

Laparoscopic Cryoablation of Small Renal Tumours – Can PADUA Score Predict Treatment Outcome?

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Anatomisk klassifikation

Preoperative Aspects and Dimensions Used for an Anatomical (PADUA) Classification of Renal Tumours in Patients who are Candidates for Nephron-Sparing Surgery

Vincenzo Ficarra, Giacomo Novara, Silvia Secco, Macchi, Andrea Porzionato, Raffaele De Caro, Walter Artibani



The R.E.N.A.L. Nephrometry Score: A Comprehensive Standardized System for Quantitating Renal Tumor Size, Location and Depth

Alexander Kutikov and Robert G. Uzzo

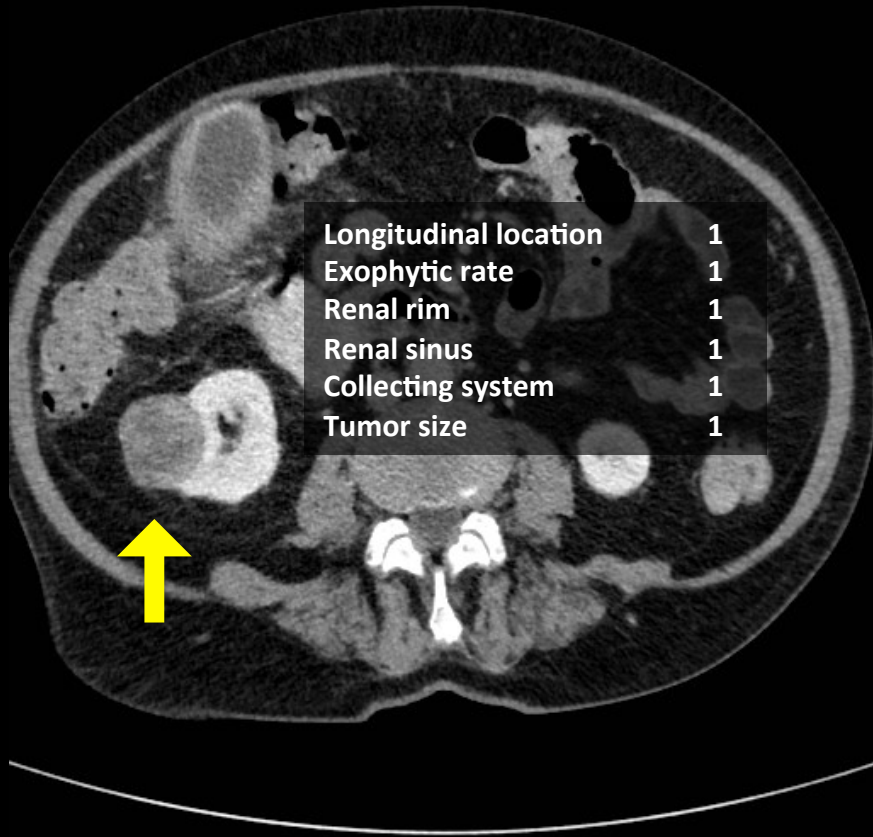


PADUA klassifikation

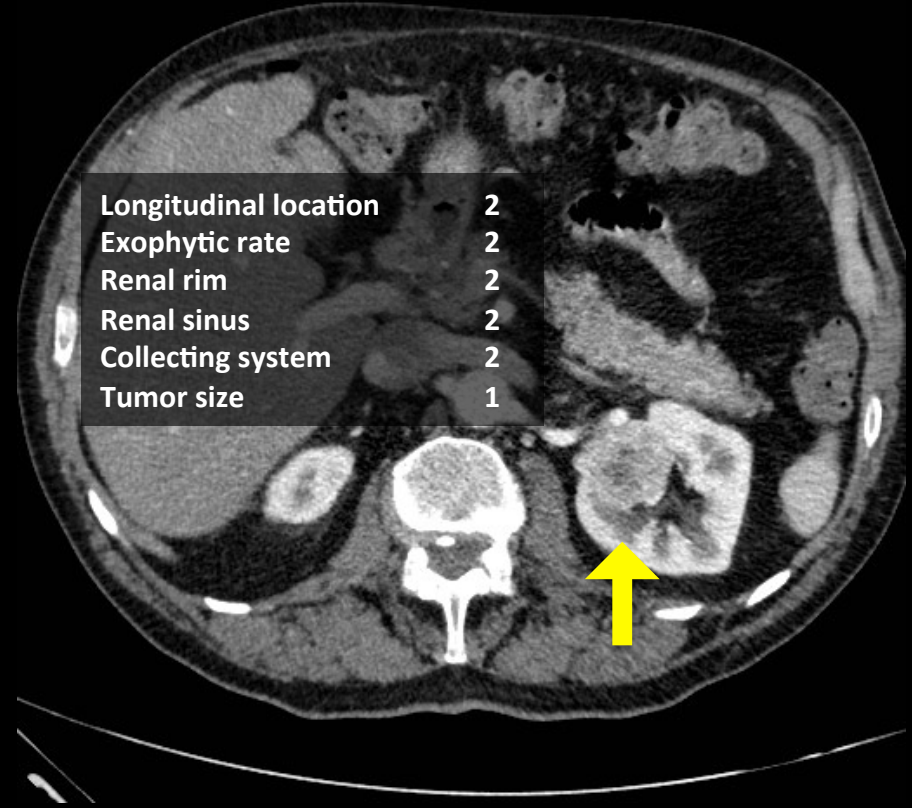
	Score
Longitudinal location	
<i>superior/inferior</i>	1
<i>middle</i>	2
Exophytic rate	
<i>> 50%</i>	1
<i>< 50%</i>	2
<i>endophytic</i>	3
Renal rim	
<i>lateral</i>	1
<i>medial</i>	2
Renal sinus	
<i>not involved</i>	1
<i>involved</i>	2
Collecting system	
<i>not involved</i>	1
<i>involved</i>	2
Tumor size	
<i>< 4</i>	1
<i>4.1-7</i>	2
<i>> 7</i>	3

	Score
Lav PADUA score	6 – 7
Intermediær PADUA score	8 - 9
Høj PADUA score	> 10

Begge 33 mm, ccRCC, low grade



PADUA Score = 6



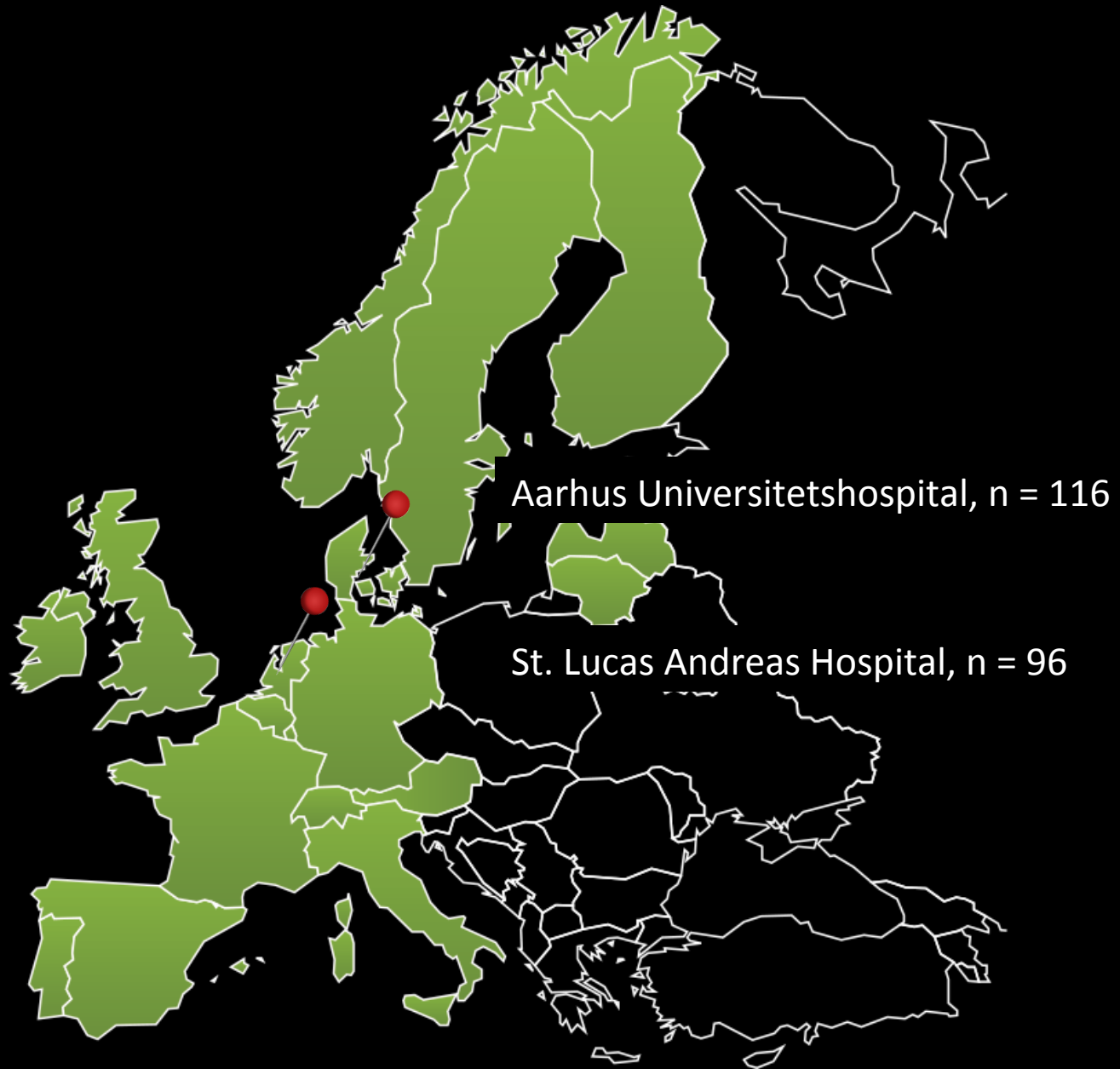
PADUA Score = 11

Arbejdshypotese

- *Måske er det vanskelig at opnå optimal nåleplacering/tumordække ved anatomisk komplicerede tumorer ?*
- *Måske modvirker blodcirkulationen nedfrysningen af centrale/endofytiske tumorer (heatpump effect) ?*

**Risikoen for behandlingsvigt ved laparoskopisk
cryoablation stiger i takt med en tiltagende
PADUA score**





Patient & tumor karakteristika

		Lav PADUA (6-7)	Intermediær PADUA (8-9)	Høj PADUA (10-14)	p-værdi
Antal patienter	212	70 (33%)	86 (41%)	56 (26%)	
Alder (år)	65 (64.3-66.5)	63	65	68	0.04
BMI	27.4 (26.7-28.0)				n.s.
CCI	2.9 (2.6-3.2)				n.s.
ECOG >2	37 (31.4%)				n.s.
ASA > 3	67 (31.5%)				n.s.
Tumor størrelse (mm)	28.2 (27.1-29.3)	26.5	26.5	33.1	< 0.01
Indlæggelse (dage)	2.2 (1.9-2.4)	1.9	2.0	2.7	0.04
Follow-up (mdr)	37.4 (34.4-40.4)				n.s.

Inkomplet ablation

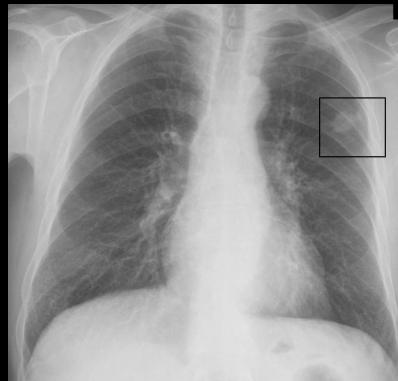


Mean PADUA score
komplet vs. inkomplet ablation

8.1 vs. 10.4, $p < 0.001$

	Alle patienter n = 212	Inkomplet ablation n = 11 (5.2%)	værdi
PADUA Score			< 0.001
6-7	70	0	
8-9	86	1 (1.2%)	
> 10	56	10 (17.9%)	
Longitudinal location			n.s.
superior/inferior	101	2 (1.9%)	
middle	111	9 (7.5%)	
Exophytic rate			0.006
> 50%	102	1 (1.0%)	
< 50%	95	7 (6.9%)	
endophytic	15	3 (16.7%)	
Renal rim			n.s.
lateral	135	8 (5.6%)	
medial	77	3 (3.8%)	
Renal sinus			< 0.001
not involved	132	0	
involved	80	11 (12.1%)	
Collecting system			< 0.001
not involved	121	0	
involved	91	11 (10.8%)	
Tumor size			n.s.
< 4	192	8 (4%)	
4.1-7	20	3 (13.0%)	
> 7	0	0	

Recidiv eller metastase

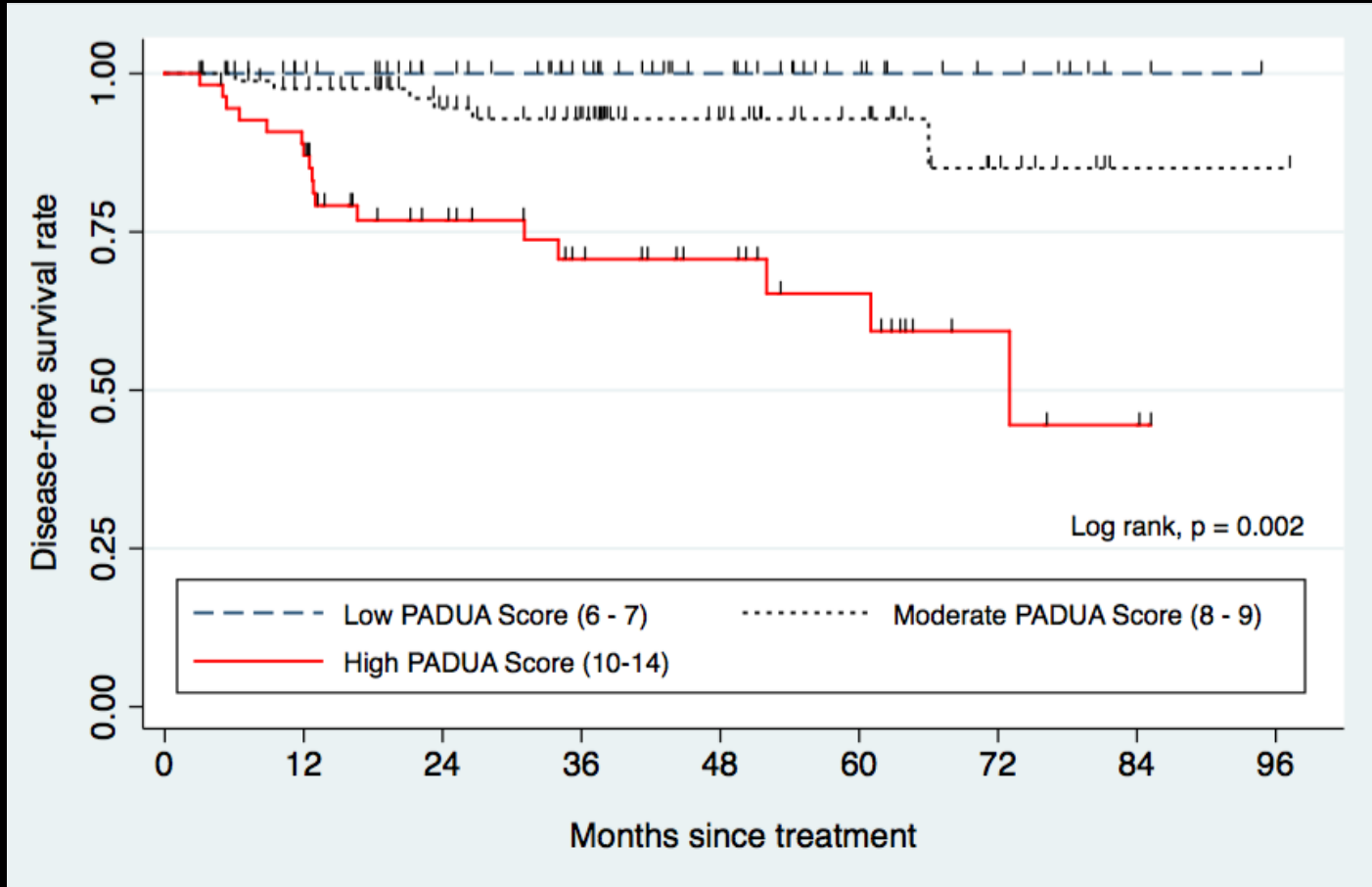


Mean PADUA score
komplet vs. recidiv/metastase

8.1 vs. 9.8, $p < 0.001$

	Alle patienter n = 201	Recidiv eller metastase n = 12 (6.0%)	p-værdi
PADUA Score			0.003
6-7	70	0	
8-9	85	5 (5.9)	
> 10	46	7 (15.2)	
Longitudinal location			0.005
superior/inferior	99	1 (1.0)	
middle	102	11 (10.8)	
Exophytic rate			0.004
> 50%	101	1 (1.0)	
< 50%	88	9 (10.2)	
endophytic	12	2 (16.7)	
Renal rim			n.s.
lateral	127	7 (5.5)	
medial	74	5 (6.8)	
Renal sinus			n.s.
not involved	132	5 (3.8)	
involved	69	7 (10.1)	
Collecting system			n.s.
not involved	121	4 (3.3)	
involved	80	8 (10.0)	
Tumor size			n.s.
< 4	192	10 (5.4)	
4.1-7	17	2 (11.8)	
> 7	0	0	

Sygdomsfri overlevelse



	Risiko for recidiv eller metastase*	95% CI	p-værdi
PADUA Score, >10 (vs. <10)	5.0	1.6 – 15.9	0.006
Tumor størrelse, >25mm (vs. <25mm)	1.3	0.4 - 4.2	n.s.
Exophytic komponent, <50% (vs. >50%)	10.7	2.5 – 48.8	0.02
Placering, midt (vs. øvre/nedre)	10.4	2.3 – 36.4	0.03
Placering, mediant (vs. lateralt)	1.2	0.4 – 3.7	n.s.
Samlesystem, involveret (vs. ikke involveret)	2.9	0.9 – 9.5	n.s.
Nyre sinus, involveret (vs. ikke involveret)	4.3	1.3 – 14.1	0.01
Histologi, ccRCC (vs. non-ccRCC)	4.4	0.6 – 34.6	n.s.
ASA score, 3-4 (vs. 1-2)	1.1	0.3 – 3.4	n.s.
ECOC status, >2 (vs. < 2)	2.3	1.0 – 5.6	n.s.
CCI, >5 (vs. < 5)	2.7	0.8 – 8.9	n.s.
BMI, >25 (vs. < 25)	2.6	0.6 – 11.9	n.s.

* Hazard ratio, justeret for alder & tumorstørrelse

Konklusion

PADUA score findes signifikant forøget ved patienter som oplever inkomplet ablation såvel som lokal recidiv eller metastase.

Der er op mod 15 gange større risiko for inkomplet ablation af en tumor med høj PADUA score, sammenlignet med en tumor med lav eller moderat PADUA score.

Justeret for alder og tumorstørrelse findes der øget risiko for lokal recidiv eller metastase ved:

- PADUA score > 10
- Eksofyttisk komponent < 50%
- Central longitudinal placering
- Involvering af nyre-sinus

TAK FOR OPMÆRKSOMHEDEN



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