Venous Wounds Resulting from Injection Drug Use: A Literature Review

Tyler Manson, DPM1; Matt Krouse, DPM2; Scott Zimmerman, DPM3; Frank W. Zappa, DPM4

Statement of Purpose
There are many different risk factors that are associated with Injection Drug Use (IDU) related venous wounds. The causes and prevention of IDU related wounds will be discussed in this poster. This poster serves to educate health care providers on venous wounds related to IDU.

Risk Factors with IDU
- Skin popping – Purposefully injecting subcutaneously
- Muscling – Injecting intramuscularly
- Missing vein – Accidentally injecting subcutaneously
- Skin hygiene – Washing skin with alcohol or soap and water decreases risk of skin and soft tissue infection by 54%
- Length of time IDU
- Sterility of needle – Shared or reused needles increased pathogen load and risk of skin and soft tissue infection
- Diluents and Adulterants – Chemicals used to dilute or dissolve a drug
- 103 Samples of cocaine found to be 35% pure
- 87 Samples of heroine found to be 23% pure
- Venous Thrombosis caused by adulterants or toxic effects of the drugs

Illicit Drugs used for Injection

**Heroin**
- Most prevalent injectable illicit drug
- Mostly injected intramuscularly or subcutaneously after 5 year history of IDU

**Cocaine**
- Crosses blood-brain barrier very quickly with a maximum effect at 3 minutes
- Cocaine + Heroin = Speed
- Cocaine + Amphetamines
  - Stimulants, hallucinogens, entactogen (empathy, love, ecstasy)
  - Effect lasts 4-6 hours, up to 24 hours

**References**

**Discussion**
Injection drug use is a serious problem in our communities today and has great implications for those treating wounds. Early assessment, education and conservative treatments including leg elevation, compression, and diuretics are keys to preventing IDU relates venous wounds. Encouraging safe injection practices can decrease the risk of infections, however, the greatest impact on decreasing venous wounds related to IDU is through encouraging the cessation of IDU practices.

**Process of Venous Damage**
Injection drug users typically will start injecting into a vein in their arms or hands. Damage is caused to tissue, veins and valves through any or all of the previously mentioned risk factors. When the upper extremity veins become damaged and the user is no longer able to find a vein, they will progress towards lower extremity injection sites. The veins of the lower extremity then become damaged through the same mechanisms, which leads to venous hypertension and finally to venous ulceration.

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