Overcoming the Pain of Haemodialysis Cannulation
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Introduction

Haemodialysis relies on a well functioning fistula allowing ongoing, regular cannulation. Cannulation pain is frequently observed in haemodialysis patient and more so in patients commencing dialysis via a new fistula. Over the period of 12 months a patient can expect to have at least 300 cannulations of their fistula. Cannulation has been shown to cause pain and distress in haemodialysis patients leading to decreased quality of life and non-adherence with treatment. Haemodialysis nurses need to understand and relieve cannulation pain in order to increase the patients quality of life and improve quality of care. Numerous methods of pain relief have been described in literature.

Aim

To identify effective methods use to reduce cannulation pain in haemodialysis patients

Method

A literature review was conducted

Search terms: dialysis cannulation pain

Time period: 2014-2019

Literature type: primary research

Language: English

Inclusion criteria: Identifies methods aimed at reducing cannulation pain for haemodialysis patients

Exclusion criteria: Literature reviews, commentaries

Databases: Medline, Pubmed, CINAHL

Literature Search

Identification

476 articles were retrieved from the initial search

Screening

After reading abstracts, 27 articles were selected for further analysis

Eligibility

Eight articles were deleted as they discussed pain experienced by haemodialysis patients but provided no interventions to relieve cannulation pain. Two articles were deleted due to being duplicate studies

Included

17 Studies were included in the literature review

Results

Pharmacological (n=4 studies):

- **EMLA versus 2% lignocaine infiltration**: Pain score lower with lignocaine but pain from lignocaine injection worse than cannulation without anaesthetic (George et al. 2014).
- **EMLA versus Piroxicam**: EMLA more effective for cannulation pain than Piroxicam, a NSAID topical cream (Malekshahi et al. 2017).
- **EMLA versus Lignocaine topical spray**: EMLA cream caused a greater reduction in pain compared to topical lignocaine spray (p<0.001) (Mirzaei et al. 2017).
- **Arnigol versus Placebo**: Arnigol (Arnica cream) was significantly more effective than a placebo of Vitamin A and D cream (p=0.006) (Nejtabagheri et al. 2018).

Complimentary (n=7 studies):

- **Inhalation of lavender**: Inhalation of lavender for the 10 minutes prior to cannulation and during cannulation demonstrated a significantly lower pain score than no lavender (Bagheri-Nesami et al. 2014; Aliashgharpour et al. 2016; Tasan et al. 2019). Footbath

  The pain intensity using a 40 ± 2 °C footbath demonstrated a lower pain score during cannulation than no intervention (p<0.05) (Azimian et al. 2015; Madadi et al. 2017).

- **Music**: Patient selected soothing music was demonstrated to reduce the pain of cannulation versus noise cancelling headphones (no music) and normal dialysis unit sounds (p<0.001) (Shabandokht-Zarmi et al. 2017; Ghasimi et al. 2019).

Mechanical (n=6 studies):

- **Massage of ice to the Hegu point**: Ice in a glove applied to the Hegu point of non fistula hand using pressure/massage demonstrated significant pain relief during cannulation (Fareed et al. 2014; Aghajanloo et al. 2016; Al Amer et al. 2017; Sunder et al. 2017; Shakhaet et al. 2018 et al.).
- **Ice versus 2% Lignocaine gel**: Ice on Hegu point demonstrated a greater reduction in cannulation pain than 2% Lignocaine gel (Arab et al. 2017).

Conclusion

17 articles were reviewed to uncover demonstrated methods to reduce cannulation pain for haemodialysis patients. Multiple methods demonstrated reduced pain compared to placebo. EMLA, lavender inhalation, footbaths and ice massage to the Hegu point may significantly reduce pain and improve patient quality of life.

References


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Mechanical

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