

# Prostate Cancer Treatment Comparison

# Treatment Comparative Data

## Outcome Comparison: Surgery vs. Radiotherapy

Outcome	Radical Prostatectomy*	Radiation**
Survival duration compared to conservative disease management <sup>1</sup>	8.6 years	4.6 years
15-year prostate cancer survival rate <sup>2</sup>	92%	87%
Survival rate for high-grade cancer patients <sup>3</sup>	45% increase in overall survival rate vs. radiotherapy	-
Risk of cancer-specific death for high-grade cancer patients <sup>4</sup>	49% less risk vs. radiotherapy	-
Cancer recurrence <sup>5</sup>	Easy to detect	Difficult to detect
Risk of rectal cancer (Within 10 year follow-up) <sup>6</sup>	5.1 out of 1000	10.0 out of 1000
Risk of bladder cancer <sup>7</sup>	0.8% developed bladder cancer	1.3% developed bladder cancer
Bowel function impairment <sup>8</sup>		Significantly greater vs. surgery
Disease-specific long-term quality of life <sup>9</sup>	Stable	Unstable
Painful urination (at 18 month follow-up) <sup>10</sup>	1% of patients	30% of patients
Long-term erectile dysfunction <sup>11</sup>	Lower risk	Higher risk

# References

- [1] Tewari A, Raman JD, Chang P, Rao S, Divine G, Menon M. Long-term survival probability in men with clinically localized prostate cancer treated either conservatively or with definitive treatment (radiotherapy or radical prostatectomy). *Urology*. 2006 Dec;68(6):1268-74.
- [2] Tewari A, Raman JD, Chang P, Rao S, Divine G, Menon M. Long-term survival probability in men with clinically localized prostate cancer treated either conservatively or with definitive treatment (radiotherapy or radical prostatectomy). *Urology*. 2006 Dec;68(6):1268-74.
- [3] Tewari A, Divine G, Chang P, Shemtov MM, Milowsky M, Nanus D, Menon M. Long-term survival in men with high grade prostate cancer: a comparison between conservative treatment, radiation therapy and radical prostatectomy--a propensity scoring approach. *J Urol*. 2007 Mar;177(3):911-5. Erratum in: *J Urol*. 2007 May;177(5):1958.
- [4] Tewari A, Divine G, Chang P, Shemtov MM, Milowsky M, Nanus D, Menon M. Long-term survival in men with high grade prostate cancer: a comparison between conservative treatment, radiation therapy and radical prostatectomy--a propensity scoring approach. *J Urol*. 2007 Mar;177(3):911-5. Erratum in: *J Urol*. 2007 May;177(5):1958.
- [5] Di Blasio, C. J., A. C. Rhee, et al. (2003). Predicting clinical end points: treatment nomograms in prostate cancer. *Semin Oncol* 30(5): 567-86.
- [6] Baxter NN, Tepper JE, Durham SB, Rothenberger DA, Virnig BA. Increased risk of rectal cancer after prostate radiation: a population-based study. *Gastroenterology*. 2005 Apr;128(4):819-24.
- [7] Boorjian S, Cowan JE, Konety BR, DuChane J, Tewari A, Carroll PR, Kane CJ; Cancer of the Prostate Strategic Urologic Research Endeavor Investigators. Bladder cancer incidence and risk factors in men with prostate cancer: results from Cancer of the Prostate Strategic Urologic Research Endeavor. *J Urol*. 2007 Mar;177(3):883-7; discussion 887-8.
- [8] Litwin MS, Sadetsky N, Pasta DJ, Lubeck DP. Bowel function and bother after treatment for early stage prostate cancer: a longitudinal quality of life analysis from CaPSURE. *J Urol*. 2004 Aug;172(2):515-9.
- [9] Miller, D. C., M. G. Sanda, et al. (2005). Long-term outcomes among localized prostate cancer survivors: health-related quality-of-life changes after radical prostatectomy, external radiation, and brachytherapy. *J Clin Oncol* 23(12): 2772-80.
- [10] Buron, C., B. Le Vu, et al. (2007). Brachytherapy versus prostatectomy in localized prostate cancer: Results of a French multicenter prospective medico-economic study. *Int J Radiat Oncol Biol Phys* 67(3): 812-22.
- [11] Di Blasio, C. J., A. C. Rhee, et al. (2003). Predicting clinical end points: treatment nomograms in prostate cancer. *Semin Oncol* 30(5): 567-86.

# Treatment Comparative Data

Prostatectomy Outcome Comparison:  
*da Vinci®* vs. Open vs. Conventional Laparoscopy

Outcome	dVP	Open	Lap
<b>Cancer control</b>			
T2 margin status	2.5% <sup>1</sup>	5.9% <sup>2</sup>	7.7% <sup>3</sup>
<b>Complications</b>			
Estimated blood loss (EBL)	109 ml <sup>4</sup>	1355 ml <sup>5</sup>	380 ml <sup>6</sup>
Length of stay (LOS)	1.2 days <sup>4</sup>	3 days <sup>5</sup>	2.5 days <sup>12</sup>
Major	1.7% <sup>4</sup>	6.7% <sup>5</sup>	3.7% <sup>6</sup>
Minor	3.7% <sup>4</sup>	12.6% <sup>5</sup>	14.6% <sup>6</sup>
<b>Urinary function</b>			
3 month	89% <sup>1</sup>	54% <sup>7</sup>	62% <sup>8</sup>
6 month	95% <sup>1</sup>	80% <sup>7</sup>	77% <sup>8</sup>
12 month	97% <sup>1</sup>	93% <sup>7</sup>	83% <sup>8</sup>
<b>Sexual function</b>			
12 month	86% <sup>9</sup>	71% <sup>10</sup>	76% <sup>11</sup>

# References

- [1] Patel, V. R., R. Thaly, and K. Shah. 2007. Robotic radical prostatectomy: outcomes of 500 cases. *BJU Int* 99:1109-12.
- [2] Scardino PT. Open Radical Retropubic Prostatectomy. Presented at the American Urological Association's *Carcinoma of the Prostate Course*, San Francisco, California, Sept. 30 - Oct. 1 2005
- [3] Touijer K, Kuroiwa K, Saranchuk JW, Hassen WA, Trabulsi EJ, Reuter VE, Guillonneau B. Quality improvement in laparoscopic radical prostatectomy for pT2 prostate cancer: impact of video documentation review on positive surgical margin. *J Urol.* 2005 Mar;173(3):765-8. p. 766 (Results)
- [4] Bhandari, A., McIntire, L., Kaul, S.A., Hemal, A.K., Peabody, J.O., and Menon, M. (2005). Perioperative complications of robotic radical prostatectomy after the learning curve. *J Urol* 174, 915-918.
- [5] Brown, J.A., Garlitz, C., Gomella, L.G., McGinnis, D.E., Diamond, S.M., and Strup, S.E. (2004). Perioperative morbidity of laparoscopic radical prostatectomy compared with open radical retropubic prostatectomy. *Urologic oncology* 22, 102-106.
- [6] Guillonneau, B., Rozet, F., Cathelineau, X., Lay, F., Barret, E., Doublet, J.D., Baumert, H., and Vallancien, G. (2002). Perioperative complications of laparoscopic radical prostatectomy: the Montsouris 3-year experience. *The Journal of urology* 167, 51-56.
- [7] Walsh PC. Patient-reported urinary continence and sexual function after anatomic radical prostatectomy. *J Urol.* 2000 Jul;164(1):242. p. 59 table 1.
- [8] Goeman, L., Salomon, L., La De Taille, A., Vordos, D., Hoznek, A., Yiou, R., and Abbou, C.C. (2006). Long-term functional and oncological results after retroperitoneal laparoscopic prostatectomy according to a prospective evaluation of 550 patients. *World J Urol* 24, 281-288.
- [9] Kaul, S., Bhandari, A., Hemal, A., Savera, A., Shrivastava, A., and Menon, M. (2005). Robotic radical prostatectomy with preservation of the prostatic fascia: a feasibility study. *Urology* 66, 1261-1265.
- [10] Parsons JK, Marschke P, Maples P, Walsh PC. Effect of methylprednisolone on return of sexual function after nerve-sparing radical retropubic prostatectomy. *Urology.* 2004 Nov;64(5):987-90.
- [11] Su, L.M., Link, R.E., Bhayani, S.B., Sullivan, W., and Pavlovich, C.P. (2004). Nerve-sparing laparoscopic radical prostatectomy: replicating the open surgical technique. *Urology* 64, 123
- [12] Dahl DM, L'esperance JO, Trainer AF, Jiang Z, Gallagher K, Litwin DE, Blute RD Jr. "Laparoscopic radical prostatectomy: initial 70 cases at a U.S. university medical center." *Urology.* 2002 Nov;60(5):859-63.