

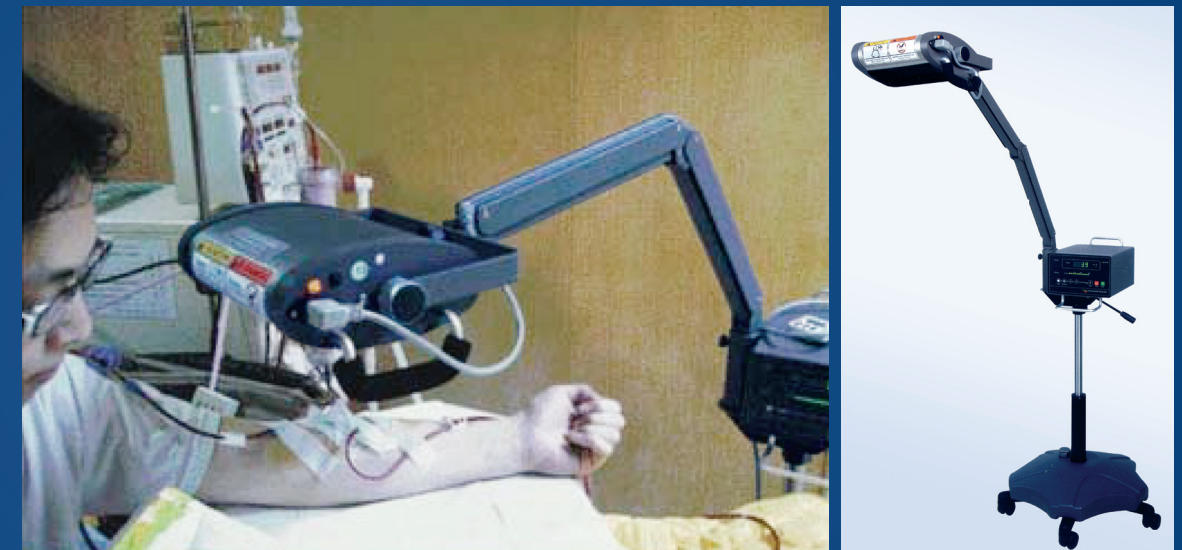


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Far-Infrared Therapy Unit

An Effective Treatment Improving Access Blood Flow and Unassisted Patency of Arteriovenous Fistula in Hemodialysis Patients



“Unassisted patency of AV fistula was **18.3% higher** for patients in the FIR group compared to the control group.”



Far-infrared therapy is a convenient, non-invasive treatment that can significantly improve the access blood flow and unassisted patency of AV Fistula in hemodialysis patients.

CLINICAL TRIAL REPORT

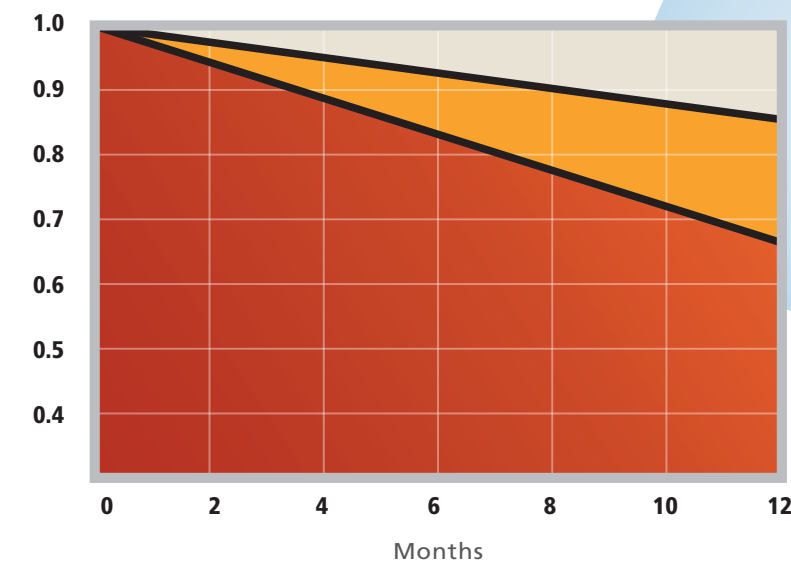
Journal of the American Society of Nephrology

Vascular access malfunction, usually presenting with inadequate access flow (Qa), is the leading cause of morbidity and hospitalization in hemodialysis (HD) patients. This randomized, controlled study was designed to evaluate the effects of Far-Infrared (FIR) Therapy on access flow and patency of the native arteriovenous fistula (AVF). A total of 145 HD patients were enrolled, with 73 in the control group and 72 in the FIR group.

For one year, patients in the FIR group received FIR therapy three times a week for 40 minutes during their dialysis session. The FIR emitter was set 25 cm (10 inches) above the surface of AVF during use. No adverse effects were reported during the study.

As shown below, compared with patients in the control group who did not receive FIR therapy, the unassisted patency of AV fistula was significantly higher in the patients in the FIR group than that in the control group.

“Far-Infrared Therapy: A Novel Treatment to Improve Access Blood Flow and Unassisted Patency of Arteriovenous Fistula in Hemodialysis Patients.” Lin CC, Chang CF, Lai MY, Chen TW, Lee PC, Yang WC. J Am Soc Nephrol. 2007 Mar;18(3):985-92.



Unassisted Patency of AV Fistula

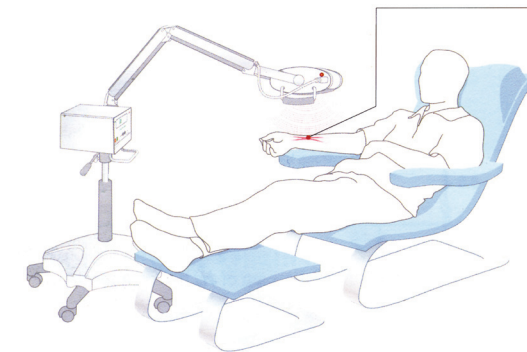
FIR: 85.9%

P < 0.01 by log rank test

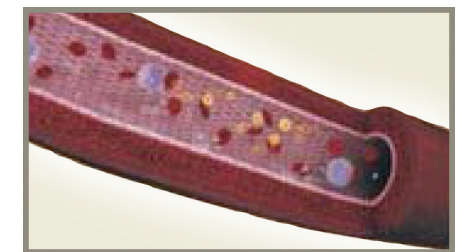
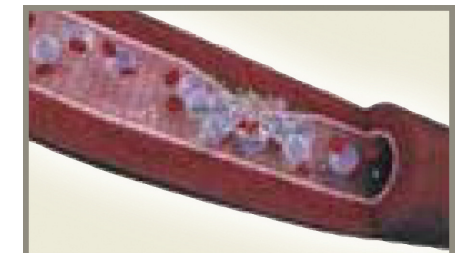
CONTROL: 67.6%

By inducing the expression of Heme Oxygenase-1, Far Infrared Therapy reduces monocyte adhesions in the endothelium cells and therefore reduces the inflammatory responses that cause further endothelial injury and dysfunction. The anti-inflammatory effect of FIR Therapy may provide an answer to how it enhances the survival of AVFs in HD patients.

“Far Infrared Therapy inhibits Vascular Endothelial Inflammation via the Induction of Heme Oxygenase-1.” Lin CC, Liu XM, Peyton K, Wang H, Yang WC, Lin SJ, Durante W. Arterioscler Thromb Vasc Biol. 2008 Apr;28(4):739-45.



AVF under Chronic Vascular Endothelial Inflammation



AVF under Far infrared Therapy care

Advantages for staff:

- Improved quality of dialysis, reduced clinical load of nurses
- May enable easier venopuncture, increase access blood flow, and reduce dialytic venous pressure and emergencies due to poor access blood flow or access failures
- Therapy unit is safe and easy to operate

Advantages for patients:

- Enhanced dialysis efficiency through improved access blood flow
- Helps relieve hematoma and pain caused by venopunctures
- Reduces medical costs by avoiding access intervention, surgery, or hospitalization
- Continued use can improve patency and survival of vascular access

