Patients' Satisfaction with Different Modalities of Prostate Cancer Therapy – A Retrospective Survey among 634 Patients

WOLFGANG WAGNER[1], TOBIAS BÖLLING[1], CHRISTOPH HAMBRUEGGE[2], JOACHIM HARTLAPP[1] and MANFRED G. KRUKEMEYER[1]

[1]*Paracelsus Clinic, Osnabrück, Germany;*
[2]*Krebsmagazin, Maconet GmbH, Extertal, Germany*

Abstract. *Aim: To assess the overall impact of the most common contemporary prostate cancer therapies (radical prostatectomy, percutaneous irradiation, brachytherapy, hormonal therapy) with regard to physical and psychological well-being, as well as to general patient satisfaction. Patients and Methods: In October 2006, a questionnaire focused on patients' opinions and satisfaction regarding their previous prostate cancer therapies was published in a patient cancer journal (Krebsmagazin). Results were collected until March, 2007 and analyzed using Wilcoxon and Student's t-tests. Results: Answers were obtained from 634 patients (radical prostatectomy: 61%; percutaneous irradiation: 17%; brachytherapy: 2%; hormonal therapy: 15%; other/combined: 5%). Concerning late side effects and convenience of treatment, 96% of all patients who had undergone percutaneous irradiation were very satisfied with their choice and would choose the same therapy again (brachytherapy: 93%; hormonal therapy: 84%; radical prostatectomy: 79%). Erectile dysfunction with inability to perform sexual intercourse was reported by 32% of all patients who underwent percutaneous irradiation (brachytherapy: 21%; hormonal therapy: 63%; radical prostatectomy: 52%). No sexual problems at all were reported by 22% of patients who underwent percutaneous irradiation (brachytherapy: 21%; hormonal therapy: 13%; radical prostatectomy: 4%). With regard to psychological and physical deficits (fear; depression; urinary, bowel, erectile dysfunction; hormonal disorders), percutaneous irradiation was superior to the other treatment options (no deficits: percutaneous irradiation; 49%; brachytherapy: 36%; hormonal therapy: 17%; radical prostatectomy: 15%). Conclusion: Radiotherapy showed superior results regarding patient convenience and satisfaction in comparison to hormonal therapy and surgery in the treatment of patients with prostate cancer.*

Correspondence to: Professor Wolfgang Wagner, Center for Tumour Diagnostics and Therapy, Osnabrück, Am Natruper Holz 69, 49076 Osnabrück, Germany. Tel: +49 5419664800, Fax: +49 5419664804, e-mail: prof.wolfgang.wagner@pk-mx.de

Key Words: Prostate cancer, patients' satisfaction, radiation, surgery, hormonal therapy.

After lung cancer, prostate cancer is the most frequent disease affecting males in the European Union, as well as in the United States (1-3). In Germany alone, 48,650 incidences regarding prostate cancer are diagnosed per year (Society of Epidemiological Cancer Register in Germany).

In addition to conservative therapy strategies such as the controlled surveillance of the tumor (watchful waiting and active surveillance), the patient can choose between different single or combined therapeutic approaches (4). The spectrum of treatment possibilities includes surgical removal of the prostate gland (radical prostatectomy), external radiotherapy (percutaneous radiation, 3D conformal radiation, intensity modulated radiotherapy), and internal radiotherapy (brachytherapy), as well as hormone ablative methods (androgen deprivation therapy) (5-8). Due to the small number of randomized comparative clinical studies with a long-term follow-up, there is still no clear superiority of any single therapeutic method (4, 9-11). Non-randomized studies do not show any significant differences regarding the long-term survival (12-16). With this background, and considering the various side-effects of the different therapies, in particular, the treatment method's effects on the quality of life (QoL) are, apart from being qualitative end-points, important factors when choosing a therapy (17). However, regarding qualitative factors, there is no clearly established proof of superiority of a particular treatment (18, 19). Consequently, the optimal treatment method of this disease remains controversial. This fact, combined with numerous different therapeutic possibilities, complicates the optimal therapy choice (10, 11).

As a consequence, the guideline in the European region, as well as in the American region, recommends that the physician has a consulting role. The final decision of the therapy is at the patient's discretion (EAU guideline, AUA guideline, S3 guideline) (2, 4, 20). Thus the aim of this retrospective patient survey across Germany aimed to record

healthcare-related QoL status regarding physical and psychological effects, and to determine the satisfaction of long-term survivors with the chosen cancer therapy.

Materials and Methods

In October 2006, we published a QoL questionnaire in a patient cancer journal (Krebsmagazin), as well as on its corresponding website (www.krebsmagazin.de).

The questionnaire consisted of 34 questions covering treatment parameters (surgery, hormonal therapy, percutaneous irradiation, brachytherapy), psychological and physical well-being as well as overall satisfaction with the chosen therapy. In addition, it was surveyed if patients felt adequately informed regarding comprehensibility, objectiveness, empathy, profoundness of information and quality of advice prior to choosing a treatment. A detailed overview of all the questions is given in Table I.

Responses to the questionnaire were collected, populating a database and then analyzed using Wilcoxon and Student's *t*-tests with SPSS software. (IBM® SPSS® Chicago, IL, USA).

Results

A total of 634 filled-in and evaluable questionnaires were sent by March 2007, whereas the patients who answered the questionnaires originated from the entire federal territory. Overall 86% of the patients interviewed were between 60 and 80 yo, and 48% were between 61 and 70 yo. The majority (61%) of the patients had undergone radical perineal prostatectomy; 17% had undergone percutaneous radiotherapy, 15% had been treated with anti-hormonal therapy and 2% by means of brachytherapy. The remaining 5% of the patients had been treated otherwise (or undergone combined therapies). The mean follow-up was 37 months (1-183 months).

Figure 1 shows an overview of chronic late effects divided according to different therapy groops. Similarly, Figure 2 shows an overview of psychological effects depending on the therapy which was carried out.

With regard to physical and psychological deficits (fear; depression; urinary, bowel, erectile dysfunction; hormonal disorders), percutaneous irradiation gave superior results in comparison to the other treatment options: 49% of the patients stated they had no deficits after radiotherapy (36% after brachytherapy, 17% after hormonal therapy, 15% after surgery). Regarding late side-effects and convenience of treatment (Figure 3), 96% of all patients who had undergone percutaneous irradiation were satisfied or very satisfied with their choice and would choose the same therapy again. Corresponding numbers were 93% for brachytherapy, 84% for hormonal therapy and 79% for surgery. There was no difference between 3D conformal irradiation and intensity-modulated radiation therapy (IMRT).

Of all patients who underwent surgery, 43% complained about moderate to strong incontinence, whereas this concerned only 12% of the patients irradiated. After prostate seed therapy only 7% of all patients suffered from a higher degree of incontinence; IMRT led to a moderate degree of incontinence in 8% of the patients treated. A total of 22% of the patients irradiated (percutaneous irradiation) and 21% of the patients having brachytherapy had no deficits during sexual intercourse. After IMRT, 18% were able to have sexual intercourse. The lowest value was observed in patients who underwent surgery, with only 4% stating to have no deficits in sexual intercourse.

The described differences in the comparison of percutaneous irradiation with different kinds of other treatment modalities showed statical significance for patient satisfaction, incontinence, ability for sexual intercourse and general ailments. A detailed overview regarding the *p*-values for the different comparisons is given in Table II.

Regarding the quality of advice prior to the therapy, 70% of the patients were satisfied or very satisfied, but 27% were dissatisfied (Figure 4). A total of 39 % claimed not to have been advised properly, 26% claimed the advising specialist was not objective, 11% were dissatisfied with the physician's empathy and 24% stated to have problems with their physician's comprehensibility. On a scale ranging from 1 (very good) to 10 (inadequate), the consultation was judged with 2.6 average, meaning it generally satisfied the requirements. More than three-quarters of all patients were satisfied with their final choice of therapy, whereas 16% were dissatisfied.

Regarding the question how the affected persons gathered information on their disease, self-help groups were mentioned most frequently, followed by professional journals for patients (n=246) and the Internet. Concerning self-help groups, 72% of the patients stated they had contacted a self-help group at least once, but 74% of them had done so only after the therapy. Finally, 93% of the patients contacting a self-help group mentioned they had gained positive experience there.

When asked the question, "To whom do you talk frankly about your disease?" most of the patients stated that they talk about such things to their treating physician, and next to their partner.

Discussion

The results of the present survey show an impressively high degree of satisfaction with the choice of the therapy in patients irradiated for prostate carcinoma. Other parameters, such as erectile dysfunction and incontinence, gave significantly better results after radiotherapy in contrast to surgery or hormonal therapy. These results correspond extensively to other analyses.

Cross-sectional analyses of several studies showed that more patients tended to have urinary deficits after radical prostatectomy (26-32). Almost half of the patients having surgery in the present study suffered from incontinence of different forms.

Table I. *Detailed overview of all questions of the survey.*

General questions:
- Pre-existing conditions
- Age
- Beginning of the therapy
- Prostate Specific Antigen (PSA) - value at the time of diagnosis
- History: first signs or symptoms
Diagnostics:
- PSA value of the prostate
- Further diagnostic measures
Clinical stages:
- Lymph node status
- Gleason score
- Recommendations
Therapy:
- Which therapy was decided?
- Patient's influence on the therapy decision
- Which therapy was initiated?
- When did the therapy start?
- Were other therapy options mentioned?
- Supplementary therapies
- Information on side-effects and risks
- Which physician made the diagnosis?
- Satisfaction of the therapy regarding side-effects and risks
Evaluation of the medical discussion:
(quality of advice, proper advice, empathy, objectivity, perceivability)
Rehabilitation:
- Did a rehabilitation follow after the therapy?
- If no, why not?
- Location of the rehabilitation
- Satisfaction with the rehabilitation
Other questions:
- Therapeutic, negative side effects
- Communication with the social surroundings about restrains
- Obtained information sources
- Contact with self-help groups

Table II. *Statistical analysis (Wilcoxon and Student's t-test) of therapy comparisons.*

	p-Value			
	Patient satisfaction	Incontinence	Sexual intercourse	Adverse effects
PI *vs*. BT	0.003	0.725	0.359	0.250
PI *vs*. HT	<0.05	0.862	0.05	0.013
PI *vs*. RP	<0.05	<0.05	0.008	0.022
PI *vs*. RP + PI	<0.05	0.005	0.002	0.010
PI *vs*. PI + HT	0.054	0.342	0.04	0.040
PI *vs*. RP + PI + HT	0.037	0.045	0.04	0.040

In addition to incontinence, erectile dysfunction was found to be one of surgery's main side-effects in the present study. This is concordant with previous studies showing that more men who underwent surgery tended to have sexual deficits than men irradiated (19, 22-27). Since the probability of erectile dysfunction correlates with age and baseline impairment of sexual function, the results of long-term erectile dysfunction range between 19% and 27% in the literature (29-30). Our data do not agree with these of a previous study, where erectile dysfunction rates with of up to 50% were reported as being among the most frequent side-effects of radiotherapy (31).

In the present analysis, the patients evaluated the quality of advice they received as only moderate and as insufficient to make a decision independently. It has been noted that 30% of men explicitly mentioned their physician's recommendation as not being important to their decision (32). In evaluating the influence of information sources, 51% of men indicated that information from their physician was most important in reaching a decision, noting that 75% of these men obtained information from two or three physicians. Considerable attention was given to shared decision-making between the patient and their physicians, in the process of selecting a treatment choice. Early studies had suggested that men take a passive role in the process, relying on the physician to select treatment. In one study the author had suggested that relying on the physician, may in fact be an 'active' decision on behalf of the patient (33). Some men reported feeling that the treatment decision had been a technical matter requiring the expertise and experience of the physician. Recent studies found evidence that patients are becoming more active in the decision-making process and are relying less on the recommendations made by physicians (33).

There are several limitations of this study that one should mention. Firstly, the questionnaire was published in a patients' journal and responses were collected without any selection criteria. Therefore, these questionnaires cannot be assumed to be reliably representative. Data regarding treatment parameters were obtained from the questionnaires only, relying on patients' answers. The time course of side-effects and satisfaction were not considered and there are no data regarding the patients' situation prior to the treatment. However, this large survey gives additional information regarding the patients' thoughts and feelings after treatment for prostate cancer.

Conclusion

The present retrospective survey showed that regarding patient satisfaction, in particular, not only the effectiveness of therapy but also its psychological and physical side-effects play an important role and present therapeutical differences. The various treatment possibilities differ considerably in their side-effects. We therefore recommend that future studies particularly consider these complications as a key factor in choosing treatment. The urologist, in particular, should appreciate his advisory role in order to guarantee a therapy as optimal as possible together with the patient and the family members on the basis of shared clinical decision-making.

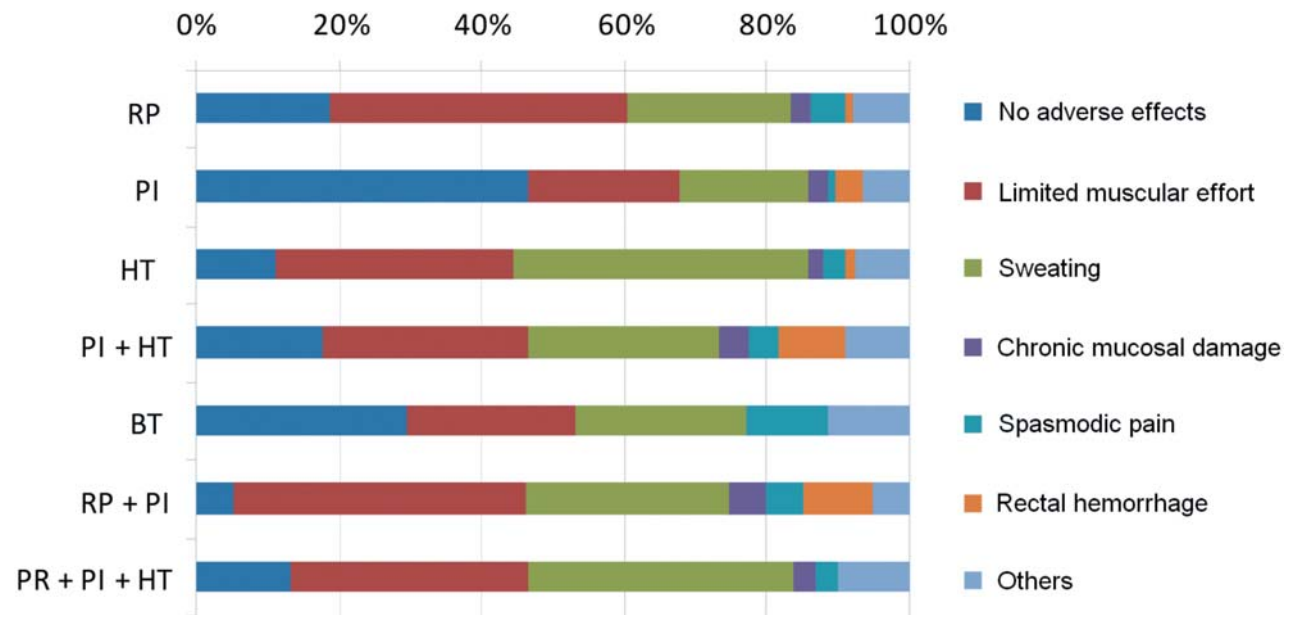

Figure 1. *Therapy and physical adverse effects. RP, Radical prostatectomy; PI, percutaneous irradiation; HT, hormonal therapy; BT, brachytherapy.*

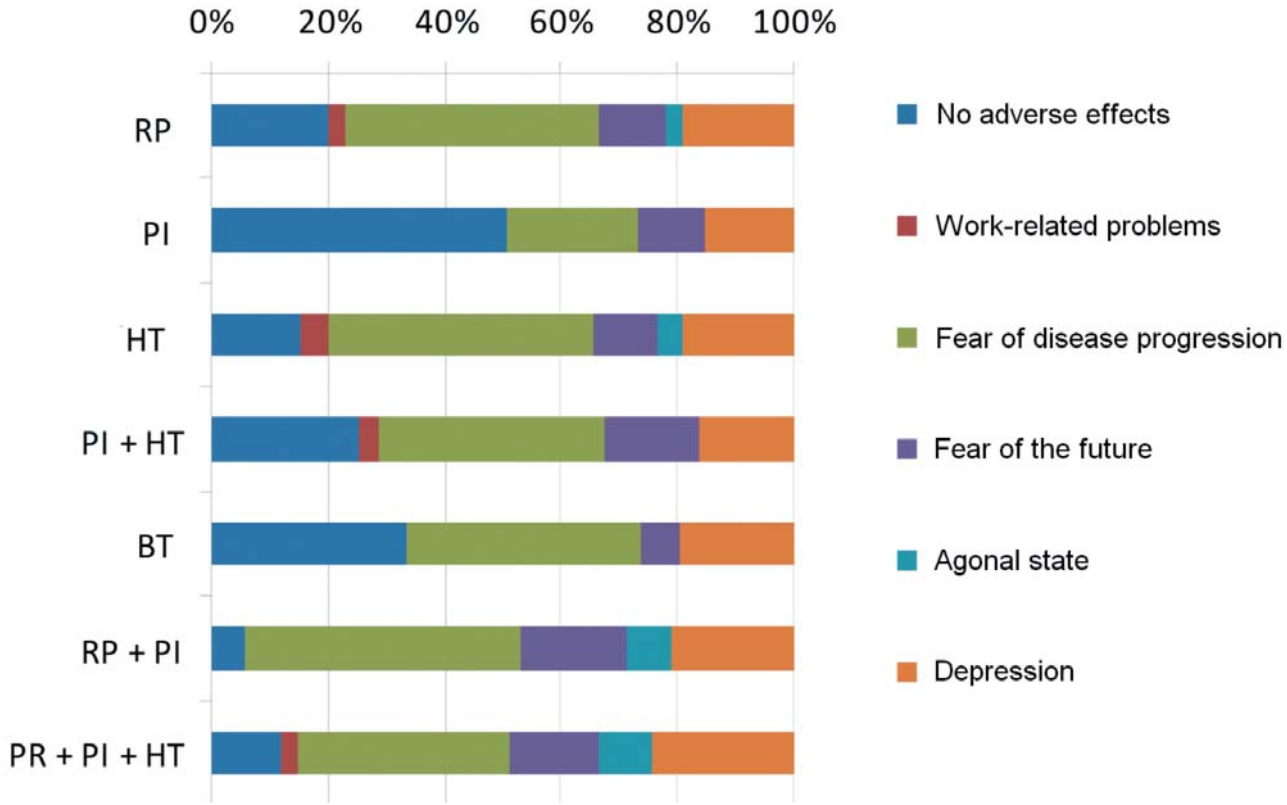

Figure 2. *Therapy and psychological adverse effects. RP, Radical prostatectomy; PI, percutaneous irradiation; HT, hormonal therapy; BT, brachytherapy.*

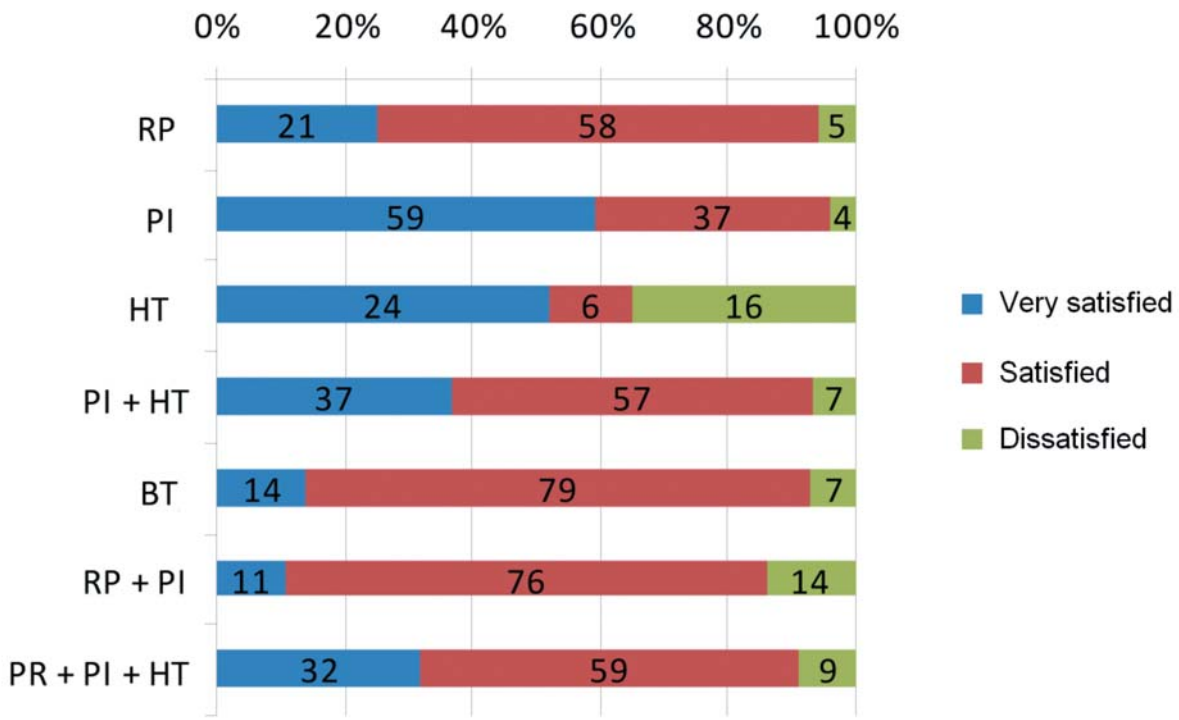

Figure 3. *Patients' satisfaction regarding adverse effects and risks of therapy. RP, Radical prostatectomy; PI, percutaneous irradiation; HT, hormonal therapy; BT, brachytherapy.*

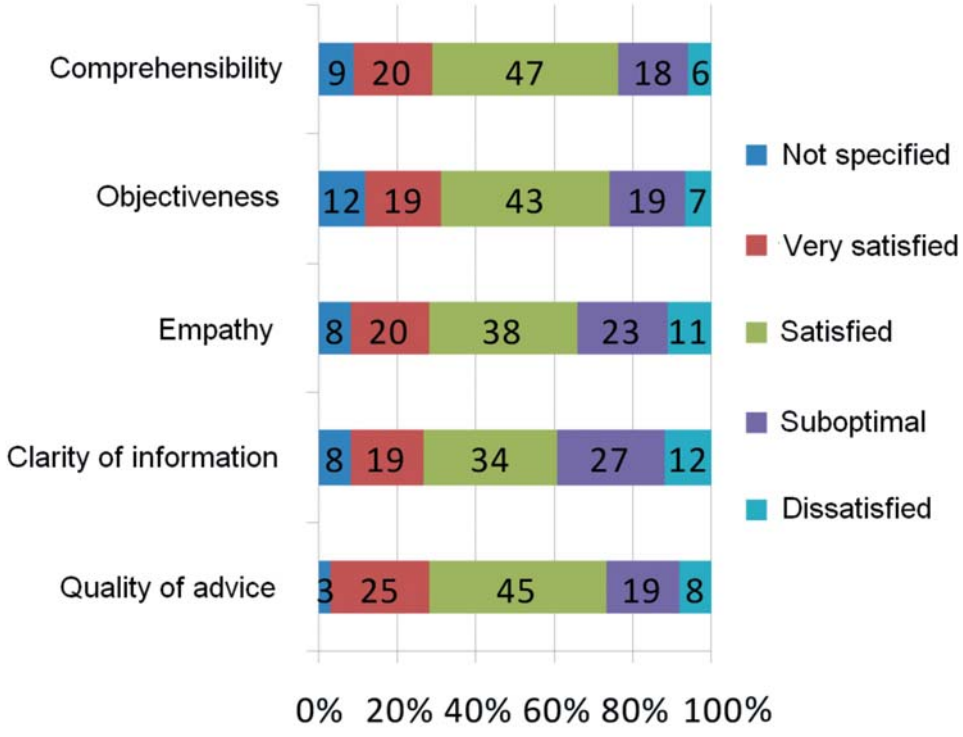

Figure 4. *Satisfaction with the quality of advice regarding therapy choices. RP, Radical prostatectomy; PI, percutaneous irradiation; HT, hormonal therapy; BT, brachytherapy.*

References

1 Borghede G, Karlsson J and Sullivan M: Quality of life in patients with prostatic cancer: results from a Swedish population study. J Urol *158*: 1477-1485, 1997.

2 Curran D, Fossa S, Aaronson N, Kiebert G, Keuppens F and Hall R: Baseline quality of life of patients with advanced prostate cancer. European Organization for Research and Treatment of Cancer (EORTC), Genito-Urinary Tract Cancer Cooperative Group (GUT-CCG) Eur J Cancer *33*: 1809-1814, 1997.

3 Jemal A, Siegel R, Xu J and Ward E: Cancer statistics, 2010. CA Cancer J Clin *60*: 277-300, 2010.

4 Wenz F, Martin T, Böhmer D, Martens S, Sedlmayer F, Wirth M, Miller K, Heidenreich A, Schrader M, Hinkelbein W and Wiegel T: The German S3 guideline prostate cancer: aspects for the radiation oncologist. Strahlenther Onkol *186*: 531-534, 2010.

5 Dolezel M, Odrazka K, Vaculikova M, Vanasek J, Sefrova J, Paluska P, Zouhar M, Jansa J, Macingova Z, Jarosova L, Brodak M, Moravek P and Hartmann I: Dose escalation in prostate radiotherapy up to 82 Gy using simultaneous integrated boost: direct comparison of acute and late toxicity with 3D-CRT 74 Gy and IMRT 78 Gy. Strahlenther Onkol *186*: 197-202, 2010.

6 Fröhlich G, Agoston P, Lövey J, Somogyi A, Fodor J, Polgár C and Major T: Dosimetric evaluation of high-dose-rate interstitial brachytherapy boost treatments for localized prostate cancer. Strahlenther Onkol *186*: 388-395, 2010.

7 Ghadjar P, Gwerder N, Manser P, Vock J, Madlung A, Mini R and Aebersold DM: High-dose (80 Gy) intensity-modulated radiation therapy with daily image-guidance as primary treatment for localized prostate cancer. Strahlenther Onkol *186*: 687-692, 2010.

8 Patel AB, Waterman FM and Dicker AP: A detailed examination of the difference between planned and treated margins in 125I permanent prostate brachytherapy. Brachytherapy *2*: 223-228, 2003.

9 Gillitzer R, Hampel C, Thomas C, Schmidt F, Melchior SW, Pahernik S, Schmidberger H and Thüroff JW: Therapy choices of german urologists and radio-oncologists if personally diagnosed with localized prostate cancer. Urologe A *48*: 399-407, 2009.

10 Yan Y, Carvalhal GF, Catalona WJ and Young JD: Primary treatment choices for men with clinically localized prostate carcinoma detected by screening. Cancer *88*: 1122-1130, 2000.

11 Zeliadt SB, Ramsey SD, Penson DF, Hall IJ, Ekwueme DU, Stroud L and Lee JW: Why do men choose one treatment over another?: a review of patient decision making for localized prostate cancer. Cancer *106*: 1865-1874, 2006.

12 Bonney WW, Fallon B, Gerber WL, Hawtrey CE, Loening SA, Narayana AS, Platz CE, Rose E, Sall JC, Schmidt JD and Culp DA: Cryosurgery in prostatic cancer: survival. Urology *19*: 37-42, 1982.

13 Chodak GW: The role of watchful waiting in the management of localized prostate cancer. J Urol *152*: 1766-178, 1994.

14 Gerber GS, Thisted RA, Scardino PT, Frohmuller HG, Schroeder FH, Paulson DF, Middleton AW Jr, Rukstalis DB, Smith JA Jr., Schellhammer PF, Ohori M and Chodak GW: Results of radical prostatectomy in men with clinically localized prostate cancer. JAMA *276*: 615-619, 1996.

15 Hanks GE: Radiotherapy or surgery for prostate cancer? Ten and fifteen-year results of external beam therapy. Acta Oncol *30*: 231-237, 1991.

16 Lu-Yao GL and Yao SL: Population-based study of long-term survival in patients with clinically localised prostate cancer. Lancet *349*: 906-910, 1997.

17 Guckenberger M, Ok S, Polat B, Sweeney RA and Flentje M: Toxicity after intensity-modulated, image-guided radiotherapy for prostate cancer. Strahlenther Onkol *186*: 535-543, 2010.

18 Eton DT and Lepore SJ: Prostate cancer and health-related quality of life: a review of the literature. Psychooncology *11*: 307-326, 2002.

19 Ferrer M, Suárez JF, Guedea F, Fernández P, Macías V, Mariño A, Hervas A, Herruzo I, Ortiz MJ, Villavicencio H, Craven-Bratle J, Garin O and Aguiló F: Health-related quality of life 2 years after treatment with radical prostatectomy, prostate brachytherapy, or external beam radiotherapy in patients with clinically localized prostate cancer. Int J Radiat Oncol Biol Phys *72*: 421-432, Oct. 2008.

20 American Urological Association's (AUA) Prostate Cancer Clinical Guidelines.

21 Heidenreich A, Aus G, Bolla M, Joniau S, Matveev VB, Schmid HP and Zattoni F: European Association of Urology. EAU guidelines on prostate cancer. Eur Urol *53*: 68-80, 2008.

22 Huang ST and Hsieh ML: Evaluation of resistance index in patients with prostate cancer. Anticancer Res *28*: 1985-1988, 2008.

23 Lim AJ, Brandon AH, Fiedler J, Brickman AL, Boyer CI, Raub WA Jr. and Soloway MS: Quality of life: radical prostatectomy versus radiation therapy for prostate cancer. J Urol *154*: 1420-1425, 1995.

24 Litwin MS, Hays RD, Fink A, Ganz PA, Leake B, Leach GE and Brook RH: Quality-of-life outcomes in men treated for localized prostate cancer. JAMA *273*: 129-135, 1995.

25 Penson DF and Litwin MS: Quality of life after treatment for prostate cancer. Curr Urol Rep *4*: 185-195, 2003.

26 Shrader-Bogen CL, Kjellberg JL, McPherson CP and Murray CL: Quality of life and treatment outcomes: prostate carcinoma patients' perspectives after prostatectomy or radiation therapy. Cancer *79*: 1977-1986, 1997.

27 Wei JT and Uzzo RG: Shared decision-making strategies for early prostate cancer. Semin Urol Oncol *20*: 74-78, 2002.

28 Hu JC, Gu X, Lipsitz SR, Barry MJ, D'Amico AV, Weinberg AC and Keating NL: Comparative effectiveness of minimally invasive *vs*. open radical prostatectomy. JAMA *302*: 1557-1564, 2009.

29 Wolf AM, Wender RC, Etzioni RB, Thompson IM, D'Amico AV, Volk RJ, Brooks DD, Dash C, Guessous I, Andrews K, DeSantis C and Smith RA: American Cancer Society Prostate Cancer Advisory Committee. American Cancer Society guideline for the early detection of prostate cancer: update 2010. CA Cancer J Clin *60*: 70-98, 2010.

30 Zelefsky MJ, Levin EJ, Hunt M, Yamada Y, Shippy AM, Jackson A and Amols HI: Incidence of late rectal and urinary toxicities after three-dimensional conformal radiotherapy and intensity-modulated radiotherapy for localized prostate cancer. Int J Radiat Oncol Biol Phys *70*: 1124-1129, 2008.

31 Holmboe ES and Concato J: Treatment decisions for localized prostate cancer: asking men what's important. J Gen Intern Med *15*: 694-701, 2000.

32 O'Rourke ME: Ketoconazole in the treatment of prostate cancer. Clin J Oncol Nurs *7*: 235-236, 2003.

33 Helgason AR, Adolfsson J, Dickman P, Arver S, Fredrikson M and Steineck G: Factors associated with waning sexual function among elderly men and prostate cancer patients. J Urol *158*: 155-159, 1997.

Received August 16, 2011
Revised October 21, 2011
Accepted October 21, 2011