Abstract

Comparative analysis of prostate-specific antigen free survival outcomes for patients with low, intermediate and high risk prostate cancer treatment by radical therapy. Results from the Prostate Cancer Results Study Group

Peter Grimm1,*, Ignace Billiet2, David Bostwick3, Adam P. Dicker4, Steven Frank5, Jos Immerzeel6, Mira Keyes7, Patrick Kupelian8, W. Robert Lee9, Stefan Machtens10, Jyoti Mayadev11, Brian J. Moran12, Gregory Merrick13, Jeremy Millar14, Mack Roach15, Richard Stock16, Katsuto Shinohara15, Mark Scholz17, Ed Weber18, Anthony Zietman19, Michael Zelefsky20, Jason Wong21, Stacy Wentworth22, Robyn Vera23, Stephen Langley24Article first published online: 12 JAN 2012

Issue

BJU International

Special Issue: LDR Brachytherapy: Latest Advances in Prostate Cancer Treatment

Volume 109, Issue Supplement s1, pages 22–29, February 2012

Author Information

1Prostate Cancer Center of Seattle, WA, USA

2Urology Centre Kortrijk, Belgium

3Bostwick Laboratories, Glen Allen, VA, USA

4Jefferson Medical College of Thomas Jefferson University, Philadelphia, PA, USA

5MD Andersen Center, Houston, TX, USA

6The Prostate Clinic, Utrecht, The Netherlands

7BC Cancer Agency Vancouver Center, Vancouver, BC, Canada

8UCLA, Los Angeles, CA, USA

9Duke University Medical Center, Durham, NC, USA

10Department of Urology, Marien-Krankenhaus, Bergisch Gladbach, Germany

11University of California, Davis, CA, USA

12Chicago Prostate Center, Westmont, IL, USA

13Urologic Research Institute, Wheeling Jesuit University, WV, USA

14Alfred Health and Monash Univeristy, Melbourne, Australia

15University of California, San Francisco, CA, USA

16Mt Sinai Medical Center, New York, USA

17Prostate Cancer Research Institute, Los Angeles, CA, USA

18Prostate Cancer Center of Seattle, WA, USA

19Harvard Medical School, Boston, MA, USA

20Memorial Sloan Kettering Cancer Center, New York, USA

21University of California, Irvine, CA, USA

22Piedmont Radiation Oncology, Greensboro, NC, USA

23Virginia Commonwealth University, Richmond, VA, USA

24Department of Urology, Royal Surrey County Hospital, Guildford, UK

Publication History

Issue published online: 12 JAN 2012

Article first published online: 12 JAN 2012

Abstract

What's known on the subject? and What does the study add?

Very few comparative studies to date evaluate the results of treatment options for prostate cancer using the most sensitive measurement tools. PSA has been identified as the most sensitive tool for measuring treatment effectiveness. To date, comprehensive unbiased reviews of all the current literature are limited for prostate cancer.

This is the first large scale comprehensive review of the literature comparing risk stratified patients by treatment option and with long-term follow-up. The results of the studies are weighted, respecting the impact of larger studies on overall results. The study identified a lack of uniformity in reporting results amongst institutions and centres.

A large number of studies have been conducted on the primary therapy of prostate cancer but very few randomized controlled trials have been conducted. The comparison of outcomes from individual studies involving surgery (radical prostatectomy or robotic radical prostatectomy), external beam radiation (EBRT) (conformal, intensity modulated radiotherapy, protons), brachytherapy, cryotherapy or high intensity focused ultrasound remains problematic due to the non-uniformity of reporting results and the use of varied disease outcome endpoints. Technical advances in these treatments have also made long-term comparisons difficult.

The Prostate Cancer Results Study Group was formed to evaluate the comparative effectiveness of prostate cancer treatments. This international group conducted a comprehensive literature review to identify all studies involving treatment of localized prostate cancer published during 2000–2010.

Over 18 000 papers were identified and a further selection was made based on the following key criteria: minimum/median follow-up of 5 years; stratification into low-, intermediate- and high-risk groups; clinical and pathological staging; accepted standard definitions for prostate-specific antigen failure; minimum patient number of 100 in each risk group (50 for high-risk group)

A statistical analysis (standard deviational ellipse) of the study outcomes suggested that, in terms of biochemical-free progression, brachytherapy provides superior outcome in patients with low-risk

disease. For intermediate-risk disease, the combination of EBRT and brachytherapy appears equivalent to brachytherapy alone. For high-risk patients, combination therapies involving EBRT and brachytherapy plus or minus androgen deprivation therapy appear superior to more localized treatments such as seed implant alone, surgery alone or EBRT. It is anticipated that the study will assist physicians and patients in selecting treatment for men with newly diagnosed prostate cancer.