Novel intermittent pneumatic compression device promotes early cannulation

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Introduction

AV Fistulae

Fistulae are the preferred type of vascular access for hemodialysis.

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Methods

Fist Assist Device

Fist Assist Device: Single Balloon Intermittent Compression on Fistula (2013)

1. External Intermittent Pneumatic Compression
2. Facial compression
3. Worn 15 cm above fistula
4. Easy application and easy monitoring
5. High patient compliance

Vein Adaptation to Hemodynamic Forces

Fist Assist selectively helps dilate forearm veins of 3 to 5-month-old fistulae.

Conclusion

The mean percentage increase in vein diameter in the Fist Assist group was significantly greater than those with IOF at proximal locations of 9 cm, 13 cm, and 15 cm from the anastomosis (p = 0.001, 0.001, and 0.001, respectively).

Results

Faster Maturation Time

Fistula treated with the FA device were cannulated sooner by 4 days in the clinic.

Fist Assist preferentially helps dilate forearm veins of a 3-month-old fistula.

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The Problem

Significant Health Care Costs for Fistula Maturation and Delay Leads to Further Clinical Issues:  
1. More AV fistula failure
2. Prolonged catheter use in vein-end results in infections, and central venous catheters
3. Third party payer monitoring results and quality: survival, hospitalization, intensive care unit, vascular access
4. Placement of new access costs $24 million per year/yearly maintenance and care of access may exceed $50 million per year
5. KDOQI population accounts for 3-9% of the Medicare population, yet 7% of medicare beneficiaries need vascular access

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Non Invasive Competitors for Fistula Maturation

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Clinical Efficacy Study: 2017

1. 51 Patient Fist Assist Study
2. 41 in the treatment group (Fist Assist) and 14 in the control group (sham device)

Fist Assist Device

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Conclusions

Benefits of Fist Assist

1. Superiority of Fist Assist over the sham device
2. Increased vein diameter
3. Reduced catheter use
4. Improved patient compliance and ease of use
5. No tissue or vessel damage

Fist Assist

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Fist Assist: Designed to Help Dilate Veins Efficiently

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