IS-44  MR-guided High-Intensity Focused Ultrasound (MR-HIFU) for Symptomatic Uterine Fibroids Using Volumetric Ablation with Binary Feedback Control: Analysis of Initial Clinical Experiences Focused on Procedure Time

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Objectives: To demonstrate early clinical results of patients with symptomatic uterine fibroid treated by MR-HIFU using volumetric ablation focused on procedure time. Methods: A total of 28 patients who fulfilled the inclusion criteria underwent MR examinations for screening, and eleven of them (39.3%) (36-50 years, mean 42.2) were eligible to HIFU therapy. However, three were excluded because of consent withdrawal (n = 1), procedure termination due to unexplained severe pain (n = 1), and new appearance of bowel interposition on the treatment day (n = 1). The remaining patients (n = 8) had 1-5 fibroids, however, only one dominant lesion (diameter 47-120 cm, mean 9.2 cm; volume 520-7807 mL, mean 3148 mL) was treated. All treatments were performed using volumetric ablation with feedback control technique monitored by MR thermometry. Immediately and 1 month after therapy, contrast-enhanced MR exams were performed. Symptom severity score (SSS, 0-100) was also investigated before and 1 month after the treatment. Results: Number of treatment cells used was 33.3 ± 13.0 (4 mm, 1.3-8 mm, 11.8-12 mm, 18.1-16 mm, 21) per treatment. Overall acoustic power and maximal temperature achieved were 1380 ± 251 (99-188) and 69.5 ± 41.0 (55.6-92.5) °C. On immediate MR, NPV (Non-perfused volume) measured 90.1 ± 61.3 (83.3-177.2) mL which was 307 ± 191 (15.4-679) of fibroid volume. NPV was 174.1 ± 128.0% of planned treatment volume and 160.3 ± 97.6% of 240 equivalent min at 43 °C. Procedure time (1st to last sonication) per patient was 123.5 ± 44.5 min. Duration of sonication for each cell was 259 ± 125 (4 mm, 7.7 ± 1.8; 8 mm, 253 ± 6.8; 12 mm, 347 ± 94; 16 mm, 567 ± 142) sec. NPV/procedure time of early four and late four cases were 20.3 ± 10.7 mL/hr and 70.8 ± 29.6 mL/hr, respectively (p = 0.000) (overall, 65 ± 34 mL/hr), which seemed to be attributed to a learning curve. SSS was significantly improved from 58 ± 13.1 to 27.1 ± 11.5 (p = 0.012). There was no complication. Conclusion: MR-HIFU using volumetric ablation is a safe and effective therapeutic modality in relieving uterine fibroid symptoms, which is more time-efficient and needs less manipulation as compared with the conventional method.

IS-45  The Interaction with MicroRNA-200c and BRD-7 in Endometrial Endometrioid Carcinoma

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Objectives: Recent reports suggest that targeting the unique miRNA expression in several cancers has yielded promising results suggestive of a possible role in the development of new cancer therapeutic tools. MicroRNA-200c has been known to be the maintenance of epithelial identity and recently decreased expression level of miR-200c is associated with aggressive phenotype of cancer including type 2 endometrial carcinoma. In this study, we evaluated the role and mechanism of miR-200c for cell proliferation and drug sensitivity in endometrial endometrioid carcinoma (EEC). Methods: The expression of miRNA-200c in EECs and normal endometrial tissues was detected by quantitative RT-PCR. The transfection with anti-miRNA (anti-miR) and pre-miR was performed to evaluate the role of miRNA-200c for cell proliferation and chemosensitivity in EEC cells, HEC-1A and Ishikawa. To identify the target genes for miR-200c, we performed messenger RNA microarray after pre-miR-200c transfection in HEC-1A cells. Moreover, we tried to evaluate the downstream pathway of BRD7 and miR-200c for cell proliferation and invasion using proliferation assay and Western blot. Results: We found that miR-200c was significantly increased in EECs compared with normal endometrial tissues. When we treated anti-miR-200c or pre-miR-200c in HEC-1A cells or Ishikawa, the growth of cells was significantly inhibited. We also identified that miR-200c inhibits the expression of BRD7, which has been regarded as tumor suppressor candidate in several cancers. BRD7 siRNA increased cell proliferation in these cells. We found that anti-miR-200c could reduce cell proliferation and potentiate suppression of cell growth with cisplatin through inhibiting BRD7. Conclusion: These results indicate that the interaction with miR-200c and BRD7 could play important roles in controlling cancer growth and enhance cytotoxic effect with cisplatin in EECs and suggested as novel therapeutic target treating these carcinomas.