

## Transrectal HIFU for the Treatment of Localized Prostate Cancer: 13-Year Experience

**Introduction and Objective:** We report on 13 years' experience of high-intensity focused ultrasound (HIFU) in the treatment of localized prostate cancer.

**Materials and Methods:** Eight hundred and eighty-four men with stage T1c-T3N0M0 prostate cancer treated with Sonablate® (SB) devices between 1999 and 2010 were included. All patients were followed for more than 2 years. The patients were divided into three groups: in the first group, 418 patients were treated with SB200 and 500 from 1999 to 2006; in the second group, 262 patients were treated with SB 500 ver. 4 from 2005 to 2009; in the third group, 204 patients were treated with SB 500 TCM from 2007 up to present. Biochemical failure was defined according to the Phoenix definition (PSA nadir + 2 ng/ml).

**Results:** The mean age, PSA, Gleason score, operation time, and follow-up period in each group were 68, 66 and 67 years, 11.2, 9.7 and 9.2 ng/ml, 6.2, 6.6 and 6.7, 167, 101 and 106 min, and 56, 48 and 36 months, respectively. The biochemical disease-free rate (bDFR) in each group at 5 years was, respectively, 54%, 62% and 83%, and was 50% at 10 years in the first group ( $p < 0.0001$ ). The bDFR in patients in the low-, intermediate-, and high-risk groups in all patients at 10 years were 71% and 58%, 44%, respectively ( $p < 0.0001$ ). The bDFR in patients in the low-, intermediate-, and high-risk groups in the SB500 TCM group at 5 years were 97%, 83%, and 73% ( $p = 0.0040$ ). The negative prostate biopsy rates in 3 groups were 82%, 92% and 88%, respectively. As post HIFU complications, urethral stricture, acute epididymitis and urinary incontinence were noted in 17.4%, 5.6% and 1.9%, respectively. Rectourethral fistula was occurred in 0.5% in the first HIFU and 3.2% in repeat HIFU cases, Postoperative erectile dysfunction was noted in 27% of patients at 2 years after HIFU.

**Conclusions:** HIFU therapy appears to be minimally invasive, efficacious, and safe for patients with localized prostate cancer. Technological advances as well as cultural and economic vectors have caused a shift from to minimally invasive techniques.