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The effect of far infra-red (FIR) therapy on vascular access in hemodialysis

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Objectives: The objective of this study was to evaluate the effect of FIR on vascular access flow and patency of AVF in HD patients in Korea and Japan.

Methods: A total of 5 HD patients were enrolled in this study. A WS TY101 FIR emitter (WS Far Infrared Medical Technology Co., Ltd., Taipei, Taiwan) was used for 30 min, and hemodynamic parameters were measured by the LASER perfusion scan monitor and ultrasonography. Also thermography was performed on AVF of the patient after FIR irradiation.

Results: 1. The skin surface temperature of the second finger on AVF side was 29.4 ± 2.3 °C before irradiation, 29.8 ± 1.8 °C after irradiation, and no skin temperature rise of finger was observed.
2. The average value of the skin surface temperature of the AVF area irradiated with FIR was 41.5 °C after irradiation, from 37.1 °C before irradiation and an apparent increase in the skin surface temperature after irradiation was recognized.
3. The second finger skin perfusion pressure (SPP) value on the AVF side was 64.4 ± 4.5 mmHg before the irradiation and 76.2 ± 6.5 mmHg after the irradiation, and a significant increase in the second finger SPP value was observed after irradiation. ($P < 0.05$)
4. The diameter of the vessel on the AVF side after irradiation was 1.9 ± 0.5 before irradiation and 2.1 ± 0.4 after irradiation. It is not a significant difference, but it has been somewhat expanded. Also RI was 0.7 ± 0.1 after irradiation, 0.8 ± 0.1 before irradiation, and there was no significant difference but there was a slight decrease trend.

Conclusions: Our study shows that FIR therapy, a convenient and noninvasive technology, may be an effective therapeutic modality in improving access flow and patency of the AVF in HD patients.

Result 1

결 과

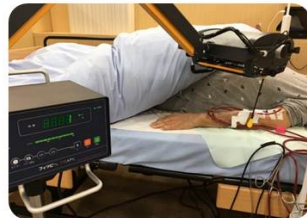
	조사 전	조사 후	P
제 2 손가락의 피부 표면 온도 (°C)	29.4±2.3	29.8±1.8	0.75
피부조직 관류압 (mmHg)	64.4±4.5	76.2±6.5	< 0.05
혈관직경 (mm)	1.9±0.5	2.1±0.4	0.68
R I	0.8±0.1	0.7±0.1	0.08

Result 2

thermography



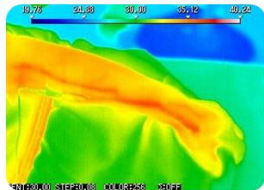
후지츠 특기 시스템 주식회사
인프라아이 3000



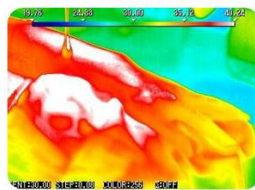
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조사 중에 혈류 잘 통함

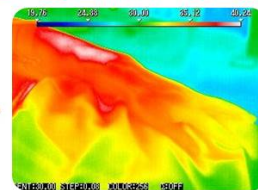
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【조사 직후】



【조사 중】



【조사 후】