

EMPRINT™ ABLATION SYSTEM CLINICAL EVIDENCE

Clinically relevant ablative margin



Evaluation of microwave ablation of liver malignancy with enabled constant spatial energy control to achieve a predictable spherical ablation zone

Study design

A single-center, retrospective cohort study comparing 48 subjects with hepatic tumors (total 56 tumors) treated with Emprint™ ablation system with Thermosphere™ technology to subjects who underwent conventional high-frequency MWA (n=20) or low-frequency MWA (n=20).

Results

When comparing Emprint™ ablation system with Thermosphere™ Technology vs. conventional high-frequency MWA vs. conventional low-frequency MWA:

Factor	Emprint™ ablation system	Conventional high-frequency MWA	Conventional low-frequency MWA
Mean tumor size (range)	13.95 mm (4-37 mm)	12.8 mm (4-26 mm)	11.65 mm (4-28 mm)
Median deviation from ideal sphericity of 1.0 (p < 0.001)	0.135	0.314	0.344
Absolute minimum ablative margin (p < 0.001)	8.1 mm	3.1 mm	2.3 mm
Absolute volume (p < 0.05)	33 cm ³	51.90 cm ³	18.69 cm ³
Ablation time (p < 0.05)	8.4 min	10.1 min	10 min
Technical success	100%	100%	100%
Technical efficacy	100%	95%	100%
Local tumor progression at 1 year	3.57%	5%	5%
Minor complication rate	3.57%	0%	0%

Objective

To assess the Emprint™ ablation system with Thermosphere™ technology (high-frequency microwave ablation [MWA] with enabled constant spatial energy control) for treatment of liver malignancies.

Conclusion

- The Emprint™ ablation system with Thermosphere™ technology produces more spherical ablation zones compared to conventional MWA
- As a result, the Emprint™ ablation system realized two to three times larger minimal ablative margins than conventional MWA with less post-ablative volume than conventional high-frequency MWA

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