohol-Chlorhexidine also

- cuts the cost of treatment
- reduces the length of stay
- reduces morbidity and mortality

(Sarani et al., 2018)

Evidence Based Practice

- 33%-67% of patients who are hospitalized require at least one site of IV access (Lulie et al., 2021)
- Of those who acquire IV placement, 13%- 56% of patients experience inflammation (Lulie et al., 2021)
- Studies have found that the combined use of chlorhexidine and alcohol prep solutions is the most effective in decreasing phlebitis
- Age, gender, catheter size, insertion, site, and medications are all factors that can increase the risk of developing phlebitis (Mandal & Raghu, 2019)
- A grading scale grade 0-5 is used to determine the severity of the inflammation and the interventions that are appropriate to alleviate symptoms (Mandal & Ragu, 2019)