

Title: Prostate Cancer



Speaker

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Memorial Sloan-Kettering Cancer Center



Chairman

Chikashi Ishioka, M.D.
Professor, Institute of Development, Aging, and Cancer,
Tohoku University, Japan

Howard I. Scher, MD

EDUCATION

MD, New York University School of Medicine

CLINICAL EXPERTISE

Prostate Cancer and Other Genitourinary Malignancies; Immunotherapy

CURRENT ACTIVITIES AND RESEARCH INTEREST (from HP of MSKCC)

I am Chief of the Genitourinary Oncology Service at the Sidney Kimmel Center for Urologic and Prostate Cancers at Memorial Sloan-Kettering and a board-certified medical oncologist with special expertise in treating men with advanced prostate cancer. Under my leadership, the Genitourinary Oncology Service program is dedicated to the treatment of prostate cancer, testicular cancer, bladder and upper-tract urothelial cancer, and kidney cancer. Our objective is to foster synergy between scientific research and clinical practice, and to ensure that promising scientific discoveries are used to develop new diagnostic tests and treatments for patients.

My own research is focused on three critical areas: developing treatments that target specific signaling pathways that contribute to prostate cancer growth, developing non-invasive methods to determine whether these agents are working, and improving the way drugs are evaluated in the clinic.

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Targeted therapies, which attack specific cancer cells without harming normal cells, have the potential to treat cancers with fewer side effects than conventional therapies. Critical to the development of this approach, is to determine which treatment is most likely to be beneficial to an individual patient. Currently, prostate-specific antigen (PSA) is the best routinely available biomarker providing diagnostic and prognostic information about prostate cancer. PSA testing is useful, but does not reliably determine whether or not a treatment is working, nor does not provide definitive guidance in selecting one therapy over another. My colleagues and I are evaluating a promising new blood test for circulating tumor cells. We are finding that the number of circulating tumor cells in a patient's blood helps determine a patient's prognosis and whether or not a treatment is working. Circulating tumor cells are also providing a biological snapshot of an individual patient's tumor, which may help determine the choice of therapy.

As a member of the Prostate Cancer Clinical Trials Working Group, I led an international effort to standardize development of the design and analysis of phase 2 clinical trials, so we can better utilize prostate cancer therapeutics and imaging modalities. I also developed the Clinical States Model of Prostate Cancer Progression, which, in categorizing the clinical spectrum of prostate cancer from diagnosis to metastasis, provides a framework to access and reassess prognosis over time.

I am also the principal investigator of the Prostate Cancer Clinical Trials Consortium, a 13-center research collaborative headquartered at Memorial Sloan-Kettering and funded by the Department of Defense and the Prostate Cancer Foundation. A critical part of this effort is to design and conduct clinical trials of promising new approaches are available to patients as soon as possible. Since 2006, the consortium has facilitated 60 new studies related to prostate cancer. Ultimately, through these clinical trials, we seek to develop more effective treatments for prostate cancers of all stages and to discover means of prevention.

In addition to serving as Chief of the Genitourinary Oncology Service for the past 16 years, I am the incumbent of the D. Wayne Calloway Chair in Urologic Oncology and a Professor of Medicine at the Joan and Sanford Weill Medical College of Cornell University. I am a recipient of the Donald S. Coffey-Prostate Cancer Foundation Physician-Scientist Award, and the Distinguished Alumnus Award. I also serve on numerous editorial and scientific advisory boards and am a reviewer for many journals, including *The New England Journal of Medicine*, *Clinical Cancer Research*, the *Journal of Clinical Oncology*, the *Journal of Urology*, and the *Journal of the American Medical Association*. I have written extensively and published over 370 peer-reviewed articles in scientific journals and coauthored the textbook *Principals and Practice of Genitourinary Oncology*.

PUBLICATIONS:

>400 publications

Publications in 2011 and 2012

1. Parkinson DR, Dracopoli N, Gumbs Petty B, Compton C, Cristofanilli M, Deisseroth A, Hayes DF, Kapke G, Kumar P, Lee JS, Liu MC, McCormack R, Mikulski S, Nagahara L, Pantel K, Pearson-White S, Punnoose EA, Roadcap LT, Schade AE, Scher HI, Sigman CC, Kelloff GJ. Considerations in the development of circulating tumor cell technology for clinical use. *J Transl Med.* 2012 Jul 2;10(1):138. [Epub ahead of print]
2. Ulmert D, Vickers AJ, Scher HI, Becker C, Iversen P, Frankel D, Jensen JK, Kold Olesen T, Lilja H. Rapid elimination kinetics of free PSA or human kallikrein-related peptidase 2 after initiation of gonadotropin-releasing hormone-antagonist treatment of prostate cancer: potential for rapid monitoring of treatment responses. *Clin Chem Lab Med.* 2012 May 30;0(0):1-6. doi: 10.1515/cclm-2011-0967.
3. Centenera MM, Gillis JL, Hanson AR, Jindal S, Taylor RA, Risbridger GP, Sutherland PD, Scher HI, Raj GV, Knudsen KE, Yeadon T; for the Australian Prostate Cancer BioResource, Tilley WD, Butler LM. Evidence for Efficacy of New Hsp90 Inhibitors Revealed by Ex Vivo Culture of Human Prostate Tumors. *Clin Cancer Res.* 2012 Jul 1;18(13):3562-3570. Epub 2012 May 9.
4. Morris MJ, Eisenberger MA, Pili R, Denmeade SR, Rathkopf D, Slovin SF, Farrelly J, Chudow JJ, Vincent M, Scher HI, Carducci MA. A phase I/IIA study of AGS-PSCA for castration-resistant prostate cancer. *Ann Oncol.* 2012 May 2. [Epub ahead of print]
5. Autio KA, Scher HI, Morris MJ. Therapeutic strategies for bone metastases and their clinical sequelae in prostate cancer. *Curr Treat Options Oncol.* 2012 Jun;13(2):174-88.
6. Brown MS, Chu GH, Kim HJ, Allen-Auerbach M, Poon C, Bridges J, Vidovic A, Ramakrishna B, Ho J, Morris MJ, Larson SM, Scher HI, Goldin JG. Computer-aided quantitative bone scan assessment of prostate cancer treatment response. *Nucl Med Commun.* 2012 Apr;33(4):384-94.
7. Ulmert D, Kaboteh R, Fox JJ, Savage C, Evans MJ, Lilja H, Abrahamsson PA, Björk T, Gerdtsson A, Bjartell A, Gjertsson P, Höglund P, Lomsky M, Ohlsson M, Richter J, Sadik M, Morris MJ, Scher HI, Sjöstrand K, Yu A, Suurküla M, Edenbrandt L, Larson SM. A novel automated platform for quantifying the extent of skeletal tumour involvement in prostate cancer patients using the Bone Scan Index. *Eur Urol.* 2012 Jul;62(1):78-84. Epub 2012 Jan 27.
8. Thompson VC, Day TK, Bianco-Miotto T, Selth LA, Han G, Thomas M, Buchanan G, Scher HI, Nelson CC; Australian Prostate Cancer BioResource, Greenberg NM, Butler LM, Tilley WD. A gene signature identified using a mouse model of androgen receptor-dependent prostate cancer predicts biochemical relapse in human disease. *Int J Cancer.* 2012 Aug 1;131(3):662-72. doi: 10.1002/ijc.26414. Epub 2012 Jan 24.
9. Clegg NJ, Wongvipat J, Joseph JD, Tran C, Ouk S, Dilhas A, Chen Y, Grillot K, Bischoff ED, Cai L, Aparicio A, Dorow S, Arora V, Shao G, Qian J, Zhao H, Yang G, Cao C, Sensintaffar J, Wasielewska T, Herbert MR, Bonnefous C, Darimont B, Scher HI, Smith-Jones P, Klang M, Smith ND, De Stanchina E, Wu N, Ouerfelli O, Rix PJ, Heyman RA, Jung ME, Sawyers CL, Hager JH. ARN-509: a novel antiandrogen for prostate cancer treatment. *Cancer Res.* 2012 Mar 15;72(6):1494-503. Epub 2012 Jan 20.
10. Chen Y, Scher HI. Prostate cancer in 2011: Hitting old targets better and identifying new targets. *Nat Rev Clin Oncol.* 2012 Jan 10;9(2):70-2. doi: 10.1038/nrclinonc.2011.213. Review.
11. Dennis ER, Jia X, Mezheritskiy IS, Stephenson RD, Schoder H, Fox JJ, Heller G, Scher HI, Larson SM, Morris MJ. Bone scan index: a quantitative treatment response biomarker for castration-resistant metastatic prostate cancer. *J Clin Oncol.* 2012 Feb 10;30(5):519-24. Epub 2012 Jan 9.
12. Danila DC, Pantel K, Fleisher M, Scher HI. Circulating tumors cells as biomarkers: progress toward biomarker qualification. *Cancer J.* 2011 Nov-Dec;17(6):438-50. Review
13. Iyer G, Morris MJ, Rathkopf D, Slovin SF, Steers M, Larson SM, Schwartz LH, Curley T, DeLaCruz A, Ye Q, Heller G, Egorin MJ, Ivy SP, Rosen N, Scher HI, Solit DB. A phase I trial of docetaxel and pulse-dose 17-allylamino-17-demethoxygeldanamycin in adult patients with solid tumors. *Cancer Chemother Pharmacol.* 2012 Apr;69(4):1089-97. Epub 2011 Nov 29.
14. Armstrong AJ, Eisenberger MA, Halabi S, Oudard S, Nanus DM, Petrylak DP, Sartor AO, Scher HI. Biomarkers in the management and treatment of men with metastatic castration-resistant prostate cancer. *Eur Urol.* 2012 Mar;61(3):549-59. Epub 2011 Nov 12. Review
15. Lowrance WT, Elkin EB, Yee DS, Feifer A, Ehdai B, Jacks LM, Atoria CL, Zelefsky MJ, Scher HI, Scardino PT, Eastham JA. Locally advanced prostate cancer: a population-based study of treatment patterns. *BJU Int.* 2012 May;109(9):1309-14. doi: 10.1111/j.1464-410X.2011.10760.x. Epub 2011 Nov 15.

16. Scher HI, Nasso SF, Rubin EH, Simon R. Adaptive clinical trial designs for simultaneous testing of matched diagnostics and therapeutics. *Clin Cancer Res.* 2011 Nov 1;17(21):6634-40.
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18. Fox JJ, Aufranc-Blanc E, Morris MJ, Gavane S, Nehmeh S, Van Nuffel A, Gönen M, Schöder H, Humm JL, Scher HI, Larson SM. Practical approach for comparative analysis of multilesion molecular imaging using a semiautomated program for PET/CT. *J Nucl Med.* 2011 Nov;52(11):1727-32. Epub 2011 Oct 7.
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20. Danila DC, Anand A, Sung CC, Heller G, Leversha MA, Cao L, Lilja H, Molina A, Sawyers CL, Fleisher M, Scher HI. TMPRSS2-ERG status in circulating tumor cells as a predictive biomarker of sensitivity in castration-resistant prostate cancer patients treated with abiraterone acetate. *Eur Urol.* 2011 Nov;60(5):897-904. Epub 2011 Jul 14.
21. Danila DC, Fleisher M, Scher HI. Circulating tumor cells as biomarkers in prostate cancer. *Clin Cancer Res.* 2011 Jun 15;17(12):3903-12. Review.
22. de Bono JS, Logothetis CJ, Molina A, Fizazi K, North S, Chu L, Chi KN, Jones RJ, Goodman OB Jr, Saad F, Staffurth JN, Mainwaring P, Harland S, Flaig TW, Hutson TE, Cheng T, Patterson H, Hainsworth JD, Ryan CJ, Sternberg CN, Ellard SL, Fléchon A, Saleh M, Scholz M, Efstathiou E, Zivi A, Bianchini D, Loriot Y, Chieffo N, Kheoh T, Haqq CM, Scher HI; COU-AA-301 Investigators. Abiraterone and increased survival in metastatic prostate cancer. *N Engl J Med.* 2011 May 26;364(21):1995-2005.
23. Fox JJ, Morris MJ, Larson SM, Schöder H, Scher HI. Developing imaging strategies for castration resistant prostate cancer. *Acta Oncol.* 2011 Jun;50 Suppl 1:39-48.
24. Diamandis EP, Pantel K, Scher HI, Terstappen L, Lianidou E. Circulating cancer cells and their clinical applications. *Clin Chem.* 2011 Nov;57(11):1478-84. doi: 10.1373/clinchem.2011.166678. Epub 2011 May 17. No abstract available.
25. Carver BS, Chapinski C, Wongvipat J, Hieronymus H, Chen Y, Chandralapaty S, Arora VK, Le C, Koutcher J, Scher H, Scardino PT, Rosen N, Sawyers CL. Reciprocal feedback regulation of PI3K and androgen receptor signaling in PTEN-deficient prostate cancer. *Cancer Cell.* 2011 May 17;19(5):575-86.
26. International Collaboration of Trialists; Medical Research Council Advanced Bladder Cancer Working Party (now the National Cancer Research Institute Bladder Cancer Clinical Studies Group); European Organisation for Research and Treatment of Cancer Genito-Urinary Tract Cancer Group; Australian Bladder Cancer Study Group; National Cancer Institute of Canada Clinical Trials Group; Finnbladder; Norwegian Bladder Cancer Study Group; Club Urologico Espanol de Tratamiento Oncologico Group, Griffiths G, Hall R, Sylvester R, Raghavan D, Parmar MK. International phase III trial assessing neoadjuvant cisplatin, methotrexate, and vinblastine chemotherapy for muscle-invasive bladder cancer: long-term results of the BA06 30894 trial. *J Clin Oncol.* 2011 Jun 1;29(16):2171-7. Epub 2011 Apr 18.
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28. Rajasekhar VK, Studer L, Gerald W, Socci ND, Scher HI. Tumour-initiating stem-like cells in human prostate cancer exhibit increased NF- κ B signalling. *Nat Commun.* 2011 Jan 18;2:162.

**IAAO2012 Title of the Talk:
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