The Use of Anesthetics for IV Starts

Columbus State University
Purpose

Patient advocates:
- Strive to provide the utmost comfort for patients

Purpose:
- To determine if the use of local anesthetics reduces the pain and discomfort of patients during venous catheterization
Clinical Question

Should hospital patients receive local anesthetics prior to intravenous catheterization rather than no local anesthetics as a measure to reduce pain?
Options

No Anesthetics

Cream

Lidocaine

EMLA

ELA-Max
No Local Anesthetics

It is the patient’s option to choose whether they would like to have local anesthetics
Cremes

EMLA Cream

ELA-Max
EMLA Cream

- Made of a 1:1 combination of 2.5% Lidocaine and 2.5% Prilocaine
- Applied topically to the intended IV site and covered with an occlusive dressing
- The recommended dose is 2.5 g
- It is also recommended that you give it 45-60 minutes to take full effect; however, some research has found that it can take partial effect and IV pain can be reduced in as little as 5 minutes
EMLA Cream

- Patients taking drugs that induce the production of methemoglobin (such as Sulfonamides, Acetaminophen, and Phenobarbital) should be aware that it can cause methemoglobinemia.

- It is also contraindicated for patients allergic to Lidocaine, Prilocaine, or other topical anesthetic.
ELA-Max

- Each gram of ELA-Max contains 40 mg of Lidocaine, lecithin, propylene glycol, carbomer 940, benzyl alcohol, vitamin E acetate, cholesterol, triethanolamine, polysorbate 80, and purified water
- Reaches maximum effect in 30 minutes
- It does not contain Prilocaine so there is no risk of methemoglobinemia
- ELA-Max applied for 30 minutes is as effective as EMLA cream applied for 60 minutes in preventing pain during IV insertion
- Cost of ELA-Max and EMLA Cream is approximately the same

Lidocaine

- Recommended dose is 0.1-0.5 mL of 1% Lidocaine
- Using a 25-29 gauge needle, inject the Lidocaine into the intra-dermal tissue lateral and distal to the intended IV insertion site to prevent fluid from obscuring the IV site
- Onset is rapid and IV can be inserted in 30 seconds
- A downside is that it causes pain
Lidocaine

- The pain of the Lidocaine injection is significantly less than the reported pain of the IV insertion without Lidocaine.
- When given the option for use of Lidocaine before IV insertion in the future, 74.4% of participants said they would prefer it.

Lidocaine vs. Cream

- In one particular study the group who received the Lidocaine experienced the most pain as far as applying the local anesthetic.
- The group who received the EMLA Cream experienced the most pain during IV insertion.

Conclusion

- Patients have a choice in determining if they want to have anesthetics during venous catheterization.
- Our research has found that using Lidocaine or cream are beneficial in reducing pain during IV insertion.
Conclusion

- EMLA Cream and ELA-Max are equally effective, but ELA-Max works in half the time.
- Lidocaine was proven to be the most effective local anesthetic.
- Situational circumstances
  - Emergency
  - Prior knowledge of procedure