BAUS section of Oncology Annual Meeting
London – Sep 15-16, 2014

ACTIVE SURVEILLANCE OF SMALL RENAL MASSES

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Novara, Italy

The British Association of Urological Surgeons

UPO
UNIVERSITÀ DEL PIEMONTE ORIENTALE

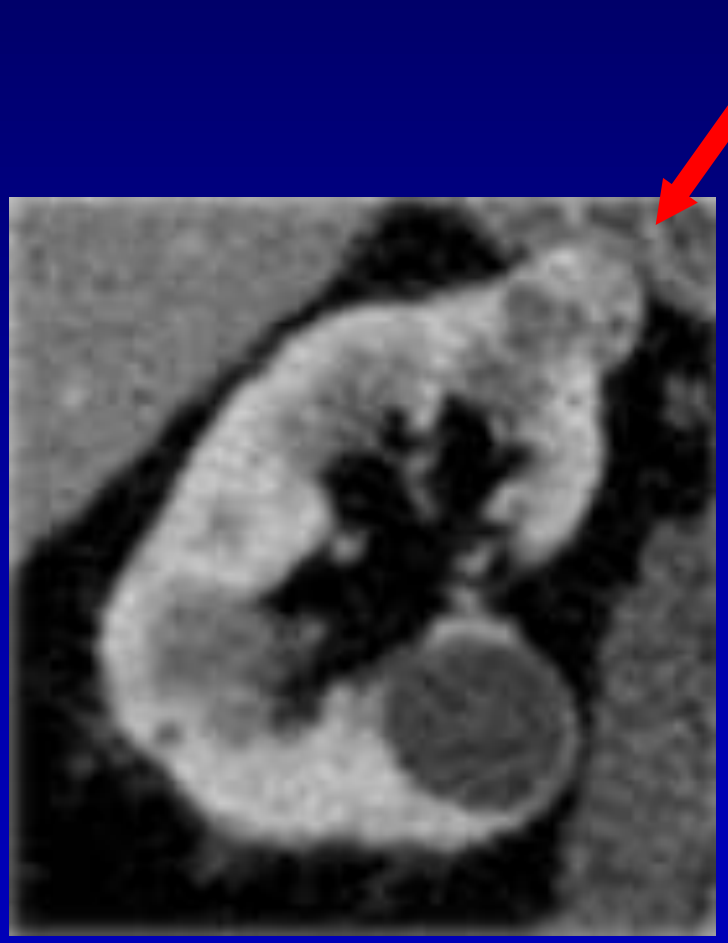
CLINICAL CASE

- 80 y.o. man
- Hypertension, COPD
- Radical prostatectomy (2006) – Path: pT3a N0 GS 4+4 prostate carcinoma – adjuvant RT – bone mets in hormonal deprivation
- TURBT (2010) - Path: pT1 G2 bladder cancer Mitomycin C – negative follow-up

CLINICAL CASE

Abdo CT Jan 2010

- 1.6 cm, solid, contrast enhancing right renal mass
- Multiple bilateral simple renal cysts



Guidelines on

Renal Cell Carcinoma

B. Ljungberg (chair), K. Bensalah, A. Bex (vice-chair), S. Canfield, S. Dabestani, F. Hofmann, M. Hora, M.A. Kuczyk, T. Lam, L. Marconi, A.S. Merseburger, P.F.A. Mulders, T. Powles, M. Staehler, A. Volpe

Recommendations	GR
Surgery is recommended to achieve cure in localized RCC.	B
Nephron-sparing surgery is recommended in patients with T1a tumours.	A
Nephron-sparing surgery should be favoured over radical nephrectomy in patients with T1b tumour, whenever technically feasible.	B

Guideline for Management of the Clinical T1 Renal Mass

Steven C. Campbell,*,† Andrew C. Novick,‡ Arie Belldegrun,§ Michael L. Blute, George K. Chow, Ithaar H. Derwees
Raymond J. Leveillee,‖ Surena F. M

From the American Urological Association Education and R

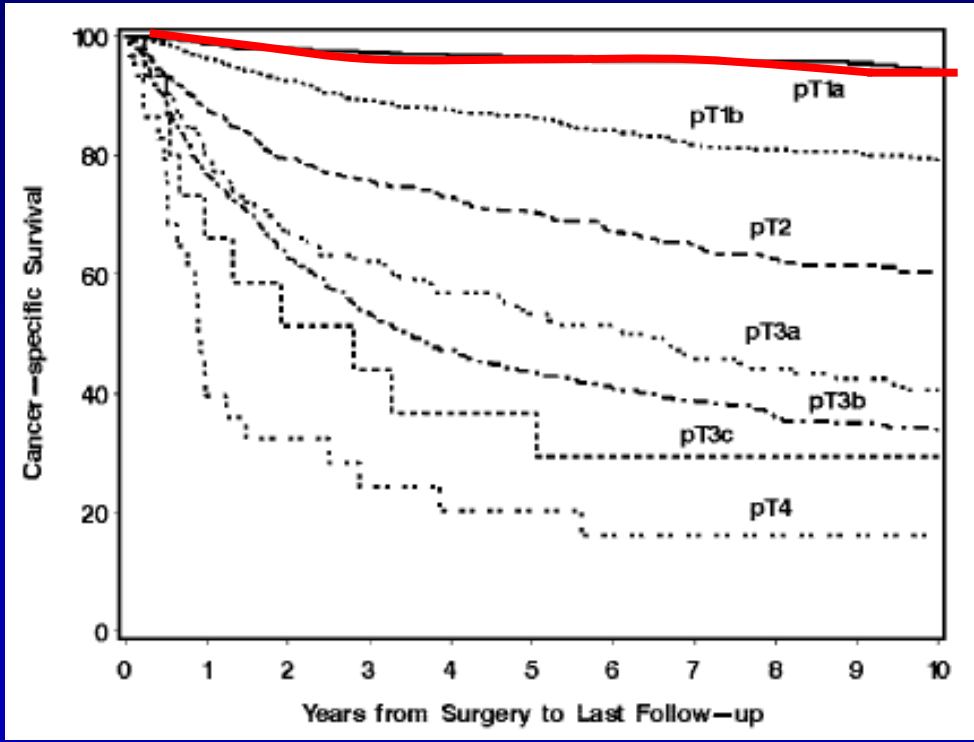
• RN, particularly laparoscopic RN, is very appealing to patients and physicians but it is greatly overutilized.[9] Nephron-sparing approaches should be considered in all patients with a clinical T1 renal mass as an overriding principle, presuming adequate oncologic control can be achieved, based on

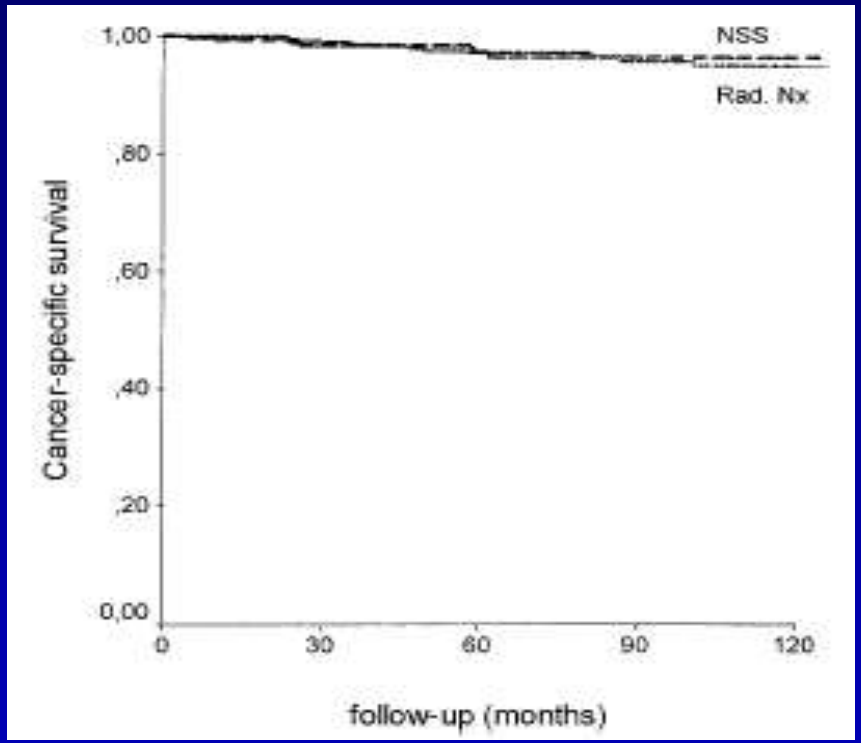
NCCN Clinical Practice Guidelines in Oncol

Kidney Cancer

- **Nephron-sparing surgery (partial nephrectomy) is appropriate in selected patients, for example:**
  - **Small unilateral tumors (T1a and selected patients T1b)**
  - **Uninephric state, renal insufficiency, bilateral renal masses, familial renal cell cancer**

pT1a RCC
SURGICAL OUTCOMES



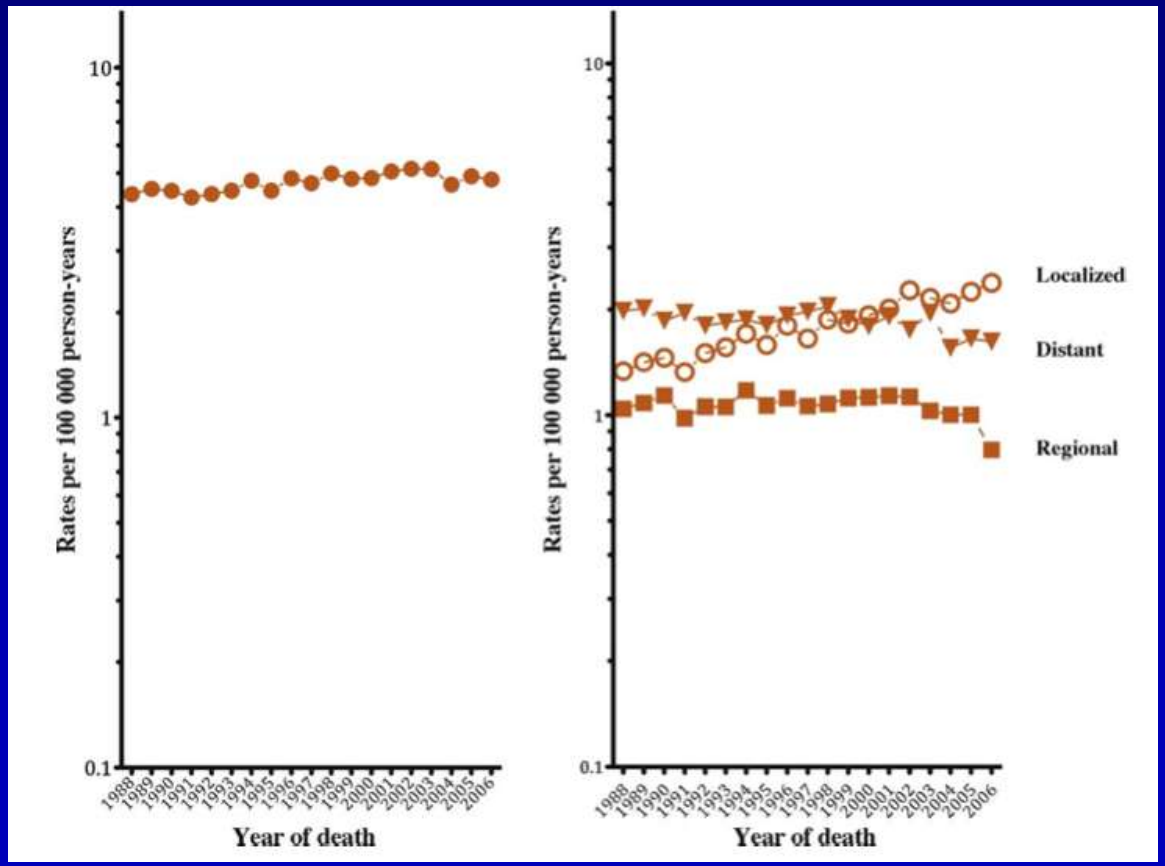


Frank et al, J Urol 2005

Patard et al, J Urol 2004

Age-Adjusted Incidence, Mortality, and Survival Rates of Stage-Specific Renal Cell Carcinoma in North America: A Trend Analysis

Maxine Sun [a,,1], Rodolphe Thuret [a,b,1], Firas Abdollah [a,c], Giovanni Lughezzani [a,c], Jan Schmitges [d], Zhe Tian [a], Shahrokh F. Shariat [e], Francesco Montorsi [c], Jean-Jacques Patard [f], Paul Perrotte [g], Pierre I. Karakiewicz [a,g]*



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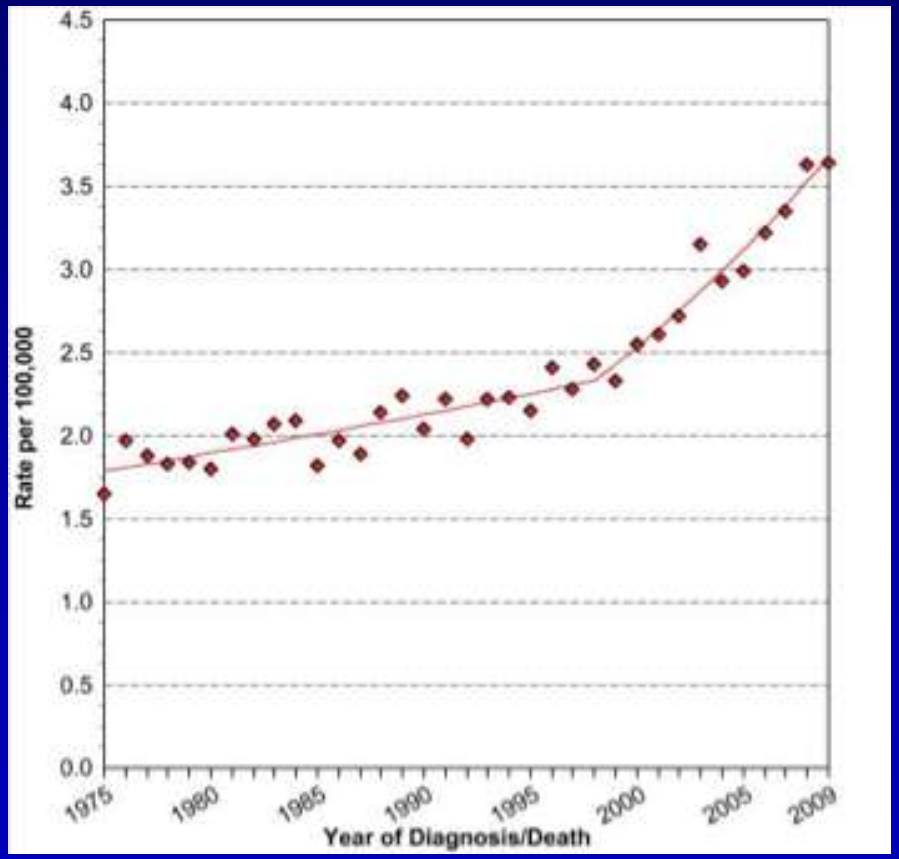
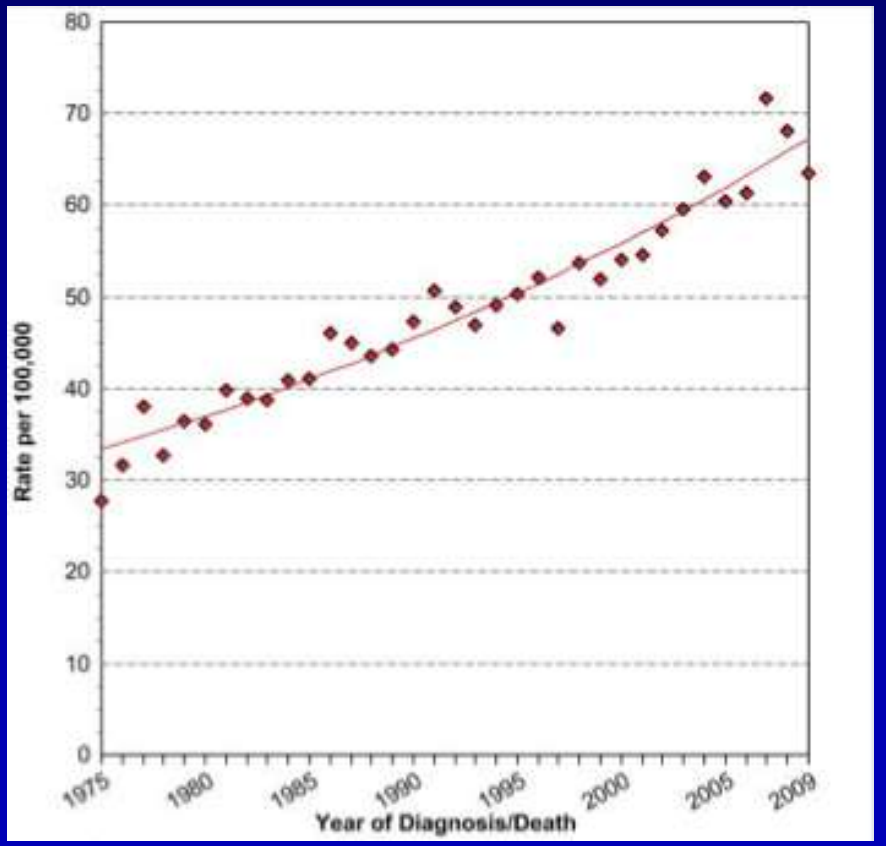


< 50 years



> 75 years

Major Invasive Surgery for Urologic Cancer in Octogenarians with Comorbid Medical Conditions

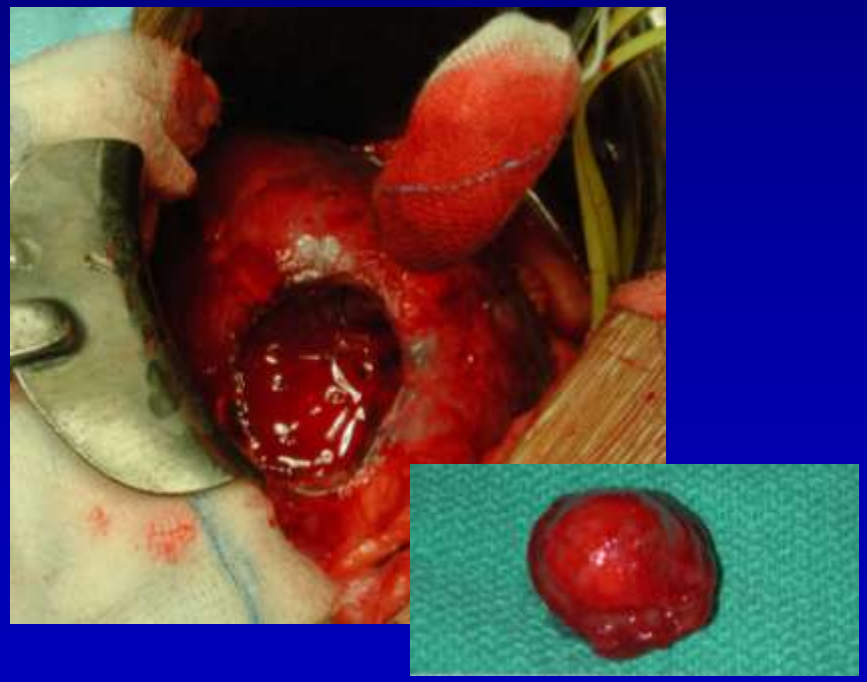
Giovanni Liguori [a,*], *Carlo Trombetta* [a], *Giorgio Pomara* [b], *Antonio Amodeo* [a], *Stefano Bucci* [a], *Giulio Garaffa* [a], *Francesco Francesca* [b], *Emanuele Belgrano* [a]

	All patients ($N = 55$)	Cystectomy ($n = 20$)	Nephrectomy ($n = 35$)
Time to canalization (d)	3.8	4.9	3.2
Time to liquid intake (d)	3.4	4.4	2.8
Time to solid intake (d)	5.5	7.1	4.5
Time to ambulation (d)	4.3	5.6	3.6
Transfusion rate (*n*)	52.7% (29)	65% (13)	45.7% (16)
Early complication rate (*n*)	32.7% (18)	35% (7)	31.4% (11)
Rehospitalization rate (*n*)	16.4% (9)	25% (5)	11.4% (4)
Mortality rate (*n*)	69.1% (38)	65% (13)	71.4% (25)

complication rate was 33%. Only the presence of more than two comorbidities ($p < 0.05$) and chronic obstructive lung disease (COLD) ($p = 0.017$) resulted in independent prognostic factors for morbidity. Sixteen per-

SMALL RENAL MASSES NATURAL HISTORY

Natural history of renal tumors has been poorly understood since the gold standard treatment is surgical removal soon after diagnosis

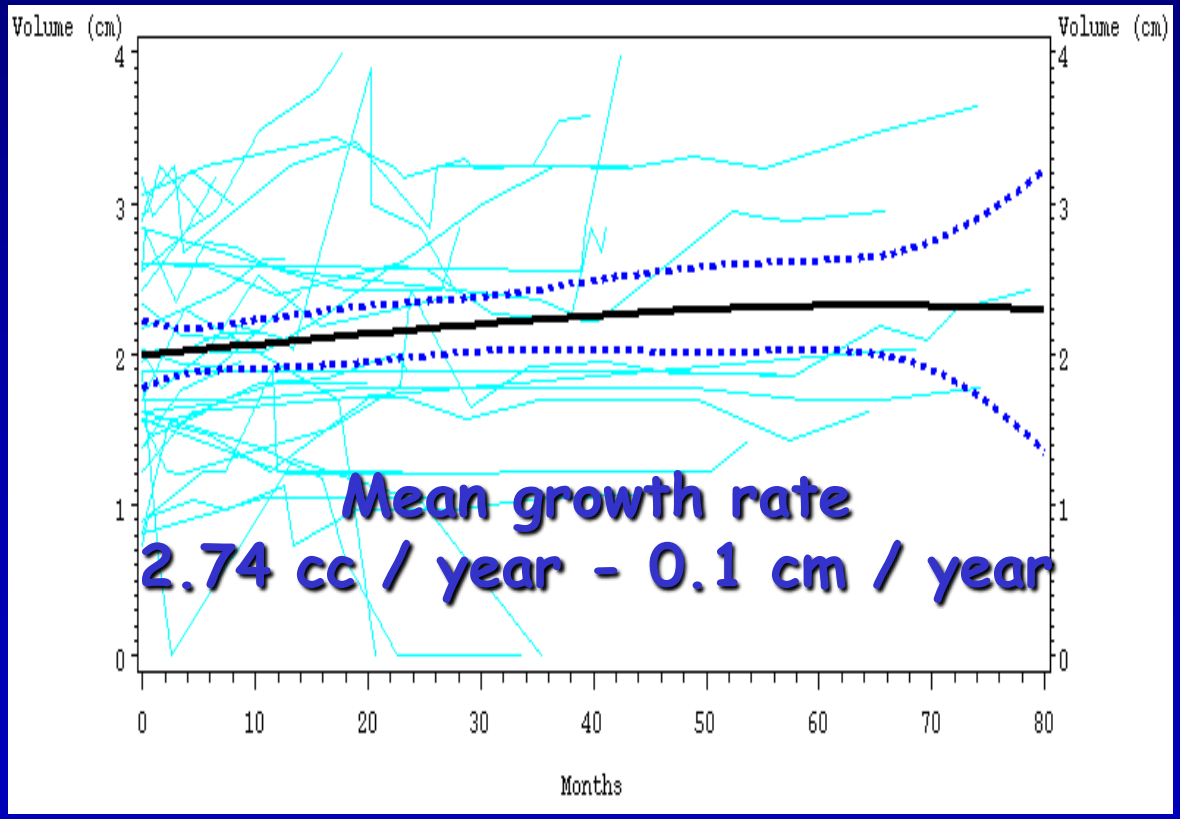


The Natural History of Incidentally Detected Small Renal Masses

Alessandro Volpe, M.D.[1]
Tony Panzarella, M.Sc.[2]
Ricardo A. Rendon, M.D.[3]
Masoom A. Haider, M.D.[4]
Filippos I. Kondylis, M.D.[1]
Michael A. S. Jewett, M.D.[1]

BACKGROUND. The incidence of renal cell carcinoma (RCC) is increasing, largely due to the widespread use of cross-sectional imaging. Most renal tumors are detected incidentally as small, asymptomatic masses. To study their natural history, the authors prospectively followed a series of patients with this type of lesion who were unsuited for or refused surgery.

METHODS. Twenty-nine patients with 32 masses that measured < 4 cm in greatest dimension (25 solid masses and 7 complex cystic masses) were studied. The



Cancer, 2004

2 NATURE CLINICAL PRACTICE UROLOGY XXX 2007 VOL 4 NO X

The role of surveillance for small renal masses

Alessandro Volpe and Michael AS Jewett*

ACTIVE SURVEILLANCE

Initial monitoring of growth rate and clinical behaviour of a SRM with serial abdominal imaging

Delayed treatment for tumors who show a fast growth or clinical progression during follow-up

The Natural History of Observed Enhancing Renal Masses: Meta-Analysis and Review of the World Literature

Sam N. Chawla, Paul L. Crispen, Alexandra L. Hanlon, Richard E. Greenberg, David Y. T. Chen and Robert G. Uzzo*

From the Departments of Urologic Oncology and Biostatistics (ALH), Fox Chase Cancer Center, Temple University School of Medicine, Philadelphia, Pennsylvania

TABLE 1. *Meta-analysis of available data on the natural history of observed masses*

References	Institution	No. Pts	Mean Lesion Size (cm)	Mean Growth Rate (cm/yr)	Mean Followup (mos)
Fujimoto et al[21]	Sendai Shakaihoken Hospital, Sendai, Japan	6	2.47	0.47	29
Bosniak et al[12,13]	New York University Medical Center, New York, NY	40	1.73	0.36	39
Kassouf et al[18]	McGill University Health Center, Montreal, Quebec, Canada	26	3.27	0.09	32
Volpe et al[17]	Princess Margaret Hospital, Toronto, Ontario, Canada	32	2.48	0.1	35
Wehle et al[15]	Mayo Clinic, Jacksonville, FL	29	1.83	0.12	32
Kato et al[16]	Tohoku School of Medicine, Sendai, Japan	18	1.98	0.42	27
Sowery and Siemens[20]	Kingston General Hospital, Kingston, Canada	22	4.08	0.86	26
Present series	FCCC, Philadelphia, PA	61	2.97	0.20	36
Totals (median)		234	2.60 (2.48)	0.28 (0.28)	34 (32)

9 series - 234 renal masses

0022-5347/06/1752-0425/0
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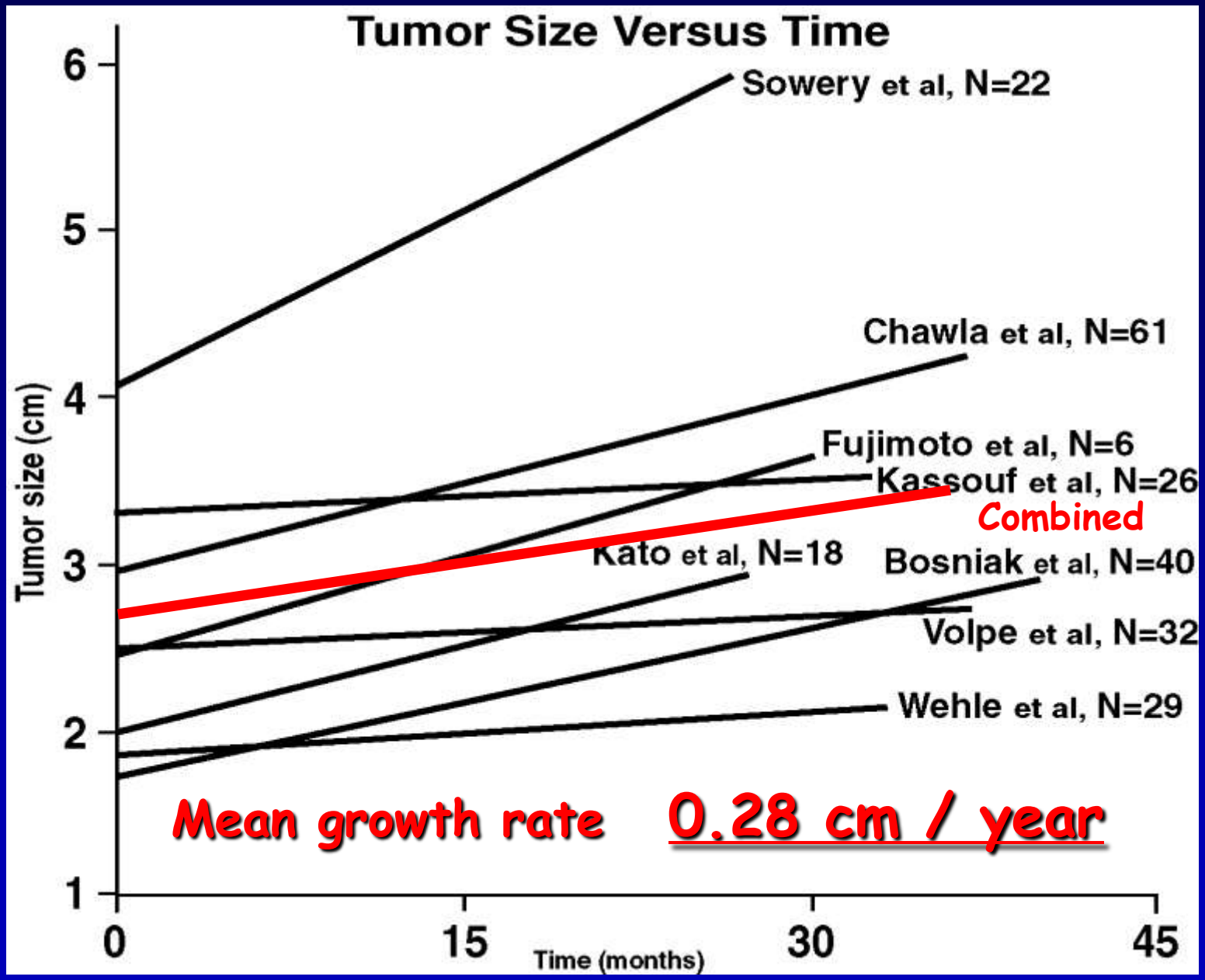


Chawla et al, J Urol, 2006

The Natural History of Observed Enhancing Renal Masses: Meta-Analysis and Review of the World Literature

Sam N. Chawla, Paul L. Crispen, Alexandra L. Hanlon, Richard E. Greenberg, David Y. T. Chen and Robert G. Uzzo*

From the Departments of Urologic Oncology and Biostatistics (ALH), Fox Chase Cancer Center, Temple University School of Medicine, Philadelphia, Pennsylvania

Purpose: Standard therapy for an enhancing renal mass is surgical. However, operative treatment may not be plausible in all clinical circumstances. Data on the natural history of untreated enhancing renal lesions is limited but could serve as a decision making resource for patients and physicians. We examined available data on the natural history of observed solid renal masses.

TABLE 2. *Meta-Analysis of available pathological findings in renal masses that underwent observation*

References	No. Lesions	No. Pathological Findings Available (%)	No. RCC Pos (%)	No. Benign (%)	No. Progression to M+ (%)
Fujimoto et al[21]	6	6 (100)	6 (100)	0	0
Bosniak et al[12,13]	40	26 (65)	22 (85)	4 (15)	0
Oda et al[14]	16	16 (100)	16 (100)	0	0
Kassouf et al[18]	26	4 (15)	4 (100)	0	0
Volpe et al[17]	32	9 (28)	8 (89)	1 (11)	0
Wehle et al[15]	29	5 (17)	4 (80)	1 (20)	0
Kato et al[16]	18	18 (100)	18 (100)	0	0
Lamb et al[19]	36	24 (67)	23 (96)	1 (4)	1 (3)
Sowery and Siemens[20]	22	2 (9)	2 (100)	0	1 (5)
Present series	61	21 (34)	17 (81)	4 (19)	1 (2)
Totals	286	131 (46)	120 (92)	11 (8)	3 (1)

Small Renal Masses Progressing to Metastases Under Active Surveillance

A Systematic Review and Pooled Analysis

Cancer February 15, 2012

Marc C. Smaldone, MD[1]; Alexander Kutikov, MD[1]; Brian L. Egleston, MPP, PhD[2]; Daniel J. Canter, MD[1]; Rosalia Viterbo, MD[1]; David Y. T. Chen, MD[1]; Michael A. Jewett, MD[3]; Richard E. Greenberg, MD[1]; and Robert G. Uzzo, MD[1]

18 studies

880 patients - 936 renal masses

18 progressions to mets (2%)

after a mean follow-up of 40.2 months

Mean linear growth rate: 0.31 cm/year

Mean volume growth rate: 6.3 cm^3/year

Active Surveillance of Small Renal Masses: Progression Patterns of Early Stage Kidney Cancer

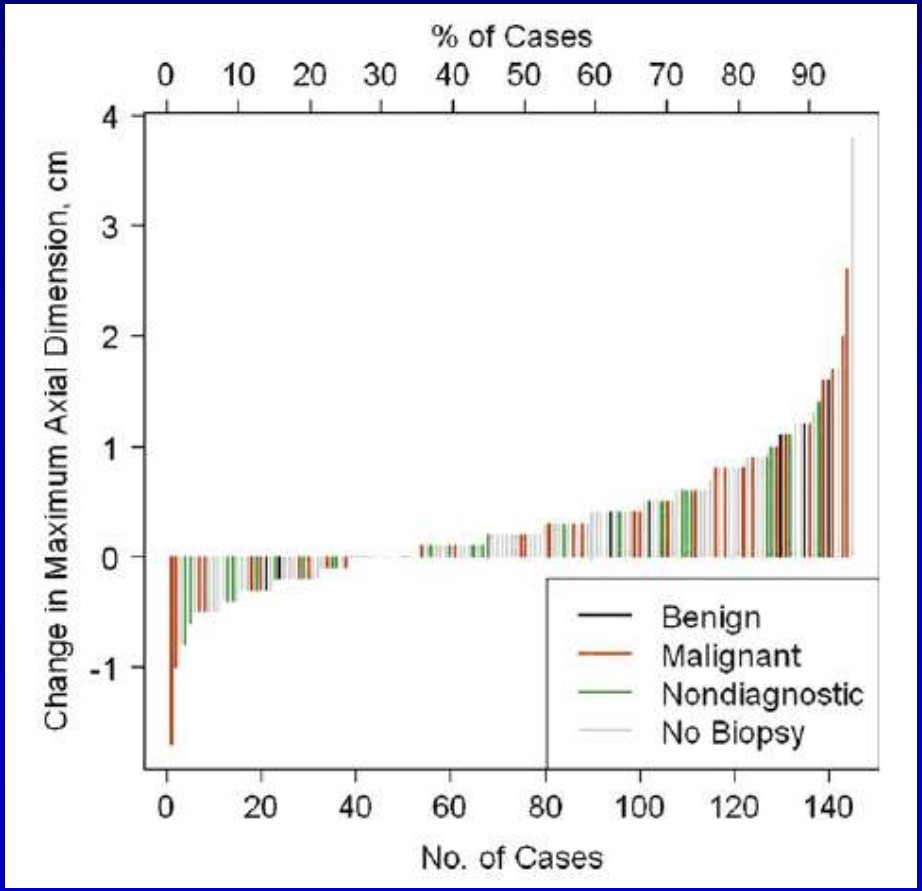
Michael A.S. Jewett[a,], Kamal Mattar[a], Joan Basiuk[a], Christopher G. Morash[b], Stephen E. Pautler[c], D. Robert Siemens[d], Simon Tanguay[e], Ricardo A. Rendon[f], Martin E. Gleave[g], Darrel E. Drachenberg[h], Raymond Chow[i], Hannah Chung[a], Joseph L. Chin[j], Neil E. Fleshner[a], Andrew J. Evans[k], Brenda L. Gallie[l], Masoom A. Haider[m], John R. Kachura[m], Ghada Kurban[a], Kimberly Fernandes[n], Antonio Finelli[a]*

209 incidental SRMs (<4 cm)

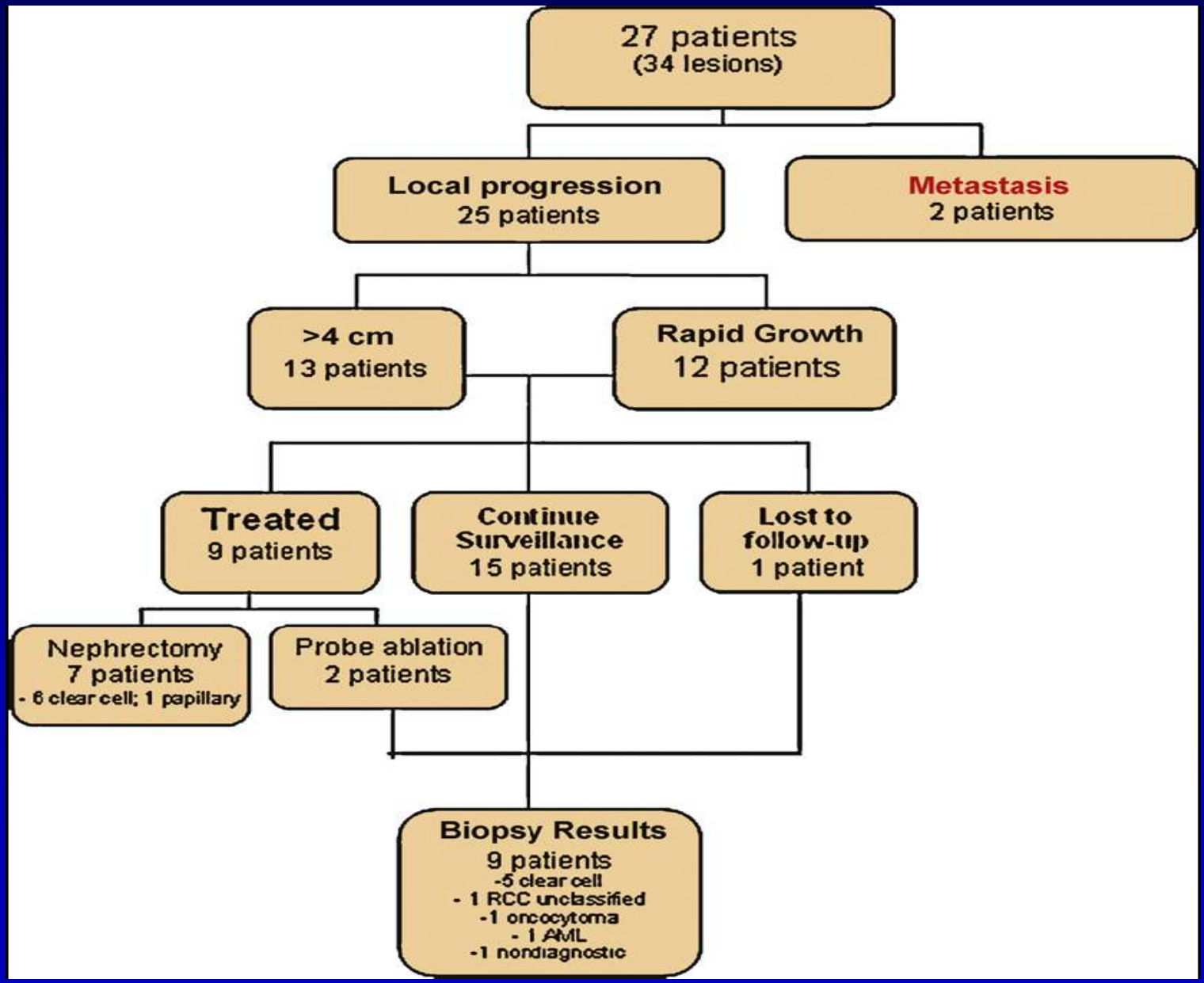
Mean size
2.1 cm (0.4-4)

Mean follow-up
28 mo (1-60)

Mean growth rate
0.13 cm/year



Active Surveillance of Small Renal Masses: Progression Patterns of Early Stage Kidney Cancer



European Active SurveillancE of Renal Cell Carcinoma Study

Multicentre prospective study of active surveillance of small, histologically confirmed RCCs

Standardized indications, follow-up, criteria for progression and to indicate delayed intervention.

A.Volpe, J.J. Patard, M. Staehler, W. Witjes, A. Tubaro, A. Patel, P. Mulders

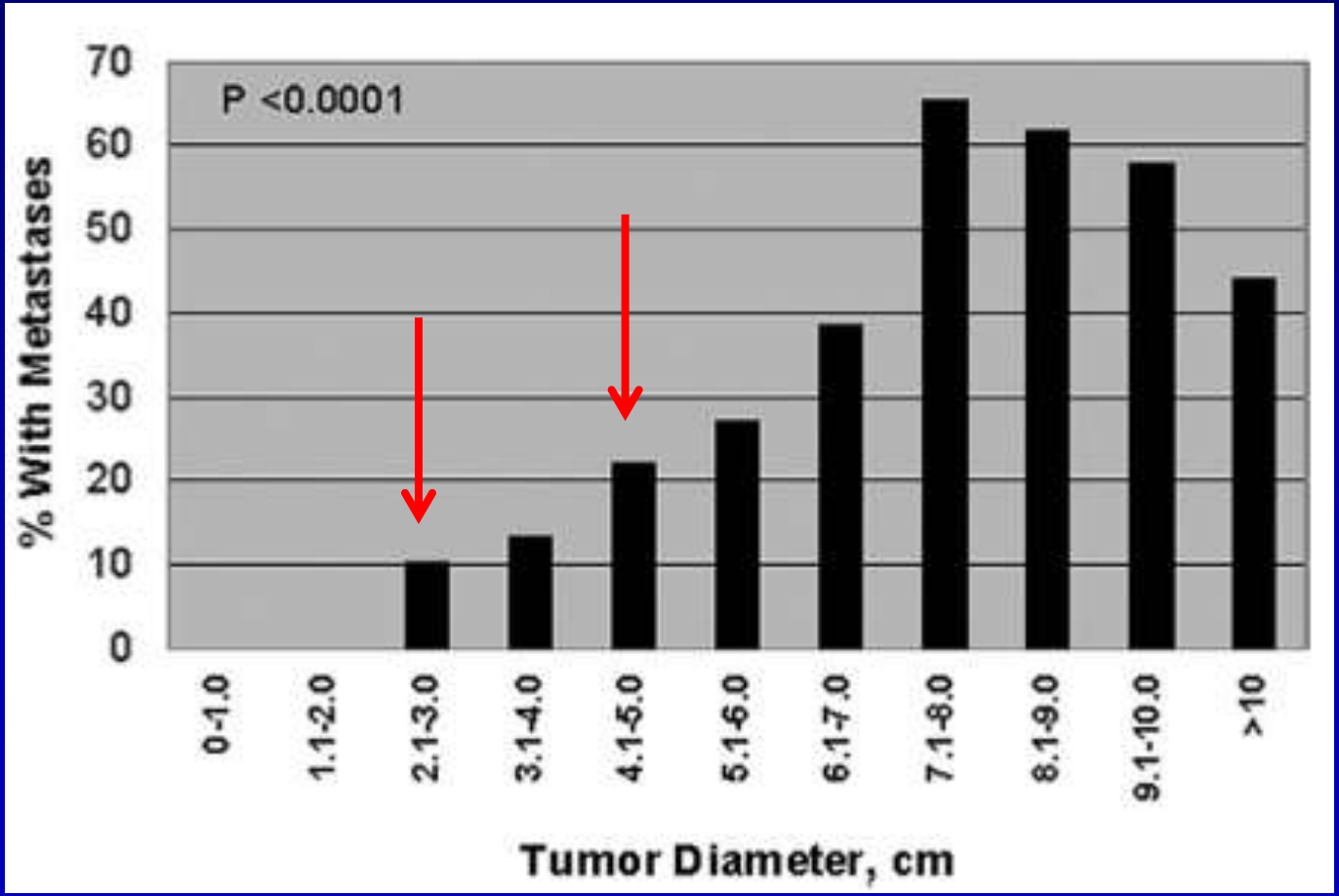
ACTIVE SURVEILLANCE STUDIES

AS Series	Patients/Lesions (n)	Mean Tumor Size (cm)	Mean Growth Rate (cm/y)	Mean Follow-Up (mo)	Delayed Surgery (n)	Progression to Metastasis (n)	Deaths (n)
Bosniak et al.,[19] 1995	37/40	1.73	0.36	39	26 (65)	0	3* (8)
Kassouf et al.,[20] 2004	24/26	3.27	0.09	32	4 (17)	0	0
Volpe et al.,[13] 2004	29/32	2.48	0.1	27.9	8 (27)	0	2* (6.9)
Wehle et al.,[16] 2004	29/29	1.83	0.12	32	6 (21)	0	2* (6.9)
Lamb et al.,[21] 2004	36/36	7.2	0.39	24	0	1 (2.8)	13* (36)
Chawla et al.,[18] 2006	49/61	2.6	0.2	36	20	1 (2)	NA
Kouba et al.,[22] 2007	43/46	2.92	0.7	35.8	13 (30)	0	4* (10)
Abou Youssif et al.,[5] 2007	35/44	2.2	0.21	47.6	8 (23)	2 (5.7)	9* (26)
Abouassaly et al.,[23] 2008	110/110	2.5	0.26	24	4 (4)	2 (1.8)	34* (31)
Crispen et al.,[8] 2009	154/173	2.45	0.28	31	68 (44)	2 (1.8)	NA
Rosales et al.,[17] 2010	212/223	2.8	0.34	35	11 (5.1)	4 (1.9)	1 (0.5)
Total	758/820	2.9	0.27	33.1	157 (20.7)	12 (1.6)	NA

Tumor Size Predicts Synchronous Metastatic Renal Cell Carcinoma: Implications for Surveillance of Small Renal Masses

David A. Kunkle,* Paul L. Crispen,* Tianyu Li* and Robert G. Uzzo†,‡

From the Departments of Urologic Oncology (DAK, PLC, RGU) and Biostatistics (TL), Fox Chase Cancer Center, and Temple University School of Medicine, Philadelphia, Pennsylvania



Small Renal Masses Progressing to Metastases Under Active Surveillance

A Systematic Review and Pooled Analysis

Marc C. Smaldone, MD[1]; Alexander Kutikov, MD[1]; Brian L. Egleston, MPP, PhD[2]; Daniel J. Canter, MD[1]; Rosalia Viterbo, MD[1]; David Y. T. Chen, MD[1]; Michael A. Jewett, MD[3]; Richard E. Greenberg, MD[1]; and Robert G. Uzzo, MD[1]

those masses progressed to metastasis. A pooled analysis revealed increased age (age 75.1 ± 9.1 years vs 66.6 ± 12.3 years; $P = .03$), an initial greatest tumor dimension (4.1 ± 2.1 cm vs 2.3 ± 1.3 cm; $P < .0001$), initial estimated tumor volume (66.3 ± 100.0 cm^3 vs 15.1 ± 60.3 cm^3; p = .0001), linear growth rate of (0.8 ± 0.65 cm per year vs 0.3 ± 0.4 cm per year; $P = .0001$), and a volumetric growth rate of 27.1 ± 24.9 cm^3 per year (vs 6.2 ± 27.5 cm^3 per year; $P < .0001$) in the progression cohort. **CONCLUSIONS:** A substantial proportion of small renal masses remained radiographically static after an initial period of active surveillance. Progression to metastases occurred in a small percentage of patients and generally was a late event. The current results indicated that, in patients who have competing

BENIGN SMALL RENAL MASSES

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DOI: 10.1097/01.ju.0000095475.12515.5e

SOLID RENAL TUMORS: AN ANALYSIS OF PATHOLOGICAL FEATURES RELATED TO TUMOR SIZE

IGOR FRANK, MICHAEL L. BLUTE, JOHN C. CHEVILLE, CHRISTINE M. LOHSE, AMY L. WEAVER AND HORST ZINCKE

From the Departments of Urology (IF, MLB, HZ), Pathology (JCC), and Health Sciences Research (CML, ALW), Mayo Medical School and Mayo Clinic, Rochester, Minnesota

Tumor Size (cm)	No. Benign (%)	No. RCC (%)
0.0–Less than 1.0	37 (46.3)	43 (53.8)
1.0–Less than 2.0	38 (22.4)	132 (77.7)
2.0–Less than 3.0	75 (22.0)	266 (78.0)
3.0–Less than 4.0	71 (19.9)	285 (80.1)
4.0–Less than 5.0	37 (9.9)	336 (90.1)
5.0–Less than 6.0	40 (13.0)	267 (87.0)
6.0–Less than 7.0	11 (4.5)	232 (95.5)
7.0 or Greater	67 (6.3)	998 (93.7)

Histopathological Characteristics of Localized Renal Cell Carcinoma Correlate With Tumor Size: A SEER Analysis

Jason Rothman, Brian Egleston, Yu-Ning Wong, Kevan Iffrig, Steve Lebovitch and Robert G. Uzzo*

From the Departments of Urologic Oncology (JR, SL, KI, RGU), Medical Oncology (YW) and Biostatistics (BE) of Fox Chase Cancer Center, Philadelphia, Pennsylvania

Tumor Size	Low Grade (%)	High Grade (%)	Totals
< 4 cm	7729 (86)	1250 (14)	8979
4-7 cm	5015 (79)	1361 (21)	6376
> 7 cm	2439 (70)	1024 (30)	3463

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DOI:10.1016/j.juro.2008.09.009

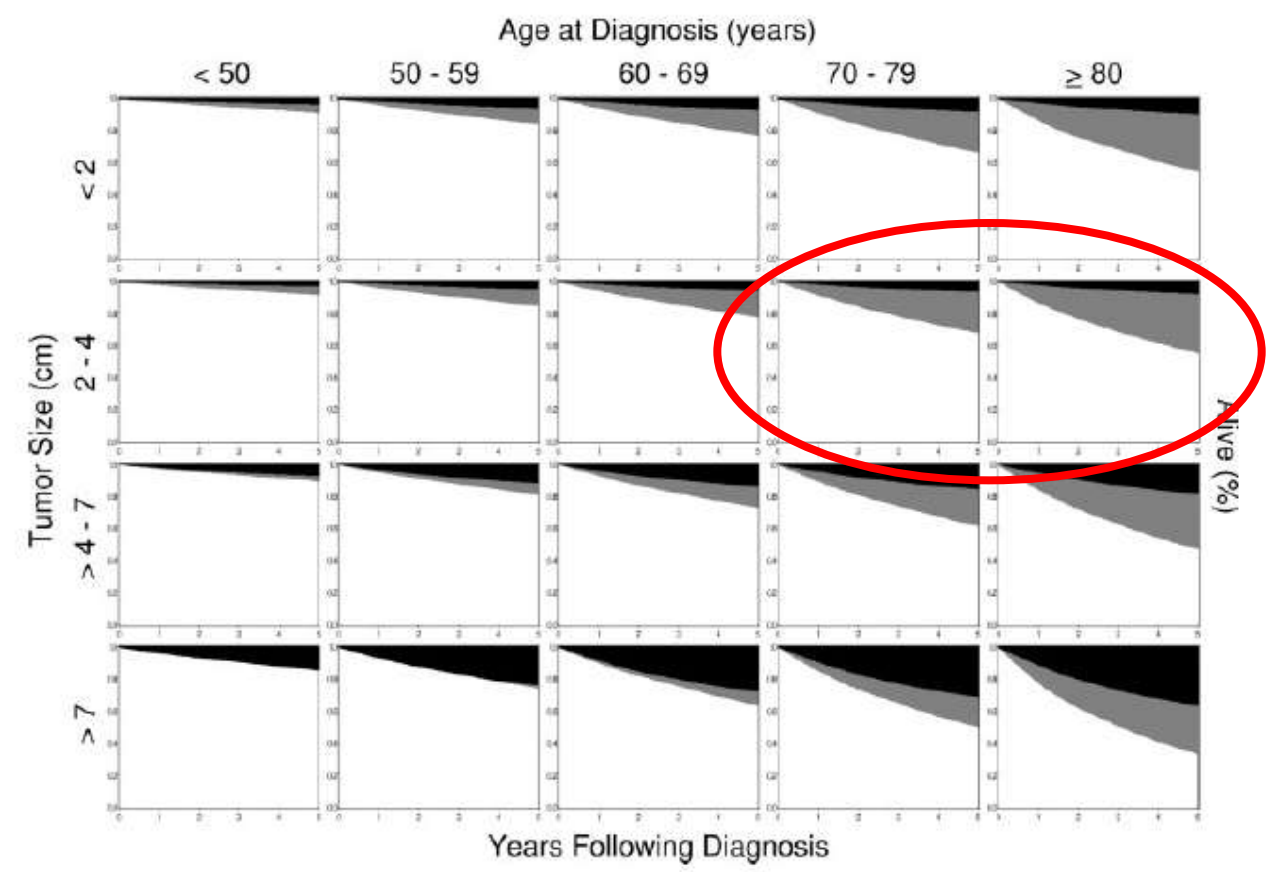
WHITMORE APHORISM

Is it possible to cure renal cancer
when it is necessary
and is it necessary to cure renal cancer
when it is possible?

Five-Year Survival After Surgical Treatment for Kidney Cancer

A Population-Based Competing Risk Analysis

John M. Hollingsworth, MD[1]
David C. Miller, MD, MPH[2]
Stephanie Daignault, MS[1]
Brent K. Hollenbeck, MD, MS[1]

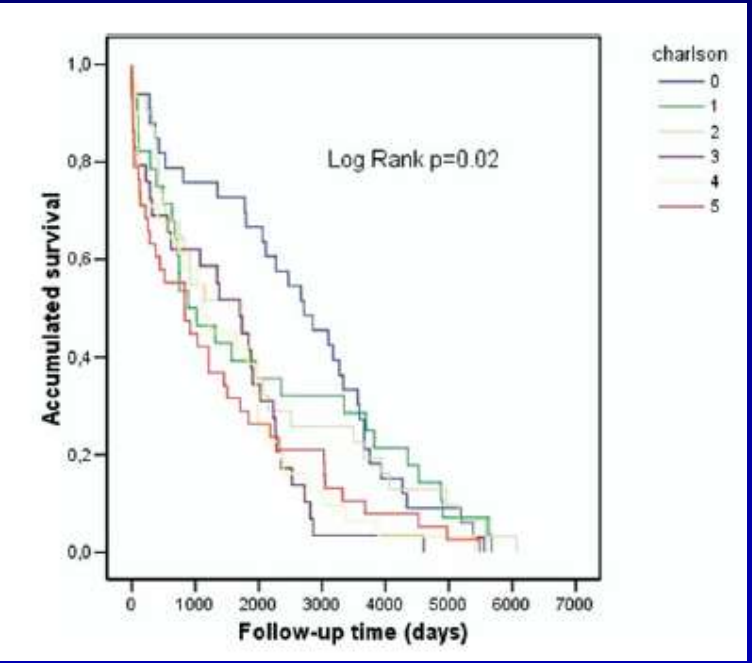


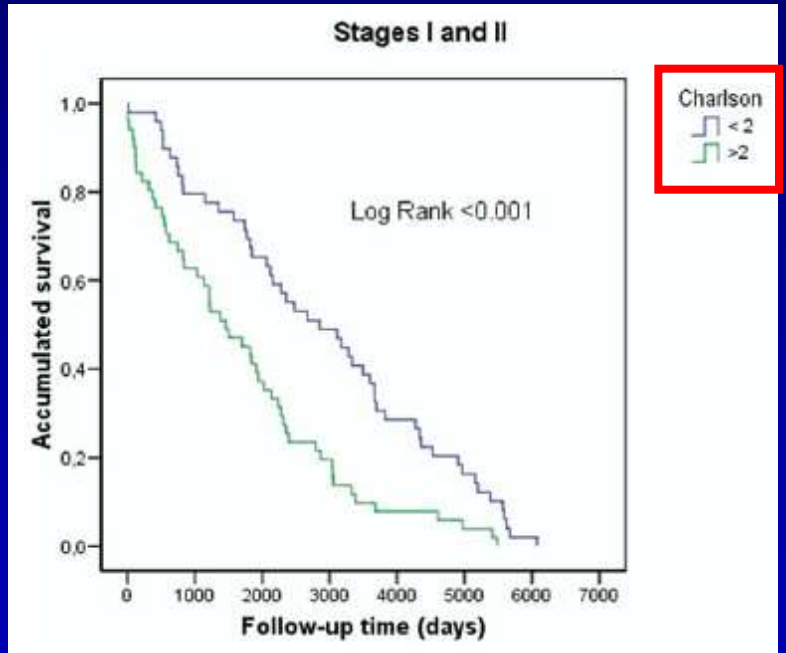
DOI 10.1002/cncr.22600
Published online 9 March 2007 in Wiley InterScience (www.interscience.wiley.com).

Survival Analysis of Clear Cell Renal Carcinoma According to the Charlson Comorbidity Index

Daniel Santos Arrontes,* María Jesús Fernández Aceñero, Jesús Isidoro García González, Manuel Martín Muñoz and Pedro Paniagua Andrés

From the Departments of Urology and Pathology (MJFA), Mostoles General Hospital, Madrid, Spain





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Active Treatment of Localized Renal Tumors May Not Impact Overall Survival in Patients Aged 75 Years or Older

Cancer July 1, 2010

Brian R. Lane, MD, PhD[1]; Robert Abouassaly, MD[1]; Tianming Gao, MS[2]; Christopher J. Weight, MD[1]; Adrian V. Hernandez, MD, PhD[2]; Benjamin T. Larson, MD[1]; Jihad H. Kaouk, MD[1]; Inderbir S. Gill, MD[1]; and Steven C. Campbell, MD, PhD[1]

537 clinical T1 renal tumors

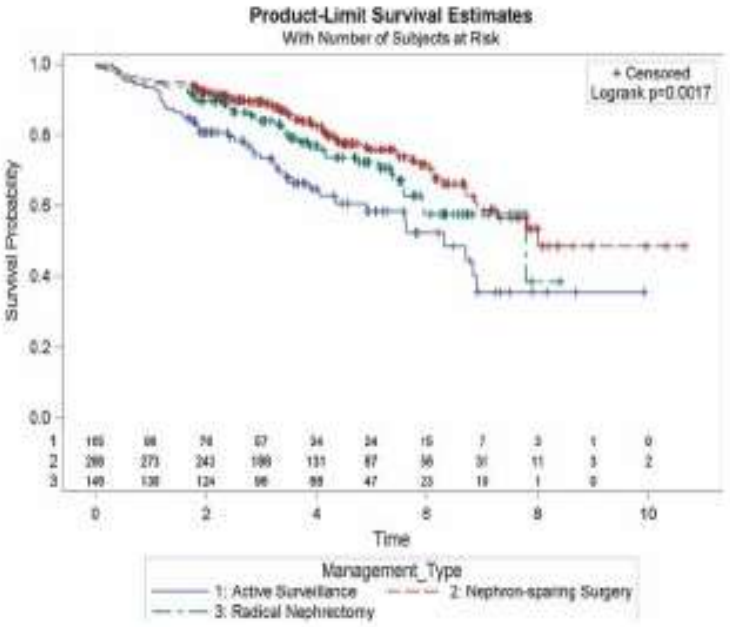

Table 2. Cox Proportional Hazards Model of All-Cause Mortality

	Univariate Analysis		Multivariate Analysis	
Variable	HR (95% CI)	*P*	HR (95% CI)	*P*
Management type		.0021		.22[a]
Radical nephrectomy	0.64 (0.42-0.99)		0.75 (0.45-1.26)	
Nephron-sparing intervention	0.50 (0.34-0.73)		0.67 (0.42-1.05)	
Active surveillance	1.00		1.00	
Age, per 5-y increase	1.36 (1.16-1.60)	.0002	1.34 (1.11-1.60)	.002
Men	0.94 (0.67-1.30)	.69	0.86 (0.61-1.22)	.40
Race		.25		.64
Caucasian	1.99 (0.63-6.24)		1.65 (0.52-5.26)	
African American	2.68 (0.78-9.22)		1.83 (0.52-6.50)	
Other	1.00		1.00	
Charlson comorbidity index, per 1-unit increase	1.35 (1.23-1.48)	<.0001	1.33 (1.20-1.48)	<.0001
Clinical size, per 1-cm increase	1.13 (1.02-1.25)	.02	1.09 (0.97-1.22)	.16
Solitary kidney	1.10 (0.70-1.76)	.68	1.16 (0.69-1.93)	.58
Bilateral renal involvement	0.86 (0.49-1.52)	.61	1.12 (0.61-2.04)	.72
Initial GFR, per 10 mL/min/1.73m^2 decrease	1.11 (1.03-1.20)	.0079	1.02 (0.93-1.11)	.68

HR indicates hazard ratio; CI, confidence interval; GFR, glomerular filtration rate.
[a] *P* values for multivariate pair-wise comparisons: radical nephrectomy versus surveillance, *P* = .28; nephron-sparing intervention versus surveillance, *P* = .08.

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Active surveillance of small renal masses offers short-term oncological efficacy equivalent to radical and partial nephrectomy

Nilay Patel, David Cranston, M. Zeeshan Akhtar, Caroline George, Andrew Jones, Aaron Leiblich, Andrew Protheroe and Mark Sullivan

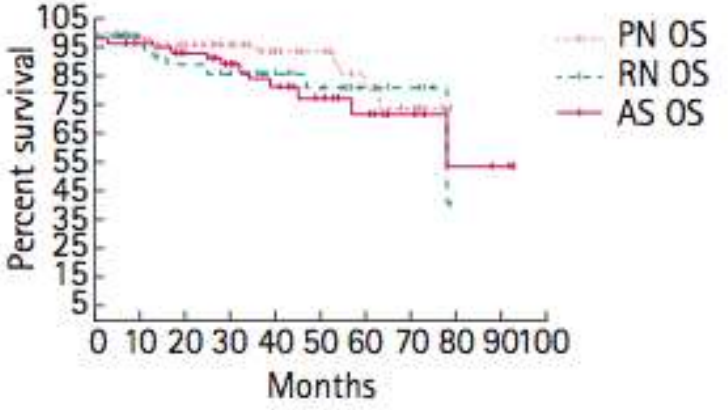
Department of Urology, Churchill Hospital, Headington, Oxford, UK

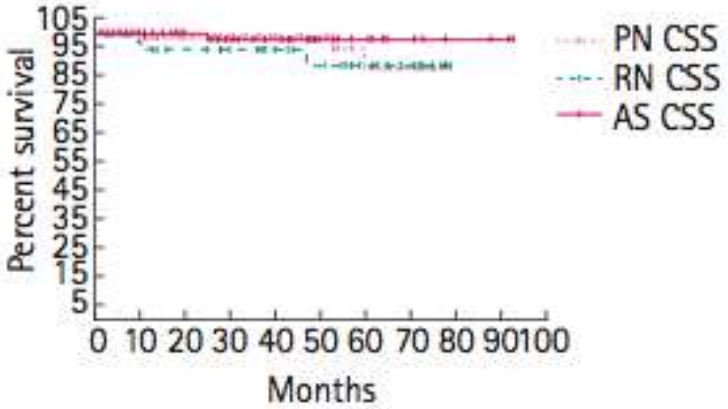
<u>234 T1a renal masses</u>

- 71 surveillance
- 41 radical nephrectomy
- 90 partial nephrectomy

Mean follow-up of 34 months

<u>No significant difference in OS and CSS between groups</u>





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A population-based comparison of survival after nephrectomy vs nonsurgical management for small renal masses

Laurent Zini*†, Paul Perrotte‡, Claudio Jeldres*, Umberto Capitanio*¶, Alain Duclos‡, Martine Jolivet-Tremblay‡, Philippe Arjane‡, François Péloquin‡, Daniel Pharand‡, Arnauld Villers†, Francesco Montorsi¶, Jean-Jacques Patard§ and Pierre I. Karakiewicz*‡

TABLE 2 Competing-risks rates of RCC-specific and other-cause mortality in all 10 291 patients and in the matched cohort of 1975, stratified according to nephrectomy vs NSM

Years after surveillance or nephrectomy other-cause	NSM, %		Nephrectomy, %	
	RCC-specific	other-cause	RCC-specific	other-cause
All				
1	6.1	28.4	0.9	3.3
2	8.1	38.7	1.6	6.3
5	12.6	57.4	3.22	16.2
Matched				
1	6.1	28.1	1.6	4.2
2	7.8	38.5	2.2	7.9
5	12.4	57.4	4.4	22.4

Management of Localized Kidney Cancer: Calculating Cancer-specific Mortality and Competing Risks of Death for Surgery and Nonsurgical Management

Maxine Sun [a,b,1,*], *Andreas Becker* [a,c,1], *Zhe Tian* [a], *Florian Roghmann* [a,d], *Firas Abdollah* [a,e], *Alexandre Larouche* [a], *Pierre I. Karakiewicz* [a,f], *Quoc-Dien Trinh* [a,f]

[a] *Cancer Prognostics and Health Outcomes Unit, University of Montreal Health Center, Montreal, Canada;* [b] *Department of Public Health, Faculty of Medicine, University of Montreal, Montreal, Canada;* [c] *Martini-Clinic, Prostate Cancer Center Hamburg-Eppendorf, Hamburg, Germany;* [d] *Department of Urology, Universitätsklinik Marienhospital, Herne, Germany;* [e] *Department of Urology, Vita-Salute San Raffaele University, Milan, Italy;* [f] *Department of Urology, University of Montreal Health Center, Montreal, Canada*

	PN vs NSM, HR (CI)	*p* value	RN vs NSM, HR (CI)	*p* value
Cancer-specific mortality				
Primary analyses				
Entire cohort, *n* = 10 595	0.45 (0.24–0.83)	0.01	0.58 (0.35–0.96)	0.03
T1a, *n* = 6443	0.41 (0.18–0.91)	0.03	0.47 (0.23–0.98)	0.04
Subanalyses				
≥75 yr, *n* = 4830	0.48 (0.20–1.14)	0.1	0.57 (0.32–1.03)	0.1
T1a and ≥75 yr, *n* = 2873	0.39 (0.13–1.08)	0.1	0.40 (0.16–1.01)	0.1
Other-cause mortality				
Primary analyses				
Entire cohort, *n* = 10 595	0.51 (0.37–0.69)	<0.001	0.59 (0.45–0.79)	0.03
T1a, *n* = 6443	0.48 (0.32–0.70)	<0.001	0.61 (0.43–0.87)	0.006
Subanalyses				
≥75 yr, *n* = 4830	0.55 (0.36–0.83)	0.004	0.61 (0.42–0.89)	0.01
T1a and ≥75 yr, *n* = 2873	0.47 (0.28–0.77)	0.003	0.56 (0.35–0.89)	0.02

Guidelines on Renal Cell Carcinoma

B. Ljungberg (chair), K. Bensalah, A. Bex (vice-chair), S. Canfield, S. Dabestani, F. Hofmann, M. Hora, M.A. Kuczyk, T. Lam, L. Marconi, A.S. Merseburger, P.F.A. Mulders, T. Powles, M. Staehler, A. Volpe

Recommendations

In the elderly and/or comorbid patients with small renal masses and limited life expectancy, active surveillance, radiofrequency ablation and cryoablation can be offered.	C

Guideline for Management of the Clinical T1 Renal Mass

Steven C. Campbell,*,† Andrew C. Novick,‡ Arie Belldegrun,§ Michael L. Blute, George K. Chow, Ithaar H. Derweesh, Martha M. Faraday, Jihad H. Kaouk,¶ Raymond J. Leveillee,‖ Surena F. Matin,** Paul Russo†† and Robert G. Uzzo‡‡

From the American Urological Association Education and Research, Inc., Linthicum, Maryland

- Active surveillance is a reasonable option for the management of localized renal masses that should be discussed with all patients and should be a primary consideration for patients with decreased life expectancy or extensive comorbidities that would make them high risk for intervention[26,29] For patients who are

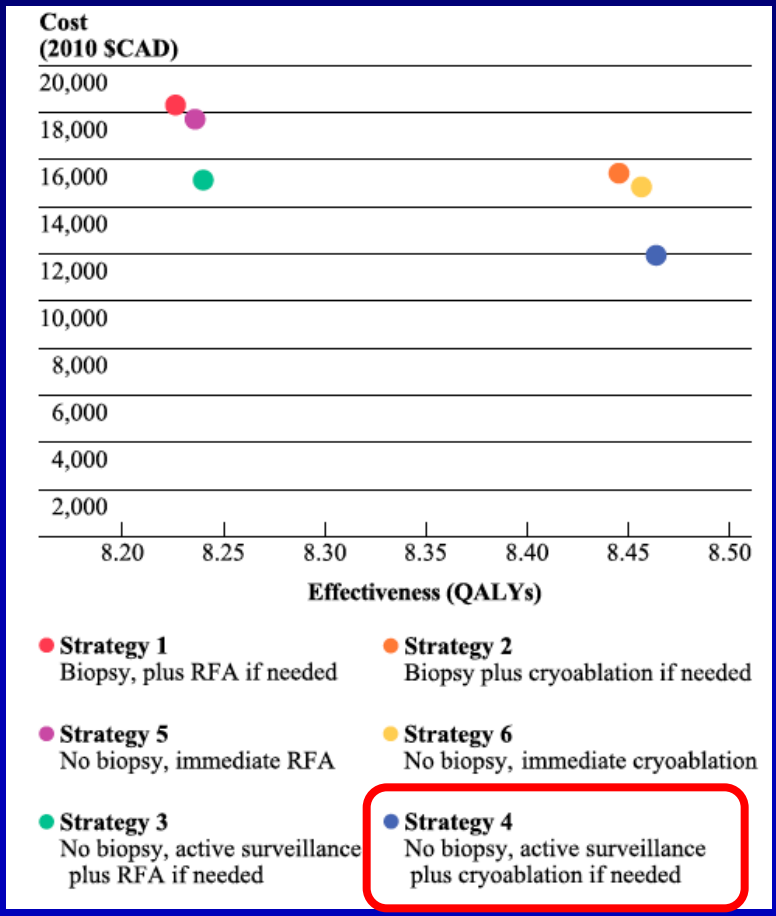
NCCN Clinical Practice Guidelines in Oncology™

Kidney Cancer

Patients in satisfactory medical condition should undergo surgical excision of stage I through III tumors. However, a small set of elderly or infirm patients with small tumors may be offered surveillance alone or energy ablative techniques, such as radiofrequency ablation or cryoablation (KID-A)

Active Surveillance, Radiofrequency Ablation, or Cryoablation for the Nonsurgical Management of a Small Renal Mass: A Cost-Utility Analysis

Sasha N. Bhan, MD, MBA[1], Stephen E. Pautler, MD, FRCSC[2], Bobby Shayegan, MD, FRCSC[3], Maurice D. Voss, MD, MBChB, FRACR, FRCPC[4], Ron A. Goeree, MA[5,6], and John J. You, MD, MSc, FRCPC[7]



Results. The dominant strategy (most effective and least costly) was active surveillance with subsequent cryoablation if needed. On a quality-adjusted and discounted basis, immediate cryoablation resulted in a similar life expectancy (3 days fewer) but cost $3,010 more. This result was sensi-

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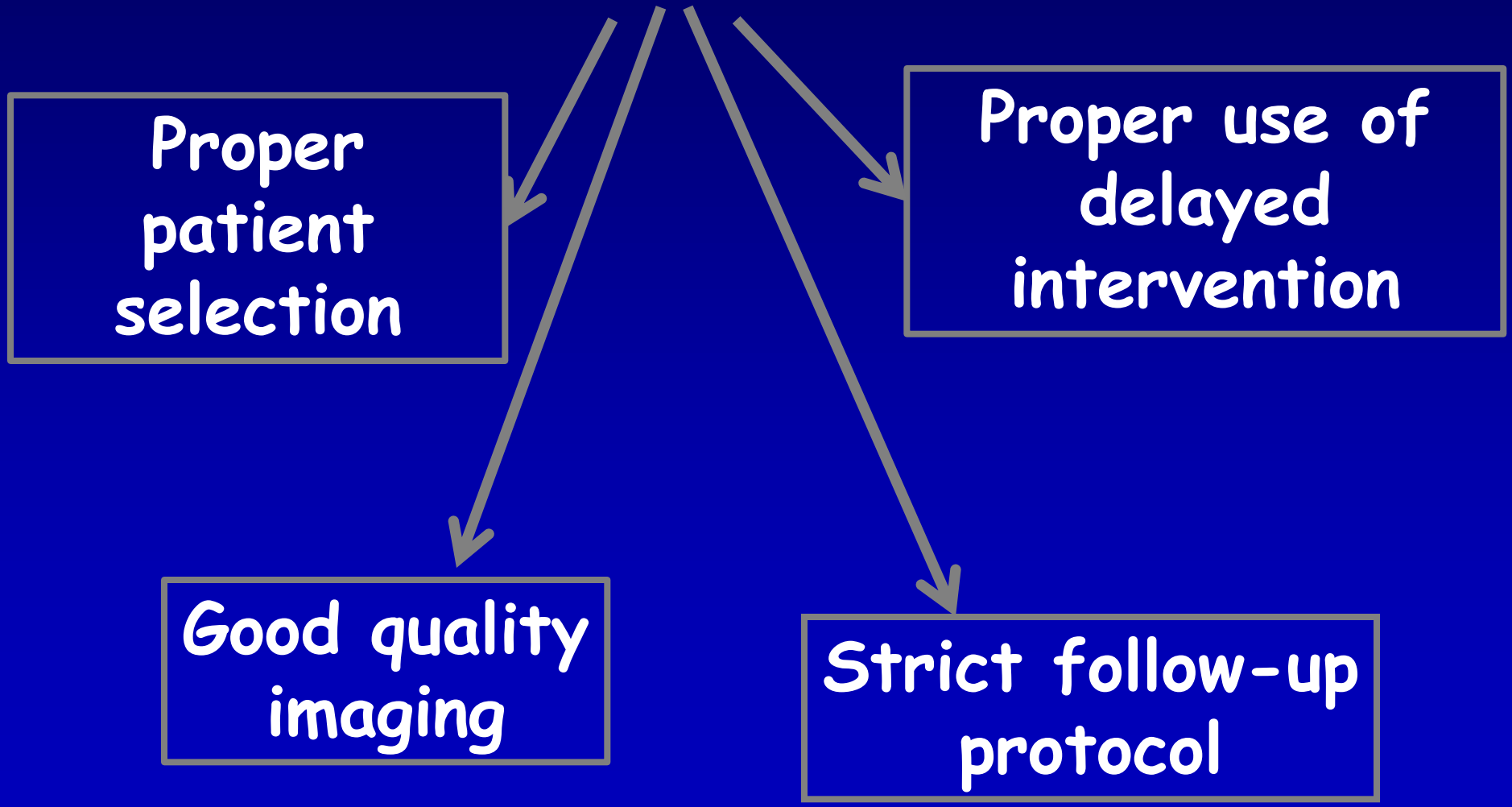
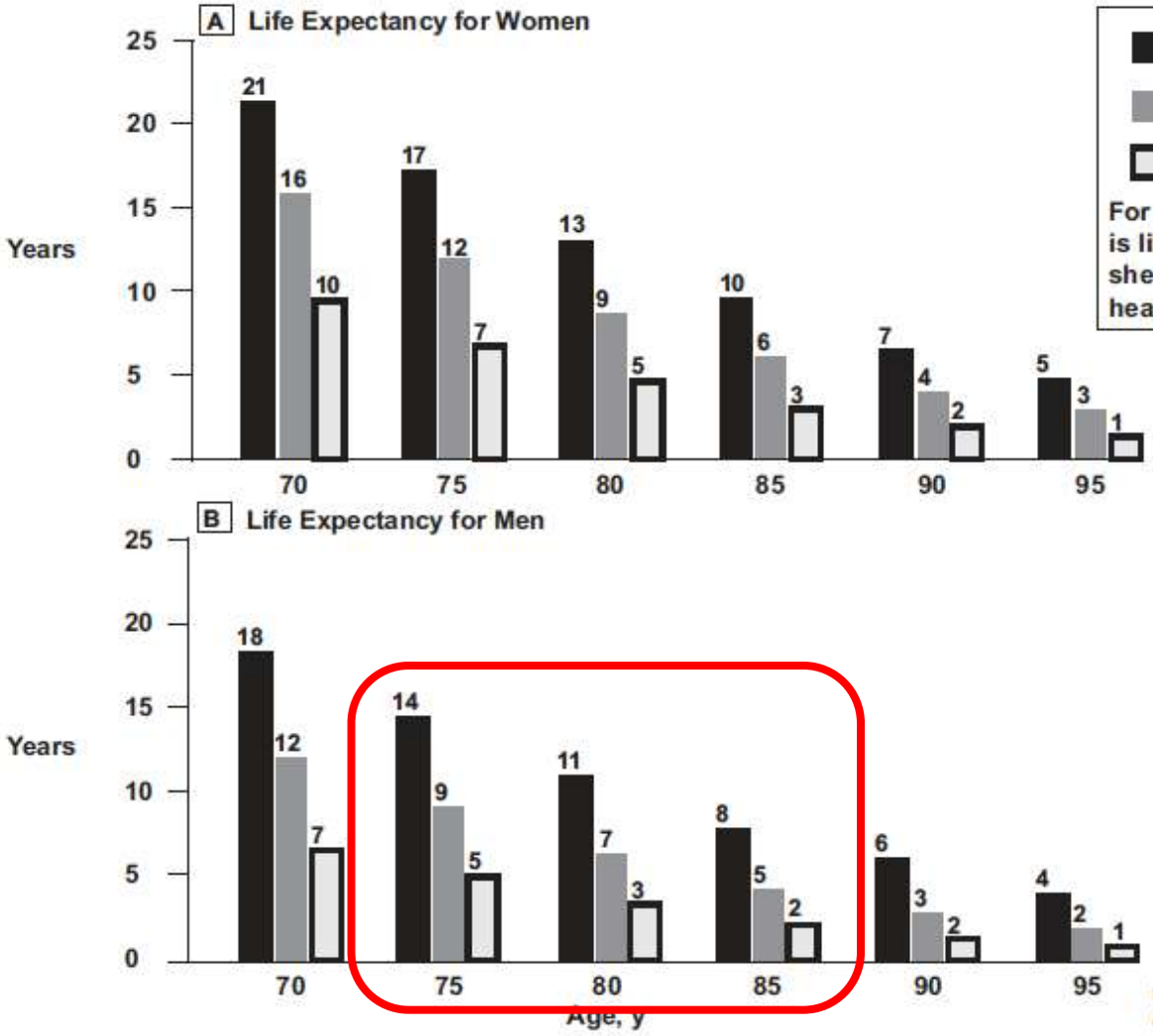
What is important to optimize the oncological safety of active surveillance?



UPPER, MIDDLE, AND LOWER QUARTILES OF LIFE EXPECTANCY FOR WOMEN AND MEN AT SELECTED AGES



Top 25th Percentile

50th Percentile

Lowest 25th Percentile

For example, a 75 year old woman in average health is likely to live 12 years; if she is in excellent health, she is likely to live at least 17 years; if she is in poor health, she is likely to live less than 7 years.

Reprinted and adapted with permission from Walter LC, Covinsky KE. Cancer screening in elderly patients. JAMA 2001;285:2750-2756.

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Can we avoid surgery in elderly patients with renal masses by using the Charlson comorbidity index?

Kevin M. O'Connor, Niall Davis, Gerry M. Lennon, David M. Quinlan and David W. Mulvin

Department of Urology, St. Vincent's University Hospital, Dublin, Ireland

Accepted for publication 25 September 2008

Elderly patients with small renal tumours (T1a) and comorbidity scores of ≥3 were more likely to die as a result of their comorbidities rather than the renal tumour.

Charlson score as a single pertinent criterion to select candidates for active surveillance among patients with small renal masses

François Audenet, Marie Audouin, Sarah J. Drouin, Eva Comperat, Pierre Mozer, Emmanuel Chartier-Kastler, Arnaud Méjean, Olivier Cussenot, Shahrokh F. Shariat, Morgan Rouprêt

CONCLUSIONS: The majority of patients with SRMs who would have been eligible for AS had no recurrence after initial tumour removal. In these patients, a CCI > 4 appeared to be a pertinent criterion to identify those patients less likely to benefit from immediate surgery.

World J Urol 2013

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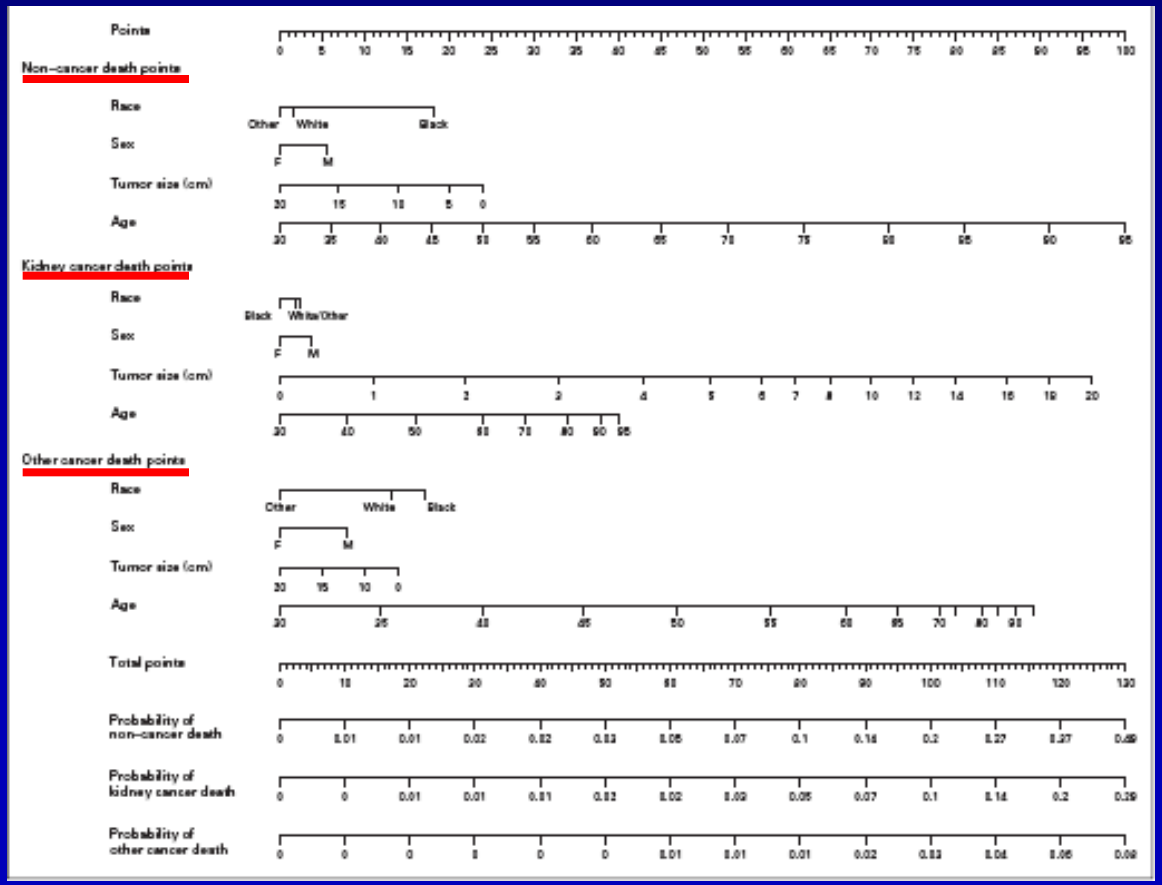
ORIGINAL REPORT

J Clin Oncol 28:311-317. © 2009 by American Society of Clinical Oncology

Evaluating Overall Survival and Competing Risks of Death in Patients With Localized Renal Cell Carcinoma Using a Comprehensive Nomogram

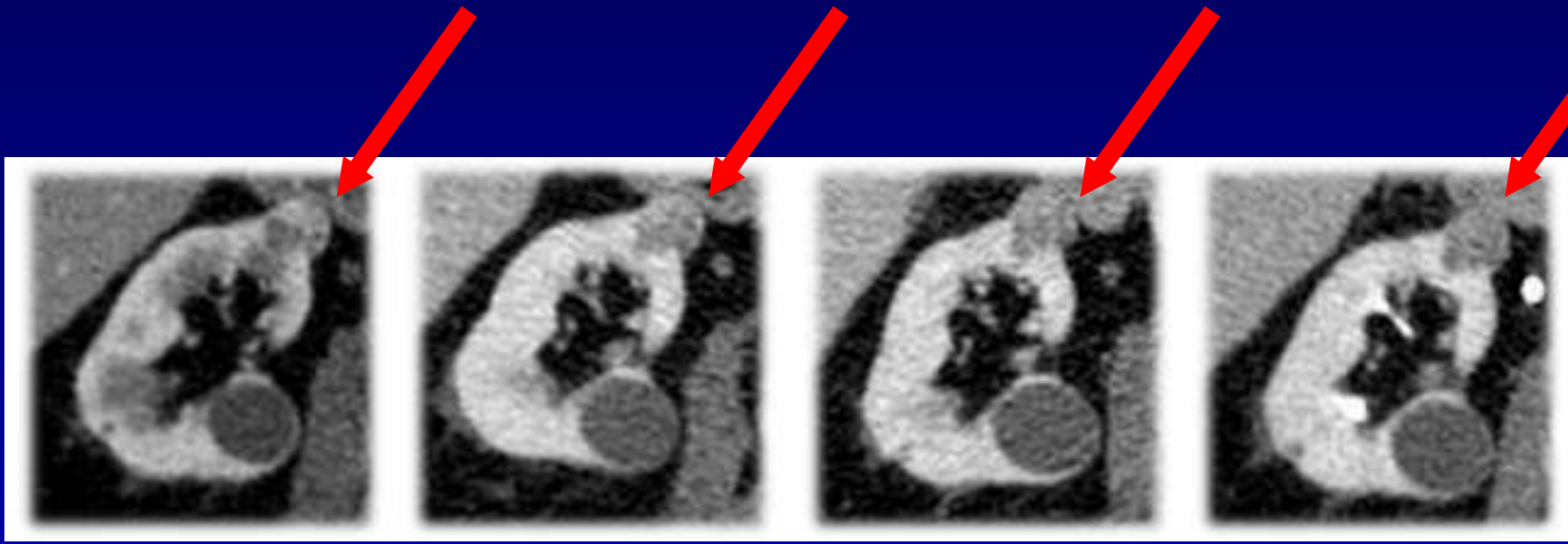
Alexander Kutikov, Brian L. Egleston, Yu-Ning Wong, and Robert G. Uzzo



80 yo white male with a 1.6 cm ccRCC has:

20% 5y risk of non RCC death
16% 5y risk of other cancer death
2% 5y risk of RCC death

CLINICAL CASE 1



Jan 2010 Jun 2010 Jun 2011 Jan 2012

April 2012

Deceased for

metastatic prostate cancer

DELAYED INTERVENTION

Mainly based on growth kinetics

Growth rate - tumor doubling time <12 months

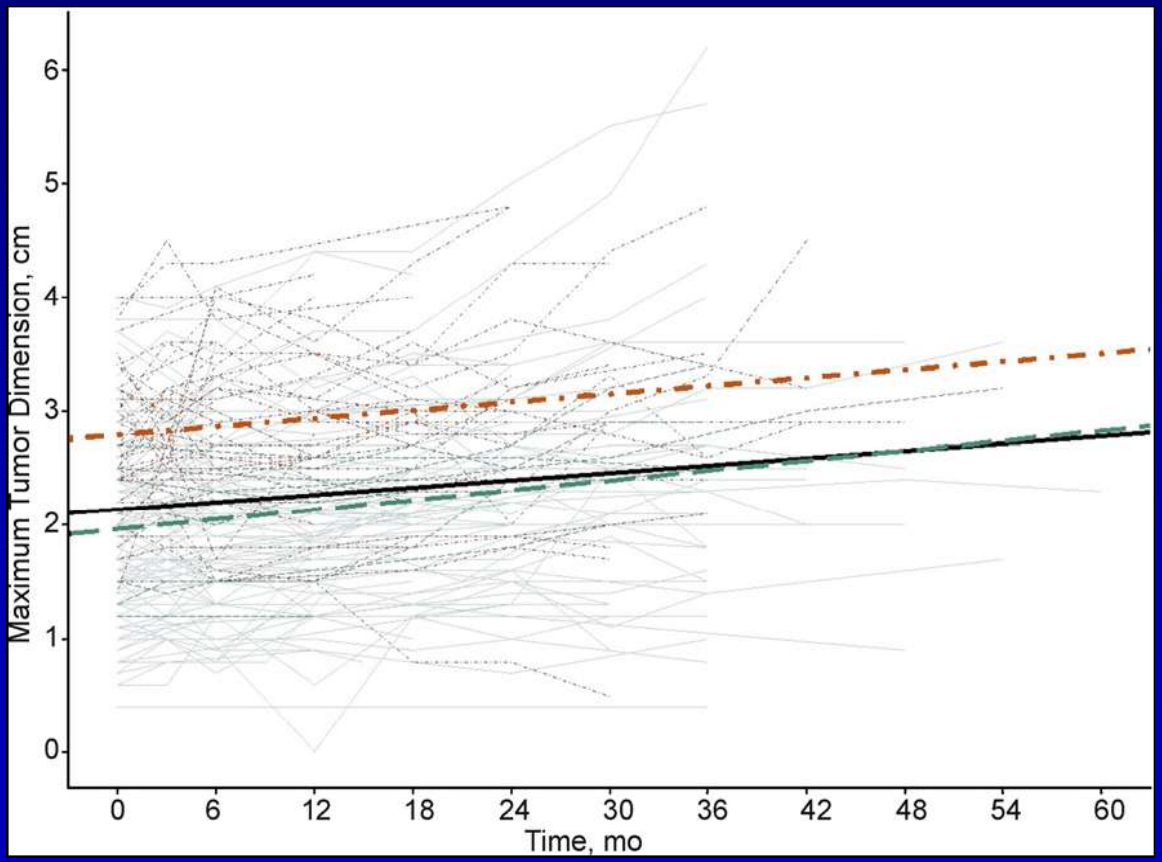
- growth rate > 0.5 cm/year

Size threshold - 3-4 cm

Cut-offs have not been standardized

Active Surveillance of Small Renal Masses: Progression Patterns of Early Stage Kidney Cancer

Michael A.S. Jewett[a,*], *Kamal Mattar*[a], *Joan Basiuk*[a], *Christopher G. Morash*[b], *Stephen E. Pautler*[c], *D. Robert Siemens*[d], *Simon Tanguay*[e], *Ricardo A. Rendon*[f], *Martin E. Gleave*[g], *Darrel E. Drachenberg*[h], *Raymond Chow*[i], *Hannah Chung*[a], *Joseph L. Chin*[j], *Neil E. Fleshner*[a], *Andrew J. Evans*[k], *Brenda L. Gallie*[l], *Masoom A. Haider*[m], *John R. Kachura*[m], *Ghada Kurban*[a], *Kimberly Fernandes*[n], *Antonio Finelli*[a]



Tumor growth rate alone cannot reliably predict the malignancy of a SRM under surveillance

Enhancing Renal Masses With Zero Net Growth During Active Surveillance

David A. Kunkle, Paul L. Crispen, David Y. T. Chen, Richard E. Greenberg and Robert G. Uzzo*

From the Department of Urologic Oncology, Fox Chase Cancer Center, Temple University School of Medicine, Philadelphia, Pennsylvania

TABLE 2. *Enhancing renal masses under active radiographic surveillance*

Characteristic	Group 1	Group 2	p Value
No. lesions (%)	35 (33)	71 (67)	—
Median age at diagnosis (range)	71 (59–85)	73 (35–87)	0.96
No. men (%)	23 (66)	52 (73)	0.50
Median cm initial lesion size (range)	2.0 (1.0–10.0)	2.0 (0.0–12.0)	0.41
Median mos followup (range)	25 (12–72)	30 (12–117)	0.066
Median cm/yr growth (range)	0.0 (−1.4–0.0)	0.31 (0.02–1.6)	<0.00001
Median No. imaging studies (range)	5 (3–12)	6 (3–23)	0.76
No. cystic lesions (%)	4 (11)	9 (13)	1.00
No. detected incidentally (%)	32 (91)	60 (85)	0.38
No. surgical intervention (%)	6 (17)	36 (51)	0.001
No. malignant pathology/total No. (%)	5/6 (83)	32/36 (89)	0.56
No. metastasis (%)	0	1 (1.4)	1.00

We need serum, urine or tissue markers of tumor aggressiveness

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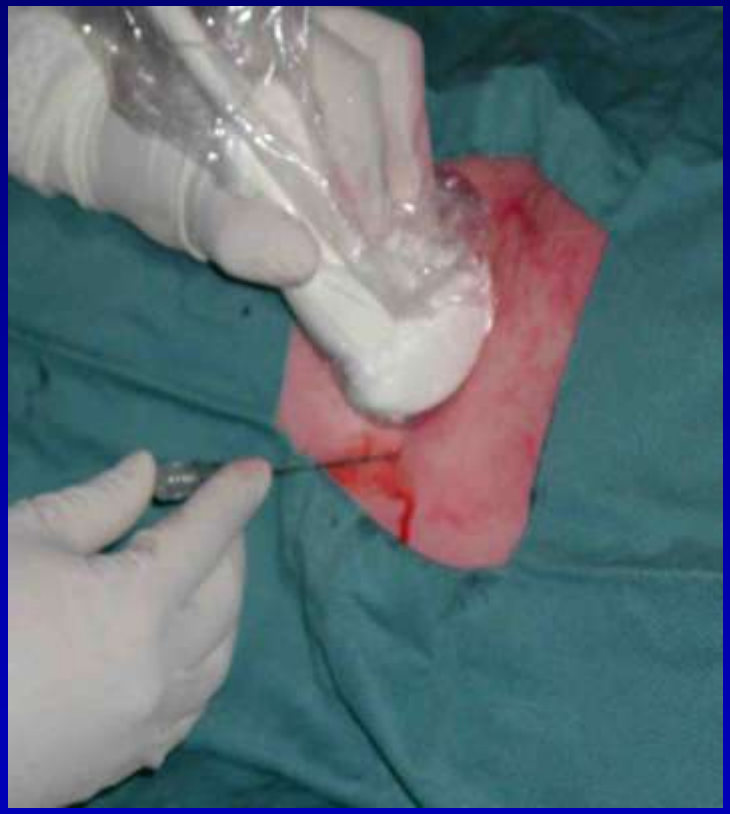
Vol. 177, 849-854, March 2007
Printed in U.S.A.
DOI:10.1016/j.juro.2006.10.073

ACTIVE SURVEILLANCE SMALL RENAL MASSES

We need better histological definition by percutaneous needle biopsy

- Malignancy
- Grade



Are Small Renal Tumors Harmless? Analysis of Histopathological Features According to Tumors 4 Cm or Less in Diameter

Mesut Remzi,*,† Mehmet Özsoy,† Hans-Christoph Klingler,† Martin Susani,† Matthias Waldert,† Christian Seitz,† Joerg Schmidbauer† and Michael Marberger‡

From the Departments of Urology (MR, MÖ, HCK, MW, CS, JS, MM) and Pathology (MS), Medical University of Vienna, Vienna, Austria

Tumor Size (cm)	N	Grade III-IV	pT3a	Mets
0-3.0	129	4.7%	10.9%	2.4%
3.1-4.0	98	25.5%	35.7%	8.4%

0022-5347/06/1763-0896/0
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Guidelines on Renal Cell Carcinoma

B. Ljungberg (chair), K. Bensalah, A. Bex (vice-chair), S. Canfield, S. Dabestani, F. Hofmann, M. Hora, M.A. Kuczyk, T. Lam, L. Marconi, A.S. Merseburger, P.F.A. Mulders, T. Powles, M. Staehler, A. Volpe

Renal tumour biopsy is recommended before ablative therapy and systemic therapy without previous pathology.	C
Percutaneous biopsy is recommended in patients in whom active surveillance is pursued.	C
Percutaneous renal tumour biopsy should be obtained with a coaxial technique.	C

Follow-up for Clinically Localized Renal Neoplasms: AUA Guideline

Sherri M. Donat, Mireya Diaz, Jay Todd Bishoff, Jonathan A. Coleman, Philipp Dahm, Ithaar H. Derweesh, S. Duke Herrell III, Susan Hilton, Eric Jonasch, Daniel W. Lin, Victor E. Reuter and Sam S. Chang

16. Percutaneous biopsy may be considered in patients planning to undergo active surveillance. (*Option; Evidence Strength: Grade C*)

Illness Uncertainty and Quality of Life of Patients with Small Renal Tumors Undergoing Watchful Waiting: A 2-year Prospective Study

Patricia A. Parker[a,*], *Frances Alba*[b,†], *Bryan Fellman*[c], *Diana L. Urbauer*[c], *Yisheng Li*[c], *Jose A. Karam*[b], *Nizar Tannir*[d], *Eric Jonasch*[d], *Christopher G. Wood*[b], *Surena F. Matin*[b]

[a] *Department of Behavioral Science, The University of Texas MD Anderson Cancer Center, Houston, TX, USA;* [b] *Department of Urology, The University of Texas MD Anderson Cancer Center, Houston, TX, USA;* [c] *Department of Biostatistics, The University of Texas MD Anderson Cancer Center, Houston, TX, USA;* [d] *Department of Medical Oncology, The University of Texas MD Anderson Cancer Center, Houston, TX, USA*

Conclusions: This study is among the first to prospectively examine the QOL of patients with renal tumors undergoing WW and the psychosocial factors that influence QOL. Illness uncertainty predicted general QOL, cancer-specific QOL, and distress. These factors could be targeted in psychosocial interventions to improve the QOL of patients on WW.

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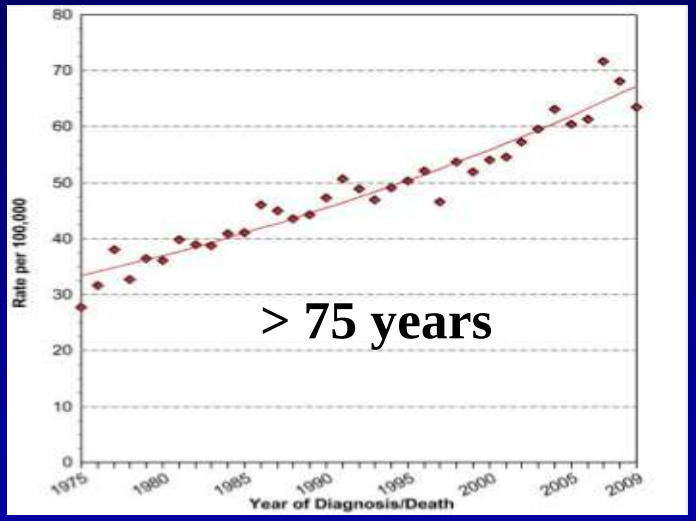
QUALITY OF LIFE ON ACTIVE SURVEILLANCE FOR A SMALL RENAL MASSES VERSUS IMMEDIATE INTERVENTION: INTERIM ANALYSIS OF THE DISSRM (DELAYED INTERVENTION AND SURVEILLANCE FOR SMALL RENAL MASSES) REGISTRY

Phillip Pierorazio, Baltimore, MD; James McKiernan, New York, NY; Mohamad Allaf, Baltimore, MD*

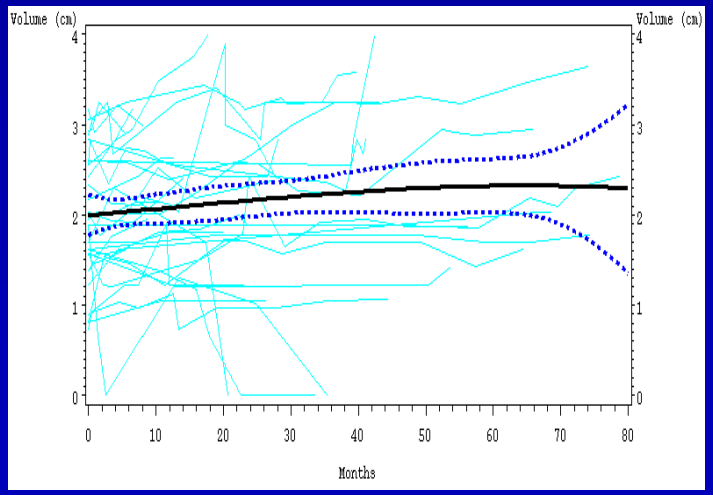
		Immediate Intervention					
	N	SF12		MCS		PCS	
Enrollment	204	100.7	(47.9-117.4)	52.8	(11.4-69.7)	49.5	(20.1-64.8)
6 months	143	105.7	(50.7-117.4)	55.5	(13.5-69.3)	50.2	(21.7-63.5)
1 year	122	106	(51.5-117.4)	56.3	(17.5-66.4)	50.8	(21.4-64.2)
2 year	78	104.25	(54.8-117.4)	56.45	(20.8-66.9)	48.2	(20.8-61.7)
3 year	30	102.4	(55.8-114.7)	55.95	(24.2-63.8)	47.2	(18.7-58.9)
		Active Surveillance					
	N	SF12		MCS		PCS	
Enrollment	70	94.4	(47.9-114.7)	52.4	(22.8-66.5)	42.8	(20.5-58.3)
6 months	55	95.8	(62.7-116)	55.9	(37.4-65.5)	39.1	(12.9-57.9)
1 year	39	97.2	(65-114.7)	55.1	(22.6-64.8)	42	(21.7-57.2)
2 year	27	95.4	(71.2-114.7)	53.8	(33.4-62.9)	42.2	(22.5-57.9)
3 year	14	98.9	(66.1-107.3)	58.65	(34.7-68.4)	40.9	(16.5-57.5)

ROLE OF ACTIVE SURVEILLANCE OF SMALL RENAL MASSES

The diagnosis of renal masses is increasing especially in the elderly population



A significant number of cT1 renal masses are benign tumors or RCCs with clinically indolent behaviour



ROLE OF ACTIVE SURVEILLANCE OF SMALL RENAL MASSES

Non surgical management is a reasonable option in elderly and comorbid patients with limited life expectancy and increased perioperative risk

Proper active surveillance strategies minimize the risk of metastasis and disease specific mortality when expectant management is recommended

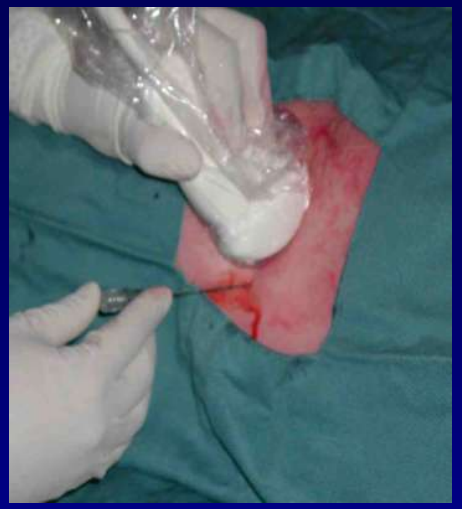
- patient selection
- delayed intervention in case of progression

ROLE OF ACTIVE SURVEILLANCE OF SMALL RENAL MASSES

Active surveillance for 3-4 cm renal masses should be reserved to patients with high competing risk mortality with recognition by physician and patients of the increased risk of progression.

Expectant management for larger renal masses reserved to patients with absolute contraindications or refusal of surgery with follow-up imaging required only in case of symptomatic progression

Percutaneous biopsy is useful for selection of patients for active surveillance -> malignancy, grade, molecular and genetic markers



Long term results of prospective trials of active surveillance on biopsy proven tumors are awaited to further define the role of this approach in the management of renal tumors