Is There a Role for Proton Therapy after High-intensity Focused Ultrasound and Cryosurgery Failures in Prostate Cancer?

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Purpose/Objective(s)

There are little data on optimal management of patients with prostate cancer progression after high-intensity focused ultrasound (HIFU) or cryosurgery (CRYO), two clinical situations likely to increase with the growing use of these treatment methods. To date, there are no published reports of outcomes with proton therapy (PT) for prostate cancer progression after HIFU or CRYO, which may offer a less toxic treatment option for these patients than prostatectomy or other forms of radiation therapy. This study reports early disease control and toxicity in a small cohort of patients treated with PT for disease progression after HIFU or CRYO.

Materials/Methods

One post-HIFU and 5 post-CRYO patients were treated with PT for disease progression on UFPTI OTP (UFJ-2006-153). An IRB-approved (UFJ-2009-111) retrospective review of medical records was used to study disease control and toxicity outcomes. Follow-up ranged from 12 months to 30 months. PSA response was used as a surrogate for treatment efficacy. Gastrointestinal (GI) and genitourinary (GU) toxicities were assessed through self-reported International Prostate Symptom Scores (IPSS) and through provider assessment using the CTCAE v3.0 scoring system.

Results

At last follow-up, all patients had experienced a prostate-specific antigen (PSA) response to PT. Pre- and post treatment PSAs for the HIFU patient were 6.1 ng/mL and 0.4 ng/mL (at 12 months). For the CRYO group, mean pre- and post treatment PSAs were 10.1 ng/mL (range, 5 to 15 ng/mL) and 0.2 ng/mL (range, 0.1 to 0.3 ng/mL) at 15 to 30 months. At 1 year, the HIFU patient reported an improvement in IPSS from pretreatment (Δ -2). Similarly, among the CRYO patients, only 1 patient reported a worsening IPSS (Δ +2) with a mean IPSS change for the 5 CRYO patients of -1 (range, -4 to +2). No Grade 3 GU or GI toxicity was observed.

Conclusions

Proton therapy appears to be an effective and well-tolerated treatment option for patients whose prostate cancer progresses after CRYO or HIFU. A larger study with long-term follow-up is needed to confirm these findings.