

Literatur

1. Deutschland SB. Sterbefälle nach den 10 häufigsten Todesursachen (männlich) für das Jahr 2002. Webseite: www.destatis.de/basis/d/gesu/gesutab20.php#Nicht 2004.
2. Sakr WA, Haas GP, Cassin BF, Pontes JE, Crissman JD. The frequency of carcinoma and intraepithelial neoplasia of the prostate in young male patients. *J Urol* 1993; 150:379-385.
3. Waterbor JW, Bueschen AJ. Prostate cancer screening (United States). *Cancer Causes Control* 1995; 6:267-274.
4. McNeal JE, Bostwick DG, Kindrachuk RA, Redwine EA, Freiha FS, Stamey TA. Patterns of progression in prostate cancer. *Lancet* 1986; 1:60-63.
5. Miller GJ, Cygan JM. Morphology of prostate cancer: the effects of multifocality on histological grade, tumor volume and capsule penetration. *J Urol* 1994; 152:1709-1713.
6. Gleason DF, Mellinger GT. Prediction of prognosis for prostatic adenocarcinoma by combined histological grading and clinical staging. *J Urol* 1974; 111:58-64.
7. Sgrignoli AR, Walsh PC, Steinberg GD, Steiner MS, Epstein JI. Prognostic factors in men with stage D1 prostate cancer: identification of patients less likely to have prolonged survival after radical prostatectomy. *J Urol* 1994; 152:1077-1081.
8. Berner A, Waere H, Nesland JM, Paus E, Danielsen HE, Fossa SD. DNA ploidy, serum prostate specific antigen, histological grade and immunohistochemistry as predictive parameters of lymph node metastases in T1-T3/M0 prostatic adenocarcinoma. *Br J Urol* 1995; 75:26-32.
9. Folkman J, Watson K, Ingber D, Hanahan D. Induction of angiogenesis during the transition from hyperplasia to neoplasia. *Nature* 1989; 339:58-61.
10. Siegal JA, Yu E, Brawer MK. Topography of neovascularity in human prostate carcinoma. *Cancer* 1995; 75:2545-2551.
11. Hammerer P, Lein M. Stellenwert der PSA-Bestimmung zur Früherkennung des Prostatakarzinoms. *Deutsches Ärzteblatt* 2004; 1001:1581-1582.

12. Dennis LK, Resnick MI. Analysis of recent trends in prostate cancer incidence and mortality. *Prostate* 2000; 42:247-252.
13. Catalona WJ, Smith DS, Ratliff TL, et al. Measurement of prostate-specific antigen in serum as a screening test for prostate cancer. *N Engl J Med* 1991; 324:1156-1161.
14. Urologie A-L. PSA-Bestimmung in der Prostatakarzinomdiagnostik. www.uni-duesseldorf.de/WWW/AWMF/II/II_list.htm 2003.
15. Antenor JA, Han M, Roehl KA, Nadler RB, Catalona WJ. Relationship between initial prostate specific antigen level and subsequent prostate cancer detection in a longitudinal screening study. *J Urol* 2004; 172:90-93.
16. Roehl KA, Antenor JA, Catalona WJ. Serial biopsy results in prostate cancer screening study. *J Urol* 2002; 167:2435-2439.
17. Mueller-Lisse UG, Mueller-Lisse UL, Haller S, et al. Likelihood of prostate cancer based on prostate-specific antigen density by MRI: retrospective analysis. *J Comput Assist Tomogr* 2002; 26:432-437.
18. Jung K, Elgeti U, Lein M, et al. Ratio of free or complexed prostate-specific antigen (PSA) to total PSA: which ratio improves differentiation between benign prostatic hyperplasia and prostate cancer? *Clin-Chem* 2000; 46:55-62.
19. Luboldt H-J, Rübber H. Früherkennung des Prostatakarzinoms. *Deutsches Ärzteblatt* 2004; 101:1443-1445.
20. Ellis WJ, Brawer MK. Repeat prostate needle biopsy: who needs it? *J Urol* 1995; 153:1496-1498.
21. Presti JC, Jr. Prostate biopsy: how many cores are enough? *Urol Oncol* 2003; 21:135-140.
22. Philip J, Ragavan N, Desouza J, Foster CS, Javle P. Effect of peripheral biopsies in maximising early prostate cancer detection in 8-, 10- or 12-core biopsy regimens. *BJU Int* 2004; 93:1218-1220.
23. Keetch DW, Catalona WJ, Smith DS. Serial prostatic biopsies in men with persistently elevated serum prostate specific antigen values. *J Urol* 1994; 151:1571-1574.

24. Nicolas V, Beese M, Keulers A, Bressel M, Kastendieck H, Huland H. MR-Tomographie des Prostatakarzinoms--Vergleich konventionelle und endorektale MRT. *Fortschr Röntgenstr* 1994; 161:319-326.
25. Rifkin MD, Zerhouni EA, Gatsonis CA, et al. Comparison of magnetic resonance imaging and ultrasonography in staging early prostate cancer. Results of a multi-institutional cooperative trial. *N Engl J Med* 1990; 323:621-626.
26. Tempany CM, Rahmouni AD, Epstein JI, Walsh PC, Zerhouni EA. Invasion of the neurovascular bundle by prostate cancer: evaluation with MR imaging. *Radiology* 1991; 181:107-112.
27. Hricak H, White S, Vigneron D, et al. Carcinoma of the prostate gland: MR imaging with pelvic phased-array coils versus integrated endorectal--pelvic phased-array coils. *Radiology* 1994; 193:703-709.
28. Pegios W, Bentas W, Wittmann L, et al. Kernspintomographisches Staging des Prostatakarzinoms mittels kombinierter Endorektal-Body-Phased-Array-Spule und histopathologische Korrelation. *Fortschr Röntgenstr* 2003; 175:1660-1666.
29. Beyersdorff D, Darsow U, Stephan C, Schnorr D, Loening S, Taupitz M. MRT des Prostatakarzinoms mit drei verschiedenen Spulensystemen: Abbildungsqualität des Tumors und Staging. *Fortschr Röntgenstr* 2003; 175:799-805.
30. Getty DJ, Seltzer SE, Tempany CM, Pickett RM, Swets JA, McNeil BJ. Prostate cancer: relative effects of demographic, clinical, histologic, and MR imaging variables on the accuracy of staging. *Radiology* 1997; 204:471-479.
31. Ikonen S, Kivisaari L, Tervahartiala P, Vehmas T, Taari K, Rannikko S. Prostatic MR imaging. Accuracy in differentiating cancer from other prostatic disorders. *Acta Radiol* 2001; 42:348-354.
32. Dhingsa R, Qayyum A, Coakley FV, et al. Prostate cancer localization with endorectal MR imaging and MR spectroscopic imaging: effect of clinical data on reader accuracy. *Radiology* 2004; 230:215-220.
33. Yu KK, Hricak H, Alagappan R, Chernoff DM, Bacchetti P, Zaloudek CJ. Detection of extracapsular extension of prostate carcinoma with endorectal

- and phased-array coil MR imaging: multivariate feature analysis. *Radiology* 1997; 202:697-702.
34. Mullerad M, Hricak H, Wang L, Chen HN, Kattan MW, Scardino PT. Prostate cancer: detection of extracapsular extension by genitourinary and general body radiologists at MR imaging. *Radiology* 2004; 232:140-146.
 35. Ikonen S, Karkkainen P, Kivisaari L, et al. Magnetic resonance imaging of clinically localized prostatic cancer. *J Urol* 1998; 159:915-919.
 36. Ellis JH, Tempany C, Sarin MS, Gatsonis C, Rifkin MD, McNeil BJ. MR imaging and sonography of early prostatic cancer: pathologic and imaging features that influence identification and diagnosis. *AJR Am J Roentgenol* 1994; 162:865-872.
 37. Perrotti M, Han KR, Epstein RE, et al. Prospective evaluation of endorectal magnetic resonance imaging to detect tumor foci in men with prior negative prostatic biopsy: a pilot study. *J Urol* 1999; 162:1314-1317.
 38. Beyersdorff D, Taupitz M, Winkelmann B, et al. Patients with a history of elevated prostate-specific antigen levels and negative transrectal US-guided quadrant or sextant biopsy results: value of MR imaging. *Radiology* 2002; 224:701-706.
 39. Bloch BN, Rofsky NM, Baroni RH, Marquis RP, Pedrosa I, Lenkinski RE. 3 Tesla magnetic resonance imaging of the prostate with combined pelvic phased-array and endorectal coils; Initial experience(1). *Acad Radiol* 2004; 11:863-867.
 40. Futterer JJ, Scheenen TW, Huisman HJ, et al. Initial experience of 3 tesla endorectal coil magnetic resonance imaging and ¹H-spectroscopic imaging of the prostate. *Invest Radiol* 2004; 39:671-680.
 41. Sosna J, Pedrosa I, Dewolf WC, Mahallati H, Lenkinski RE, Rofsky NM. MR imaging of the prostate at 3 Tesla: comparison of an external phased-array coil to imaging with an endorectal coil at 1.5 Tesla. *Acad Radiol* 2004; 11:857-862.
 42. Kurhanewicz J, Vigneron DB, Nelson SJ, et al. Citrate as an in vivo marker to discriminate prostate cancer from benign prostatic hyperplasia and normal prostate peripheral zone: detection via localized proton spectroscopy. *Urology* 1995; 45:459-466.

43. Scheidler J, Hricak H, Vigneron DB, et al. Prostate cancer: localization with three-dimensional proton MR spectroscopic imaging--clinicopathologic study. *Radiology* 1999; 213:473-480.
44. Kurhanewicz J, Vigneron DB, Hricak H, Narayan P, Carroll P, Nelson SJ. Three-dimensional H-1 MR spectroscopic imaging of the in situ human prostate with high (0.24-0.7-cm³) spatial resolution. *Radiology* 1996; 198:795-805.
45. Coakley FV, Kurhanewicz J, Lu Y, et al. Prostate cancer tumor volume: measurement with endorectal MR and MR spectroscopic imaging. *Radiology* 2002; 223:91-97.
46. Mueller-Lisse UG, Vigneron DB, Hricak H, et al. Localized prostate cancer: effect of hormone deprivation therapy measured by using combined three-dimensional 1H MR spectroscopy and MR imaging: clinicopathologic case-controlled study. *Radiology* 2001; 221:380-390.
47. Kurhanewicz J, Swanson MG, Nelson SJ, Vigneron DB. Combined magnetic resonance imaging and spectroscopic imaging approach to molecular imaging of prostate cancer. *J Magn Reson Imaging* 2002; 16:451-463.
48. Gerlowski LE, Jain RK. Microvascular permeability of normal and neoplastic tissues. *Microvasc Res* 1986; 31:288-305.
49. Daldrup H, Shames DM, Wendland M, et al. Correlation of dynamic contrast-enhanced MR imaging with histologic tumor grade: comparison of macromolecular and small-molecular contrast media. *AJR Am J Roentgenol* 1998; 171:941-949.
50. Vartanian RK, Weidner N. Endothelial cell proliferation in prostatic carcinoma and prostatic hyperplasia: correlation with Gleason's score, microvessel density, and epithelial cell proliferation. *Lab Invest* 1995; 73:844-850.
51. Weidner N, Carroll PR, Flax J, Blumenfeld W, Folkman J. Tumor angiogenesis correlates with metastasis in invasive prostate carcinoma. *Am J Pathol* 1993; 143:401-409.
52. Wakui S, Furusato M, Itoh T, et al. Tumour angiogenesis in prostatic carcinoma with and without bone marrow metastasis: a morphometric study. *J Pathol* 1992; 168:257-262.

53. Brown G, Macvicar DA, Ayton V, Husband JE. The role of intravenous contrast enhancement in magnetic resonance imaging of prostatic carcinoma. *Clin-Radiol* 1995; 50:601-606.
54. Huch Böni RA, Boner JA, Lutolf UM, Trinkler F, Pestalozzi DM, Krestin GP. Contrast-enhanced endorectal coil MRI in local staging of prostate carcinoma. *J-Comput-Assist-Tomogr* 1995; 19:232-237.
55. Brix G, Semmler W, Port R, Schad LR, Layer G, Lorenz WJ. Pharmacokinetic parameters in CNS Gd-DTPA enhanced MR imaging. *J-Comput-Assist-Tomogr* 1991; 15:621-628.
56. Hawighorst H, Schaeffer U, Knapstein PG, et al. Erfassung angiogeneseabhängiger Parameter mittels funktioneller MRT: Korrelation mit der Histomorphologie sowie Abklärung der klinischen Relevanz als Prognosefaktor am Beispiel des Zervixkarzinomes. *Fortschr Röntgenstr* 1998; 169:499-504.
57. Rosen BR, Belliveau JW, Vevea JM, Brady TJ. Perfusion imaging with NMR contrast agents. *Magn-Reson-Med* 1990; 14:249-265.
58. Engelbrecht MR, Huisman HJ, Laheij RJ, et al. Discrimination of prostate cancer from normal peripheral zone and central gland tissue by using dynamic contrast-enhanced MR imaging. *Radiology* 2003; 229:248-254.
59. Huisman HJ, Engelbrecht MR, Barentsz JO. Accurate estimation of pharmacokinetic contrast-enhanced dynamic MRI parameters of the prostate. *J Magn Reson Imaging* 2001; 13:607-614.
60. Kiessling F, Huber PE, Grobholz R, et al. Dynamic magnetic resonance tomography and proton magnetic resonance spectroscopy of prostate cancers in rats treated by radiotherapy. *Invest Radiol* 2004; 39:34-44.
61. Gossman A, Okuhata Y, Shames DM, et al. Prostate cancer tumor grade differentiation with dynamic contrast-enhanced MR imaging in the rat: comparison of macromolecular and small-molecular contrast media--preliminary experience. *Radiology* 1999; 213:265-272.
62. Gemeinhardt O, Lüdemann L, Prochnow D, et al. Differentiation of prostate cancer from normal prostate tissue in an animal model: conventional MRI and dynamic contrast-enhanced MRI. *Fortschr Röntgenstr* 2005; 177:935-939.

63. Jager GJ, Ruijter ET, van de Kaa CA, et al. Dynamic TurboFLASH subtraction technique for contrast-enhanced MR imaging of the prostate: correlation with histopathologic results. *Radiology* 1997; 203:645-652.
64. Padhani AR, MacVicar AD, Gapinski CJ, et al. Effects of androgen deprivation on prostatic morphology and vascular permeability evaluated with mr imaging. *Radiology* 2001; 218:365-374.
65. Lüdemann L, Grieger W, Wurm R, Budzisch M, Hamm B, Zimmer C. Comparison of dynamic contrast-enhanced MRI with WHO tumor grading for gliomas. *Eur Radiol* 2001; 11:1231-1241.
66. Lüdemann L, Hamm B, Zimmer C. Pharmacokinetic analysis of glioma compartments with dynamic Gd-DTPA-enhanced magnetic resonance imaging. *Magn Reson Imaging* 2000; 18:1201-1214.
67. Muramoto S, Uematsu H, Kimura H, et al. Differentiation of prostate cancer from benign prostate hypertrophy using dual-echo dynamic contrast MR imaging. *Eur J Radiol* 2002; 44:52-58.
68. Bostwick DG. Gleason grading of prostatic needle biopsies - correlation with grade in 316 matched prostatectomies. *Am J Surg Pathol* 1994; 18:796-803.
69. Wefer AE, Hricak H, Vigneron DB, et al. Sextant localization of prostate cancer: comparison of sextant biopsy, magnetic resonance imaging and magnetic resonance spectroscopic imaging with step section histology. *J Urol* 2000; 164:400-404.
70. D'Amico AV, Tempany CM, Cormack R, et al. Transperineal magnetic resonance image guided prostate biopsy. *J Urol* 2000; 164:385-387.
71. D'Amico A, Cormack R, Kumar S, Tempany CM. Real-time magnetic resonance imaging-guided brachytherapy in the treatment of selected patients with clinically localized prostate cancer. *J Endourol* 2000; 14:367-370.
72. Cormack RA, D'Amico AV, Hata N, Silverman S, Weinstein M, Tempany CM. Feasibility of transperineal prostate biopsy under interventional magnetic resonance guidance. *Urology* 2000; 56:663-664.
73. Beyersdorff D, Winkel A, Hamm B, Lenk S, Loening SA, Taupitz M. MR imaging-guided prostate biopsy with a closed MR unit at 1.5 T: initial results. *Radiology* 2005; 234:576-581.

74. Susil RC, Krieger A, Derbyshire JA, et al. System for MR image-guided prostate interventions: canine study. *Radiology* 2003; 228:886-894.
75. Institut RK. Krebsinzidenzschätzungen und Mortalität für Deutschland. Website RKI 2005.
76. Harris R, Lohr KN. Screening for prostate cancer: an update of the evidence for the U.S. Preventive Services Task Force. *Ann Intern Med* 2002; 137:917-929.
77. Becker N. Pro und Contra des PSA-Screenings. *Berliner Ärzteblatt* 2004; November.
78. Walsh PC. The association of treatment-related symptoms with quality-of-life outcomes for localized prostate carcinoma patients. *J Urol* 2002; 168:1641.
79. Holmberg L, Bill-Axelson A, Helgesen F, et al. A randomized trial comparing radical prostatectomy with watchful waiting in early prostate cancer. *N Engl J Med* 2002; 347:781-789.
80. Schlemmer HP, Merkle J, Grobholz R, et al. Can pre-operative contrast-enhanced dynamic MR imaging for prostate cancer predict microvessel density in prostatectomy specimens? *Eur Radiol* 2004; 14:309-317.
81. Zakian KL, Sircar K, Hricak H, et al. Correlation of proton MR spectroscopic imaging with gleason score based on step-section pathologic analysis after radical prostatectomy. *Radiology* 2005; 234:804-814.
82. Cam K, Yucel S, Turkeri L, Akdas A. Accuracy of transrectal ultrasound guided prostate biopsy: histopathological correlation to matched prostatectomy specimens. *Int J Urol* 2002; 9:257-260.
83. Durkan GC, Greene DR. Diagnostic dilemmas in detection of prostate cancer in patients undergoing transrectal ultrasound-guided needle biopsy of the prostate. *Prostate Cancer Prostatic Dis* 2000; 3:13-20.
84. Raaijmakers R, Kirkels WJ, Roobol MJ, Wildhagen MF, Schrder FH. Complication rates and risk factors of 5802 transrectal ultrasound-guided sextant biopsies of the prostate within a population-based screening program. *Urology* 2002; 60:826-830.
85. Pelzer A, Bektic J, Berger AP, et al. Prostate cancer detection in men with prostate specific antigen 4 to 10 ng/ml using a combined approach of

- contrast enhanced color Doppler targeted and systematic biopsy. *J Urol* 2005; 173:1926-1929.
86. D'Amico AV, Cormack RA, Tempany CM. MRI-guided diagnosis and treatment of prostate cancer. *N Engl J Med* 2001; 344:776-777.
87. Berger AP, Gozzi C, Steiner H, et al. Complication rate of transrectal ultrasound guided prostate biopsy: a comparison among 3 protocols with 6, 10 and 15 cores. *J Urol* 2004; 171:1478-1480; discussion 1480-1471.
88. White S, Hricak H, Forstner R, et al. Prostate cancer: effect of postbiopsy hemorrhage on interpretation of MR images. *Radiology* 1995; 195:385-390.