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ABSTRACT

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Non-invasive surgical management of uterine fibroid: High Intensity Focused Ultrasound (HIFU) Ablation

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Background: As a non-invasive treatment option, HIFU therapy is receiving more attention for its ability to induce coagulative necrosis at a precise focal point without harming overlying and adjacent structures. This study intended to review HIFU in uterine fibroid therapy, to evaluate the role of HIFU in the therapy as well as to review the actual clinical activities including its efficacy and safety.

Method: The analysis of literature was limited to journal articles written in English and published between 2000 and 2023 by using the keywords “HIFU” and “uterine fibroid”. Additional literature was obtained from original papers and published meeting abstracts.

Result: HIFU treatment for fibroids should be the first-line consideration if surgery is required. Indication for HIFU treatment: 1) Fibroids cause moderate or severe clinical symptoms; 2) Fibroids may lead to difficulty in patients to get pregnant; 3) Severe psychological burdens due to fibroids and their associated symptoms; 4) Young patients with multiple small fibroids may wish to consider therapy. Two major technical problems that HIFU cannot overcome at present: (a) Limitations due to fibroid locations; (b) Foreign objects in the acoustic pathway can make HIFU ablation a risky procedure. Many studies have confirmed its safety and effectiveness. The incidence of major complications is lower than other surgical treatment.

Discussion: HIFU therapy can be an effective therapy option for women with symptomatic uterine fibroids who desire organ-preserving treatment. It is important that clinicians recognize that not all fibroids are suitable for HIFU treatment. However, HIFU can also make some complications especially in women who have desire for future fertility.

Conclusion: HIFU is a non-invasive and highly effective standard treatment with a large indication range for all sizes of leiomyomas, associated with high efficacy, but an appropriate patient selection is an important factor in the successful outcome of HIFU treatment.

Keyword: *Non-invasive surgical management, HIFU ablation, uterine fibroid*