Ενδοουρολογία
Οι σημαντικότερες δημοσιεύσεις της χρονιάς

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Athens Stone Clinic

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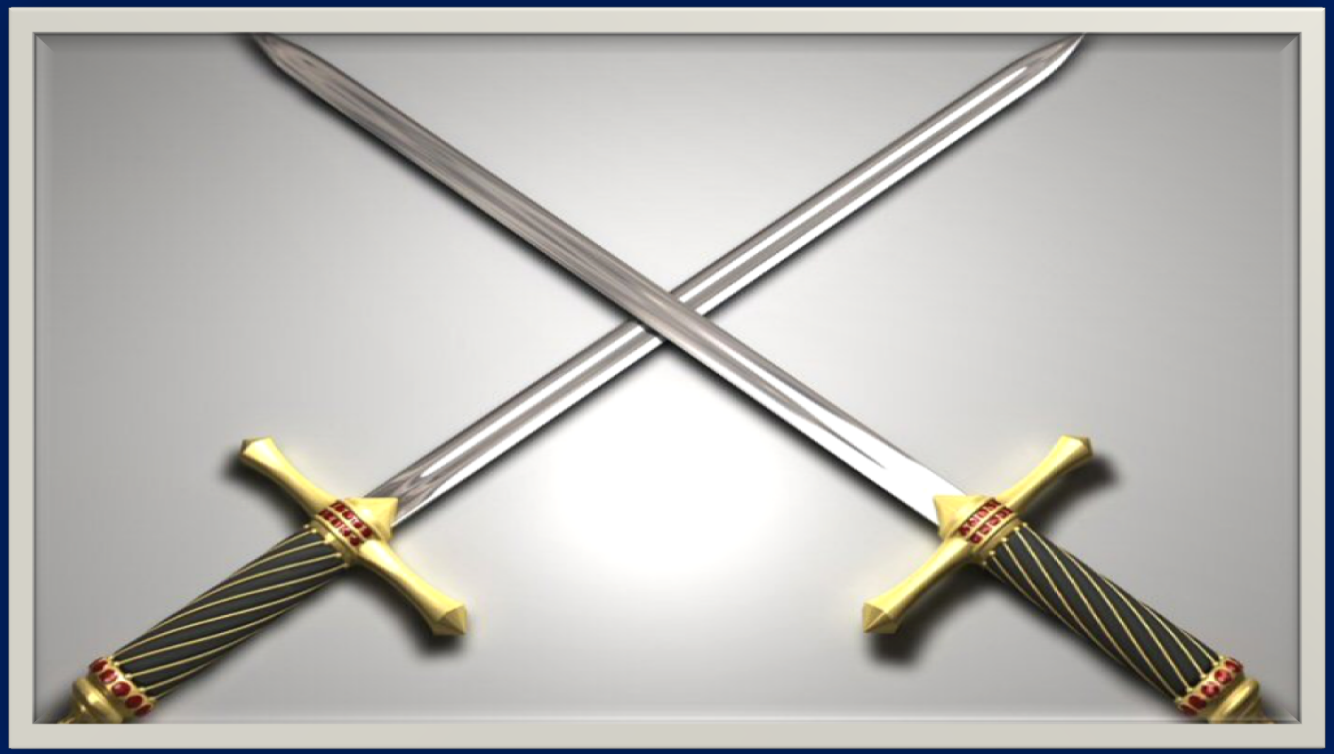
STONE CLINIC ATHENS



Δήλωση συμφερόντων ουδεμία

World Journal of Urology
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INVITED REVIEW

Ureteroscopy is more cost effective than shock wave lithotripsy for stone treatment: systematic review and meta-analysis

Robert M. Geraghty[1] · Patrick Jones[1] · Thomas R. W. Herrmann[2] · Omar Aboumarzouk[3] · Bhaskar K. Somani[1]

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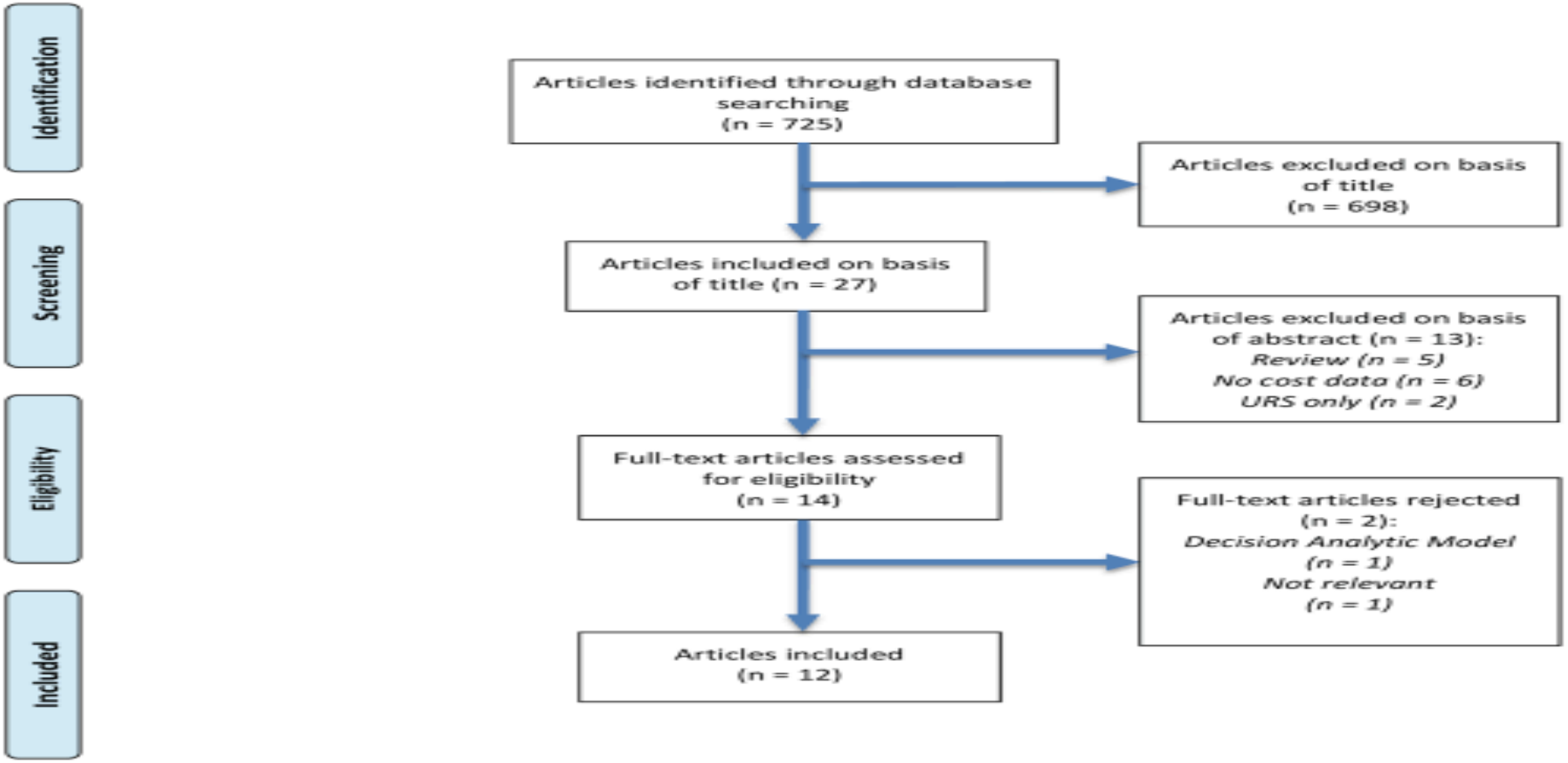


Fig. 1 PRISMA flowchart of the included studies

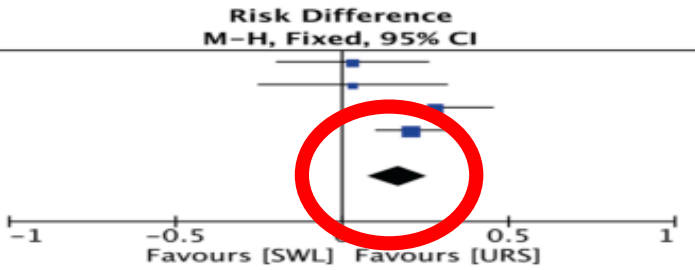
Συνολικός αριθμός ασθενών=2012

a

Study or Subgroup	SWL Events	SWL Total	URS Events	URS Total	Weight	Risk Difference M–H, Fixed, 95% CI	Year
Pearle et al. 2001	11	32	10	32	21.0%	0.03 [−0.20, 0.26]	2001
Lee et al. 2006	15	22	13	20	13.7%	0.03 [−0.25, 0.32]	2006
Salem, 2009b	17	42	6	48	29.4%	0.28 [0.10, 0.46]	2009
Salem, 2009a	12	58	0	52	35.9%	0.21 [0.10, 0.31]	2009
Total (95% CI)		**154**		**152**	**100.0%**	**0.17 [0.08, 0.26]**	
Total events	55		29				

Heterogeneity: Chi² = 4.31, df = 3 (P = 0.23); I² = 30%
Test for overall effect: Z = 3.65 (P = 0.0003)

SFR

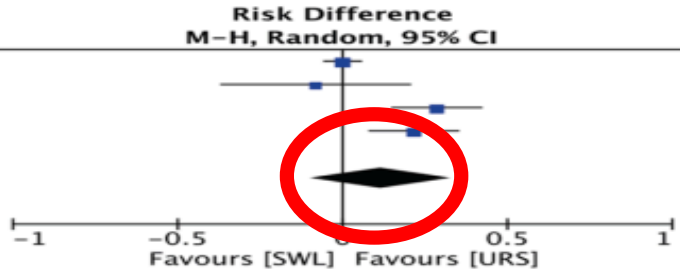


b

Study or Subgroup	SWL Events	SWL Total	URS Events	URS Total	Weight	Risk Difference M–H, Random, 95% CI	Year
Pearle et al. 2001	0	32	0	32	28.7%	0.00 [−0.06, 0.06]	2001
Lee et al. 2006	7	22	8	20	19.1%	−0.08 [−0.37, 0.21]	2006
Salem, 2009b	12	42	0	48	26.1%	0.29 [0.15, 0.42]	2009
Salem, 2009a	17	58	4	52	26.1%	0.22 [0.08, 0.35]	2009
Total (95% CI)		**154**		**152**	**100.0%**	**0.12 [−0.10, 0.33]**	
Total events	36		12				

Heterogeneity: Tau² = 0.04; Chi² = 32.00, df = 3 (P < 0.00001); I² = 91%
Test for overall effect: Z = 1.06 (P = 0.29)

Comp



c

Study or Subgroup	SWL Events	SWL Total	URS Events	URS Total	Weight	Risk Difference (Non-event) M–H, Random, 95% CI	Year
Pearle et al. 2001	3	32	8	32	22.5%	0.16 [−0.02, 0.34]	2001
Lee et al. 2006	2	22	13	20	18.9%	0.56 [0.32, 0.80]	2006
Salem, 2009a	0	58	0	52	29.4%	0.00 [−0.03, 0.03]	2009
Salem, 2009b	0	42	0	48	29.2%	0.00 [−0.04, 0.04]	2009
Total (95% CI)		**154**		**152**	**100.0%**	**0.14 [−0.03, 0.31]**	
Total events	5		21				

Heterogeneity: Tau² = 0.03; Chi² = 76.60, df = 3 (P < 0.00001); I² = 96%
Test for overall effect: Z = 1.59 (P = 0.11)

Re-tr

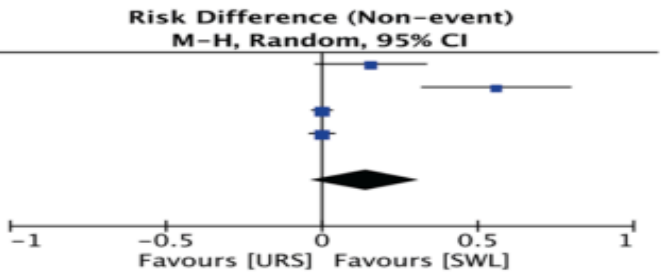


Fig. 2 **a–c** forest plot of SFR, complications and re-treatment

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STONE CLINIC ATHENS

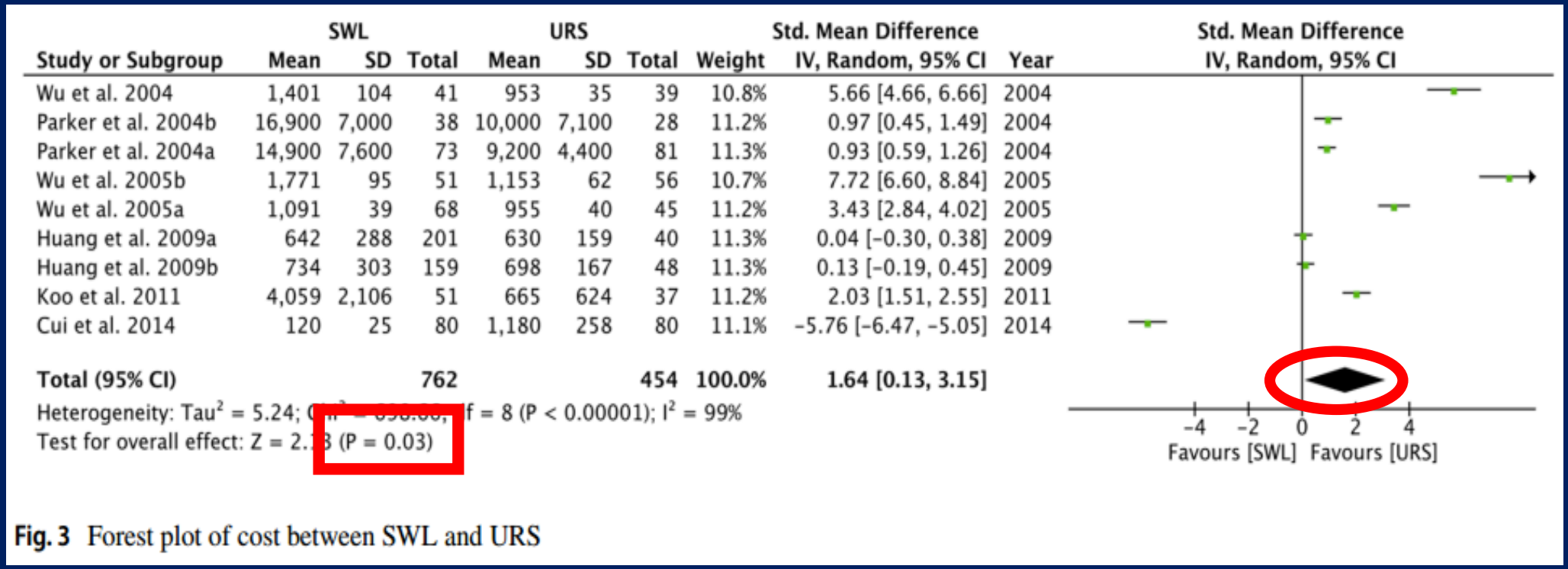

Fig. 3 Forest plot of cost between SWL and URS

Overall cost

- **URS 2801$**
- **SWL 3627$**

URS > SWL

- **<10mm ureteral stone**
- **>10mm ureteral stone**
- **Proximal ureteral stone**

Sub-analyses

Stone size

Subanalysis of studies comparing SWL and URS was possible for stone size smaller than 10 or 10 mm and larger. Both groups favoured URS in terms of cost (< 10 mm: Std mean diff = 0.90, 95% CI 0.68–1.12, $I^2 = 98\%$, $p < 0.001$; ≥ 10 mm: Std mean diff = 0.78, 95% CI 0.51–1.04, $I^2 = 99\%$, $p < 0.001$).

Proximal ureteric stones

Proximal ureteric stones treated with URS had significantly cheaper costs (Std. mean diff = 0.99, 95% CI 0.82–1.15, $p < 0.001$).

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Conclusions

- **SFR higher for URS (84% vs. 60%)**
- **Complications rates similar**
- **URS is cheaper for ureteral stones irrespective the size**

Review Article

What Is the Role of α-Blockers for Medical Expulsive Therapy? Results From a Meta-analysis of 60 Randomized Trials and Over 9500 Patients

Omar M. Aboumarzouk, Patrick Jones, Tarik Amer, Dimitris Kotsiris, Esteban Emiliani, Bhaskar Somani, Panagiotis Kallidonis, Thomas Tailly, Gohkan Atis, Francesco Greco, Stephan Hruby, Mario Alvarez, Khalid Al-Rumaihi, Ahmad Shamsodini, Abdulla Al-Ansari, and Ahmed Shokeir

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Study Selection and Data Extraction

All studies reporting on the use of an α-blocker compared with a control group in adult patients with ureteric stones of mean size (and SD) ≤10 mm were included. Abstract publications were excluded. Authors were contacted wherever the data were not available or not clear to adequately assess inclusion of their study.

Two authors independently identified studies eligible for inclusion and extracted the data accordingly. Both of these steps were verified by the senior author (OA). Disagreement between the authors was resolved by consensus of all authors.

Only studies using either a placebo or the hospital or country's protocol for conservative management (ie, analgesics, antispasmodics, hydration), serving as controls, were included. Studies on MET after treatments such as shock wave lithotripsy or ureteroscopy were only included if there were control and experimental arms, which had not undergone any other treatment for their stones.

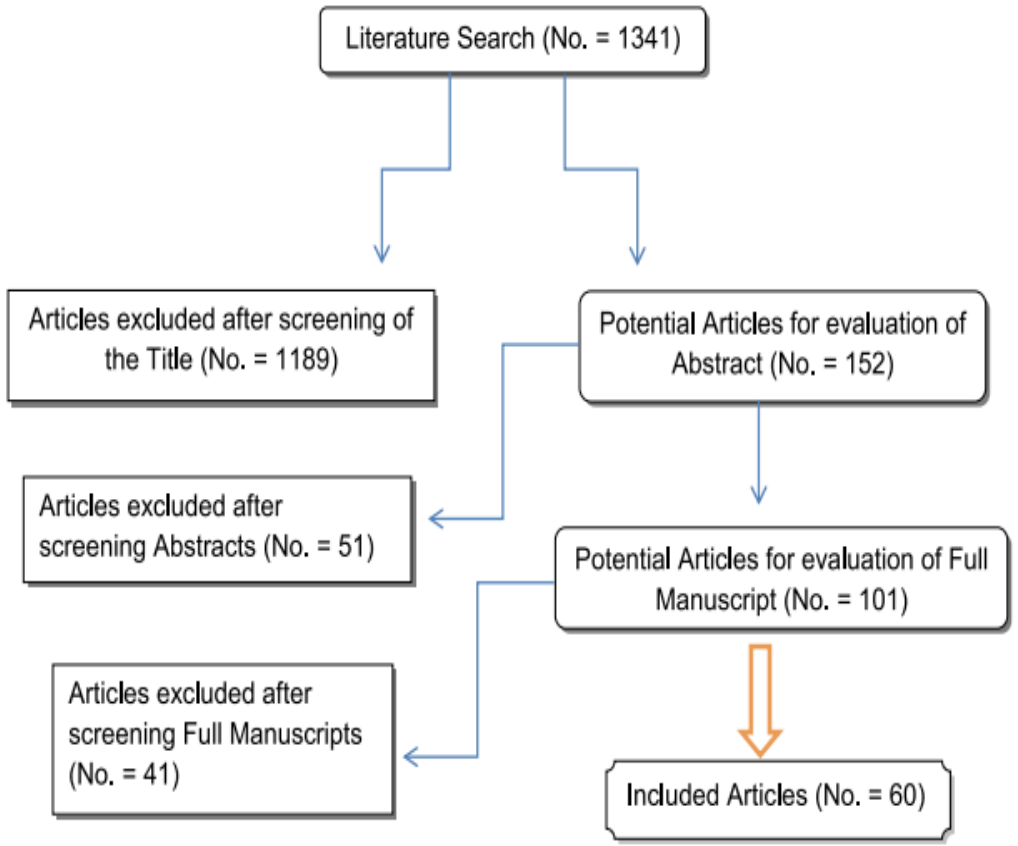

Figure 1. Flowchart for article selection process of the review. (Color version available online.)

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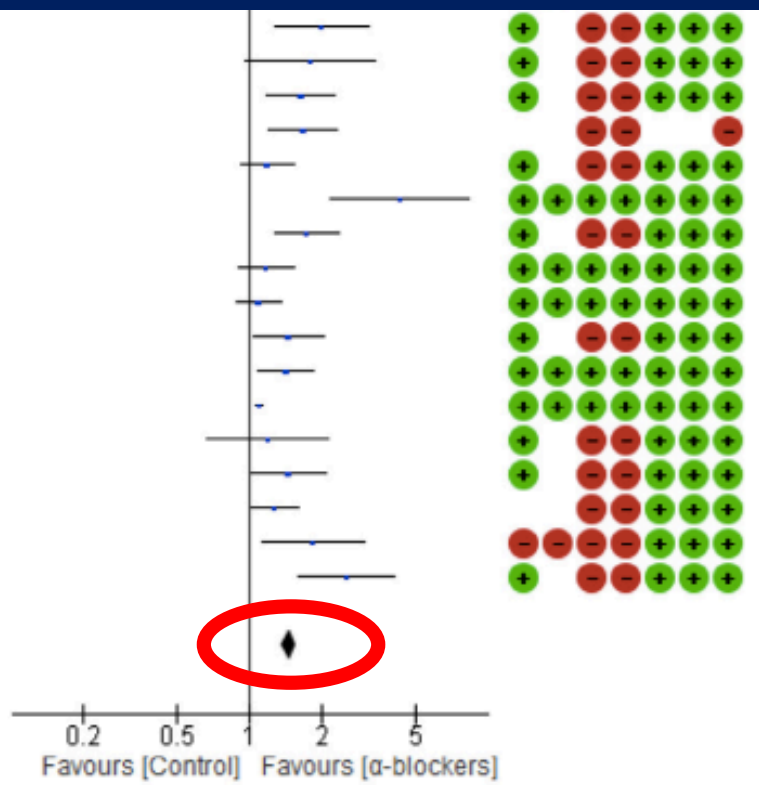
a) MET Expulsion Rates: α-blockers versus control

Porpiglia 2004	24	28	12	28	1.3%	2.00 [1.27, 3.15]
Porpiglia 2006	18	30	8	24	0.8%	1.80 [0.95, 3.40]
Porpiglia 2009	37	46	22	45	1.8%	1.65 [1.18, 2.29]
Rahim 2012	37	45	22	45	1.8%	1.68 [1.21, 2.34]
Resim 2005	26	30	22	30	2.1%	1.18 [0.91, 1.53]
Sameer 2014	30	35	7	35	0.8%	4.29 [2.18, 8.43]
Sayed 2008	40	45	23	45	1.9%	1.74 [1.28, 2.36]
Sur 2015	60	115	52	117	2.1%	1.17 [0.90, 1.53]
Vincendeau 2010	47	61	43	61	2.3%	1.09 [0.88, 1.35]
Wang 2008	51	64	17	31	1.7%	1.45 [1.03, 2.05]
Wang 2016	48	62	33	61	2.1%	1.43 [1.10, 1.87]
Ye 2017	1419	1642	1300	1654	2.9%	1.10 [1.07, 1.13]
Yencilek 2010	15	42	15	50	1.0%	1.19 [0.66, 2.14]
Yilmaz 2005	67	86	15	28	1.6%	1.45 [1.01, 2.09]
Yuksel 2015	32	35	25	35	2.2%	1.28 [1.01, 1.62]
Zehri2010	23	33	12	32	1.2%	1.86 [1.13, 3.07]
Zhou 2011	68	88	13	43	1.3%	2.56 [1.60, 4.08]
Total (95% CI)		**4957**		**4560**	**100.0%**	**1.46 [1.37, 1.57]**
Total events	3967		2921			

Heterogeneity: Tau² = 0.04; Ch[illegible] 59 (P < 0.00001); I² = 78%

Test for overall effect: Z = 10.7 (P < 0.00001)

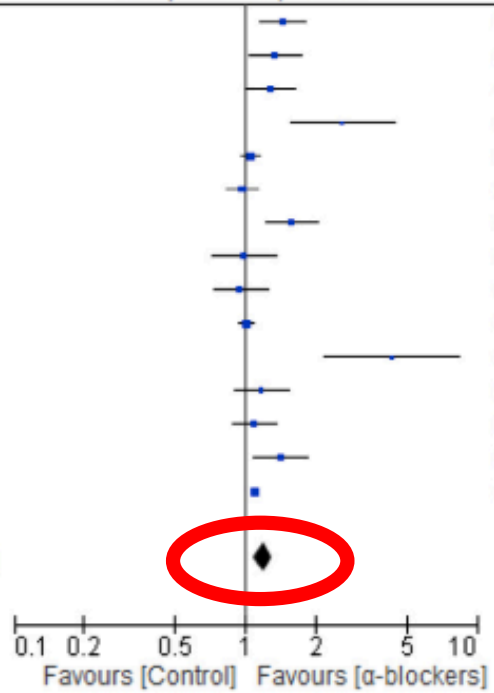


b) MET Expulsion Rates: Subgroup analysis of Low risk of Bias studies: α-blockers versus control

Study or Subgroup	α-blockers Events	α-blockers Total	Control Events	Control Total	Weight	Risk Ratio M-H, Random, 95% CI
Abdel-Meguid 2010	61	75	42	75	6.6%	1.45 [1.16, 1.82]
Al-Ansari 2010	41	50	28	46	5.7%	1.35 [1.03, 1.76]
Cervenakov 2002	41	51	32	51	6.0%	1.28 [1.00, 1.65]
El-Gamal 2012	33	48	12	46	2.2%	2.64 [1.56, 4.44]
Furyk 2015	140	161	127	155	10.9%	1.06 [0.97, 1.17]
Hermanns 2009	39	45	40	45	8.9%	0.97 [0.84, 1.14]
Mustafa 2016	51	60	32	60	5.8%	1.59 [1.23, 2.07]
Ochoa-Gomez 2011	22	32	23	33	4.5%	0.99 [0.71, 1.36]
Pedro 2008	25	34	27	35	5.6%	0.95 [0.73, 1.25]
Pickard 2015	307	378	303	379	11.6%	1.02 [0.95, 1.09]
Sameer 2014	30	35	7	35	1.4%	4.29 [2.18, 8.43]
Sur 2015	60	115	52	117	5.6%	1.17 [0.90, 1.53]
Vincendeau 2010	47	61	43	61	7.1%	1.09 [0.88, 1.35]
Wang 2016	48	62	33	61	5.6%	1.43 [1.10, 1.87]
Ye 2017	1419	1642	1300	1654	12.3%	1.10 [1.07, 1.13]
Total (95% CI)		**2849**		**2853**	**100.0%**	**1.19 [1.09, 1.30]**
Total events	2364		2101			

Heterogeneity: Tau² = 0.02; [illegible] 4 (P < 0.00001); I² = 77%

Test for overall effect: Z = 4.[illegible]3 (P < 0.0001)



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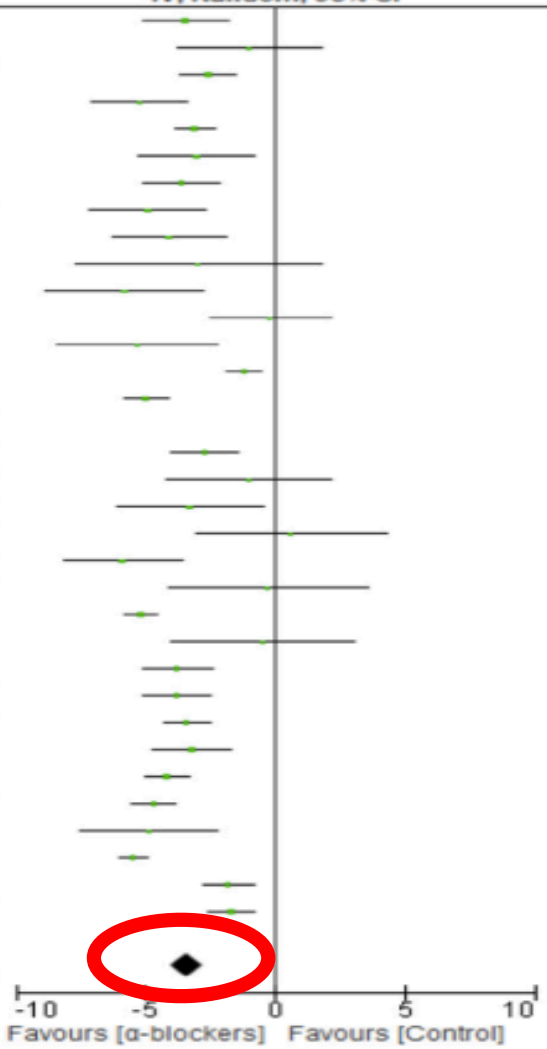
a) Time to Stone Expulsion

Study or Subgroup	α-blockers Mean	α-blockers SD	α-blockers Total	Control Mean	Control SD	Control Total	Weight	Mean Difference IV, Random, 95% CI
Al-Ansari 2010	6.4	2.77	50	9.87	5.4	50	3.2%	-3.47 [-5.15, -1.79]
Alizadeh 2014	3.7	5.7	50	4.7	8.03	46	2.2%	-1.00 [-3.81, 1.81]
Autorino 2005	4.8	2.2	32	7.4	2.2	32	3.8%	-2.60 [-3.68, -1.52]
Bajwa 2013	15.7	3.72	30	20.93	3.43	30	3.1%	-5.23 [-7.04, -3.42]
De Sio 2006	4.4	2.1	50	7.5	1.8	46	4.0%	-3.10 [-3.88, -2.32]
Georgescu 2015	9	5.26	50	12.03	6.22	50	2.7%	-3.03 [-5.29, -0.77]
Han 2006	4.6	2.08	35	8.2	3.8	32	3.4%	-3.60 [-5.09, -2.11]
Itoh 2011	10.27	8.35	89	15.19	7.14	92	2.7%	-4.92 [-7.19, -2.65]
Itoh 2013	9.29	5.91	55	13.4	5.9	56	2.7%	-4.11 [-6.31, -1.91]
Kaneko 2010	14	8.5	31	17	11	34	1.2%	-3.00 [-7.76, 1.76]
Kim 2007	12.7	6.6	34	18.5	6.9	42	2.0%	-5.80 [-8.85, -2.75]
Kirac 2013	15.1	5.5	42	15.3	5.3	39	2.6%	-0.20 [-2.55, 2.15]
Lee 2014	14.3	7.9	54	19.6	8.5	54	2.0%	-5.30 [-8.40, -2.20]
Liatsikos 2007	7.6	0.8	20	8.8	1.09	15	4.1%	-1.20 [-1.85, -0.55]
Liatsikos 2007	7.1	1.29	22	12.1	1.35	16	4.0%	-5.00 [-5.85, -4.15]
Lojanapiwat 2008	10.8	7.52	25	23	0	25		Not estimable
Mohseni 2006	3.2	2.59	32	5.9	2.7	32	3.6%	-2.70 [-4.00, -1.40]
Ochoa-Gomez 2011	22	6.77	32	23	6.36	33	1.9%	-1.00 [-4.20, 2.20]
Pedro 2008	5.2	4.82	34	8.5	6.99	35	2.2%	-3.30 [-6.13, -0.47]
Pickard 2015	16.5	12.6	79	15.9	11.3	84	1.6%	0.60 [-3.08, 4.28]
Rahim 2012	13.3	6.31	45	19.18	4.66	45	2.7%	-5.88 [-8.17, -3.59]
Sameer 2014	12	6.67	35	12.29	9.46	35	1.6%	-0.29 [-4.12, 3.54]
Sayed 2008	7.3	0.78	45	12.5	2.12	45	4.1%	-5.20 [-5.86, -4.54]
Vincendeau 2010	9.6	9.8	61	10.1	10	61	1.7%	-0.50 [-4.01, 3.01]
Wang 2008	6.3	2.4	32	10.1	3	31	3.6%	-3.80 [-5.14, -2.46]
Wang 2008	6.3	2.1	32	10.1	3	31	3.6%	-3.80 [-5.08, -2.52]
Wang 2016	6.31	2.13	62	9.73	2.76	61	4.0%	-3.42 [-4.29, -2.55]
Yencilek 2010	8.4	3.3	42	11.6	4.1	50	3.4%	-3.20 [-4.71, -1.69]
Yilmaz 2005	6.3	0.88	29	10.5	2.12	28	4.0%	-4.20 [-5.05, -3.35]
Yilmaz 2005	5.8	0.88	28	10.5	2.12	28	4.0%	-4.70 [-5.55, -3.85]
Yuksel 2015	8.03	4.99	35	12.91	6.14	35	2.4%	-4.88 [-7.50, -2.26]
Zehri2010	7	1	33	12.5	1.17	32	4.2%	-5.50 [-6.03, -4.97]
Zhou 2011	7.6	2.26	43	9.4	2.48	43	3.9%	-1.80 [-2.80, -0.80]
Zhou 2011	7.7	1.94	45	9.4	2.48	43	3.9%	-1.70 [-2.63, -0.77]
Total (95% CI)			**1413**			**1411**	**100.0%**	**-3.39 [-3.99, -2.79]**

Heterogeneity: Tau² = 2.17; Chi² = 214.74, df = 32 (P < 0.00001); I² = 85%

Test for overall effect: Z = 11.0 (P < 0.00001)



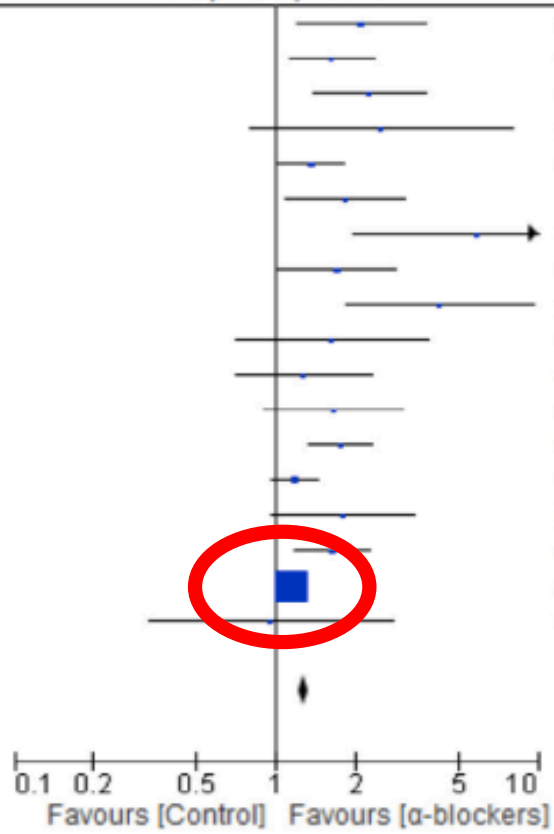
b) Stones <5mm

c) Stones >5mm

Study or Subgroup	α-blockers Events	α-blockers Total	Control Events	Control Total	Weight	Risk Ratio M-H, Fixed, 95% CI
Balci 2014	19	25	9	25	0.9%	2.11 [1.20, 3.72]
Chau 2011	27	33	17	34	1.6%	1.64 [1.13, 2.38]
El-Gamal 2012	33	48	13	43	1.3%	2.27 [1.39, 3.72]
ElSaid 2015	8	19	3	18	0.3%	2.53 [0.79, 8.06]
Furyk 2015	30	36	25	41	2.2%	1.37 [1.03, 1.82]
Georgescu 2015	34	50	10	27	1.2%	1.84 [1.08, 3.11]
Gurbuz 2011	52	97	3	33	0.4%	5.90 [1.97, 17.62]
Itoh 2011	23	44	14	46	1.3%	1.72 [1.02, 2.89]
Itoh 2013	22	29	5	28	0.5%	4.25 [1.87, 9.65]
Kim 2007	6	11	6	18	0.4%	1.64 [0.70, 3.82]
Kirac 2013	11	19	10	22	0.9%	1.27 [0.70, 2.31]
Liatsikos 2007	16	22	7	16	0.8%	1.66 [0.90, 3.06]
Mustafa 2016	42	42	23	41	2.3%	1.77 [1.35, 2.31]
Pickard 2015	67	94	57	94	5.4%	1.18 [0.96, 1.45]
Porpiglia 2006	18	30	8	24	0.8%	1.80 [0.95, 3.40]
Porpiglia 2009	37	46	22	45	2.1%	1.65 [1.18, 2.29]
Ye 2017	931	1087	814	1093	77.1%	1.15 [1.10, 1.20]
Yencilek 2010	5	28	6	32	0.5%	0.95 [0.33, 2.78]
Total (95% CI)		**1760**		**1680**	**100.0%**	**1.28 [1.22, 1.33]**
Total events	1381		1052			

Heterogeneity: Chi² = 64.82, [illegible]; I² = 74%

Test for overall effect: Z = 11.[illegible] (P < 0.00001)



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e) Mid Ureter Stone Expulsion

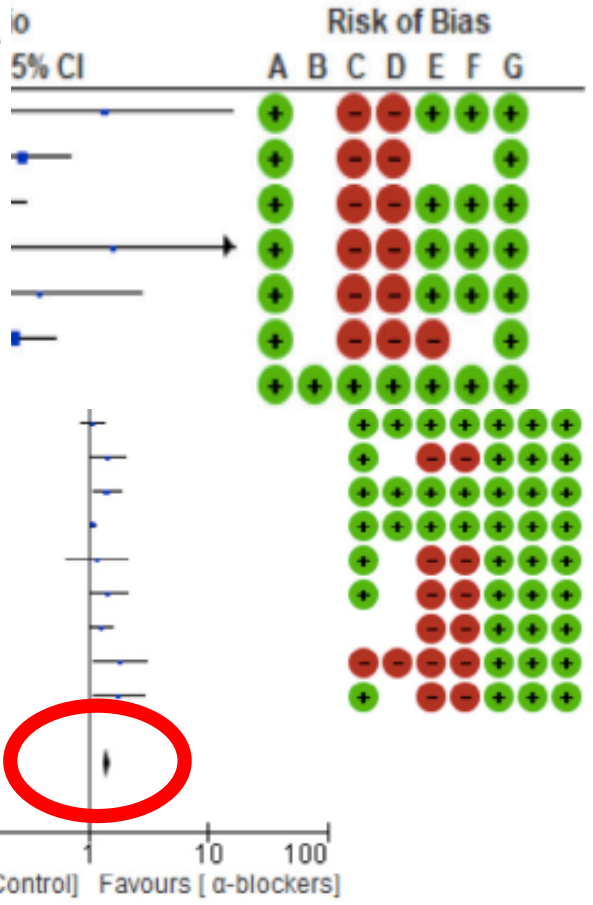
Study or Subgroup	α-blockers Events	α-blockers Total	Control Events	Control Total	Weight	Risk Ratio M-H, Fixed, 95% CI
Ibrahim 2013	5	6	1	5	2.3%	4.17 [0.70, 24.94]
Itoh 2011	4	8	1	8	2.1%	4.00 [0.56, 28.40]
Pickard 2015	29	41	36	44	74.6%	0.86 [0.68, 1.10]
Sur 2015	8	20	10	21	20.9%	0.84 [0.42, 1.69]
Total (95% CI)		75		78	100.0%	1.00 [0.79, 1.28]
Total events	46					

Heterogeneity: Chi² = 6.07, df =

Test for overall effect: Z = 0.03

Risk Ratio M-H, Fixed, 95% CI

Risk of Bias A B C D E F G



f) Distal Ureter Stone Expulsion

Vincendeau 2010	47	61	43	61	2.5%	1.09 [0.88, 1.35]
Wang 2008	51	64	17	31	1.8%	1.45 [1.03, 2.05]
Wang 2016	48	62	33	61	2.2%	1.43 [1.10, 1.87]
Ye 2017	1419	1642	1300	1654	3.2%	1.10 [1.07, 1.13]
Yencilek 2010	15	42	15	50	1.0%	1.19 [0.66, 2.14]
Yilmaz 2005	67	86	15	28	1.7%	1.45 [1.01, 2.09]
Yuksel 2015	32	35	25	35	2.4%	1.28 [1.01, 1.62]
Zehri2010	23	33	12	32	1.2%	1.86 [1.13, 3.07]
Zhou 2011	48	88	13	43	1.2%	1.80 [1.10, 2.95]
Total (95% CI)		**4465**		**4141**	**100.0%**	**1.44 [1.34, 1.54]**
Total events	3608		2697			

Heterogeneity: Tau² = 0.04 (P < 0.00001); I² = 76%

Test for overall effect: Z = 1.32 (P < 0.00001)

Total (95% CI)

Total events

Heterogeneity: Chi

Test for overall effe

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STONE CLINIC ATHENS

a-blockers are beneficial for…

- >5mm ureteral stones (78.5% vs. 62.6%)
- in the distal (80.8% vs. 65.1%) or proximal ureter (62.7% vs. 47.9%)

a-blockers facilitate faster spontaneous passage

similar results for all a-blockers

World Journal of Urology
https://doi.org/10.1007/s00345-018-2230-x

INVITED REVIEW

Miniaturised percutaneous nephrolithotomy versus flexible ureteropyeloscopy: a systematic review and meta-analysis comparing clinical efficacy and safety profile

N. F. Davis[1] · M. R. Quinlan[1] · C. Poyet[1] · N. Lawrentschuk[1] · D. M. Bolton[1] · D. Webb[1] · G. S. Jack[1]

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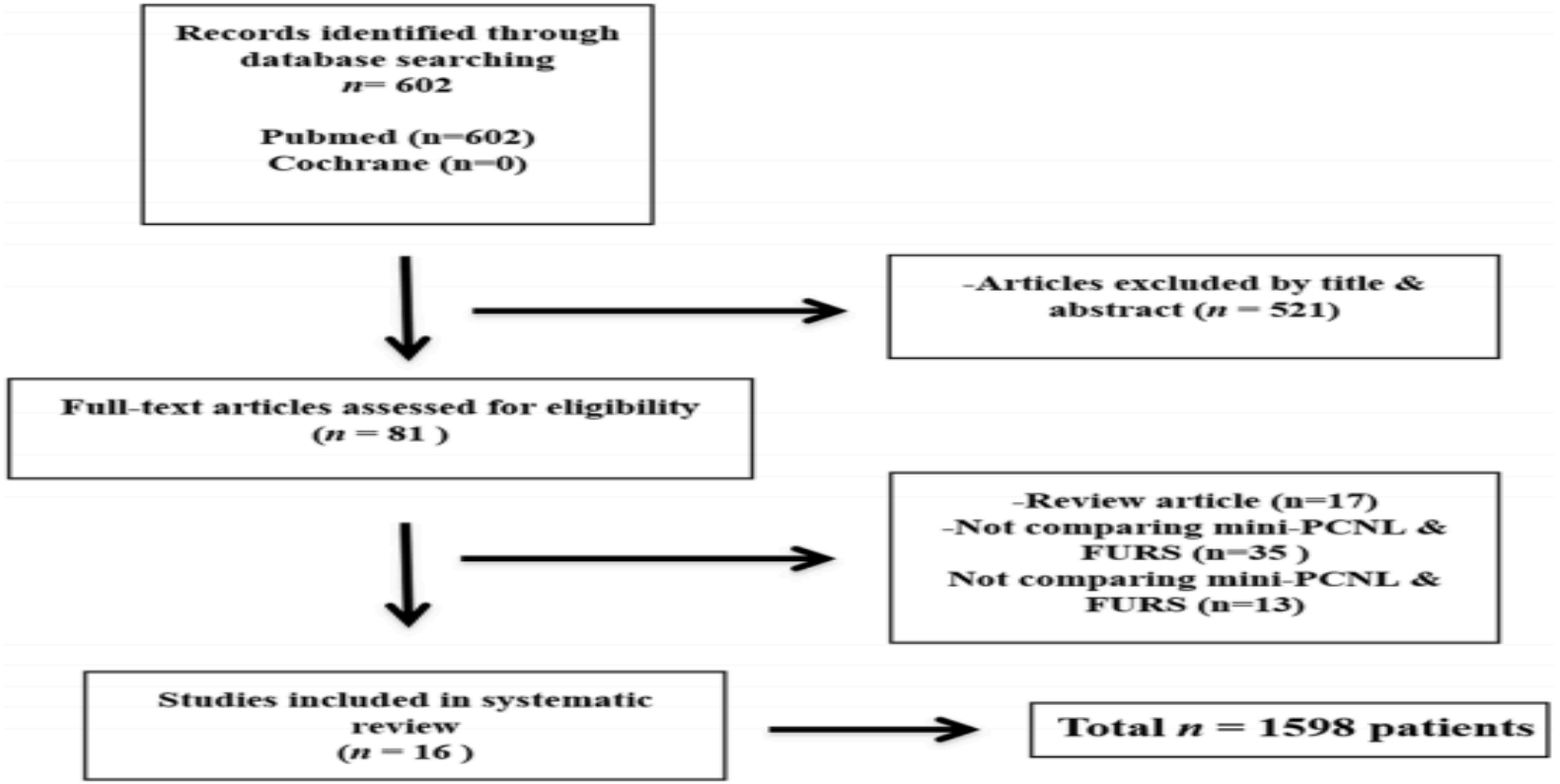


Fig. 1 Preferred reporting items in systematic reviews and meta-analyses (PRISMA) diagram

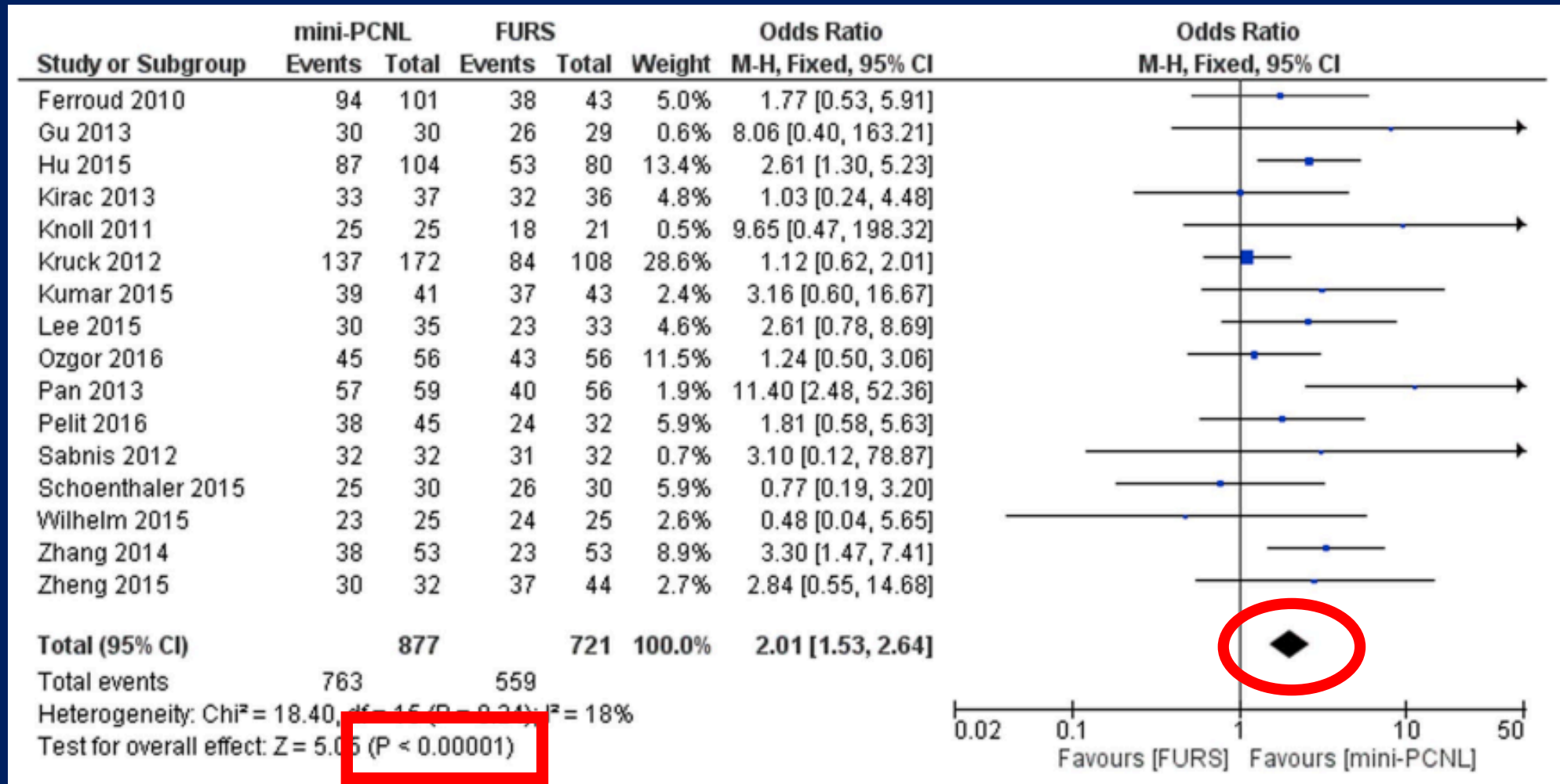


Fig. 2 Forest plot and meta-analysis of overall stone-free rate for miniaturised nephrolithotomy and flexible ureteropyeloscopy

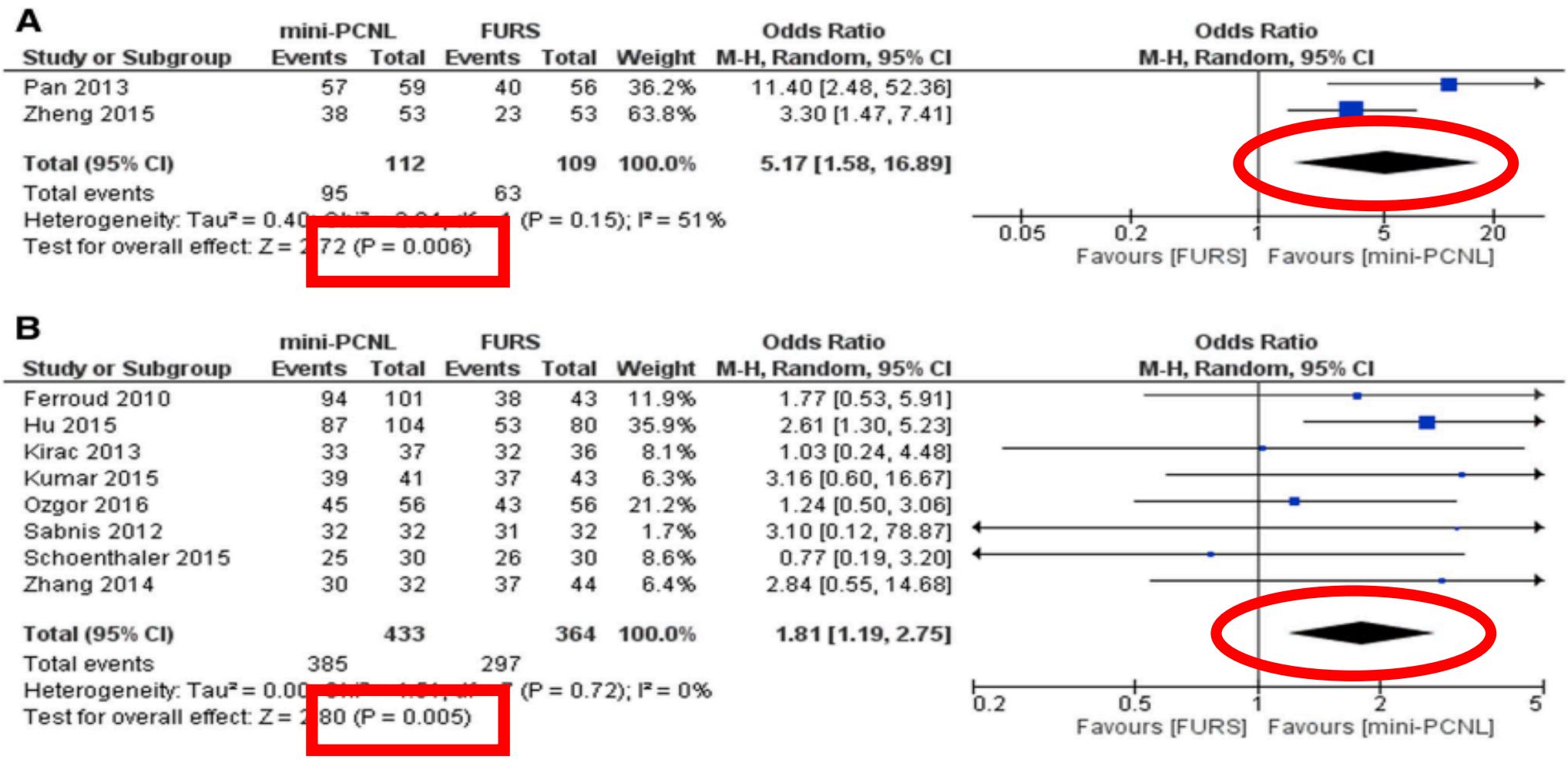


Fig. 4 Forest plot and meta-analysis of stone-free rate for stones > 2 cm (**a**) and for stones < 2 cm (**b**) for miniaturised percutaneous nephrolithotomy and flexible ureteropyeloscopy. *SFR* Stone-free rate

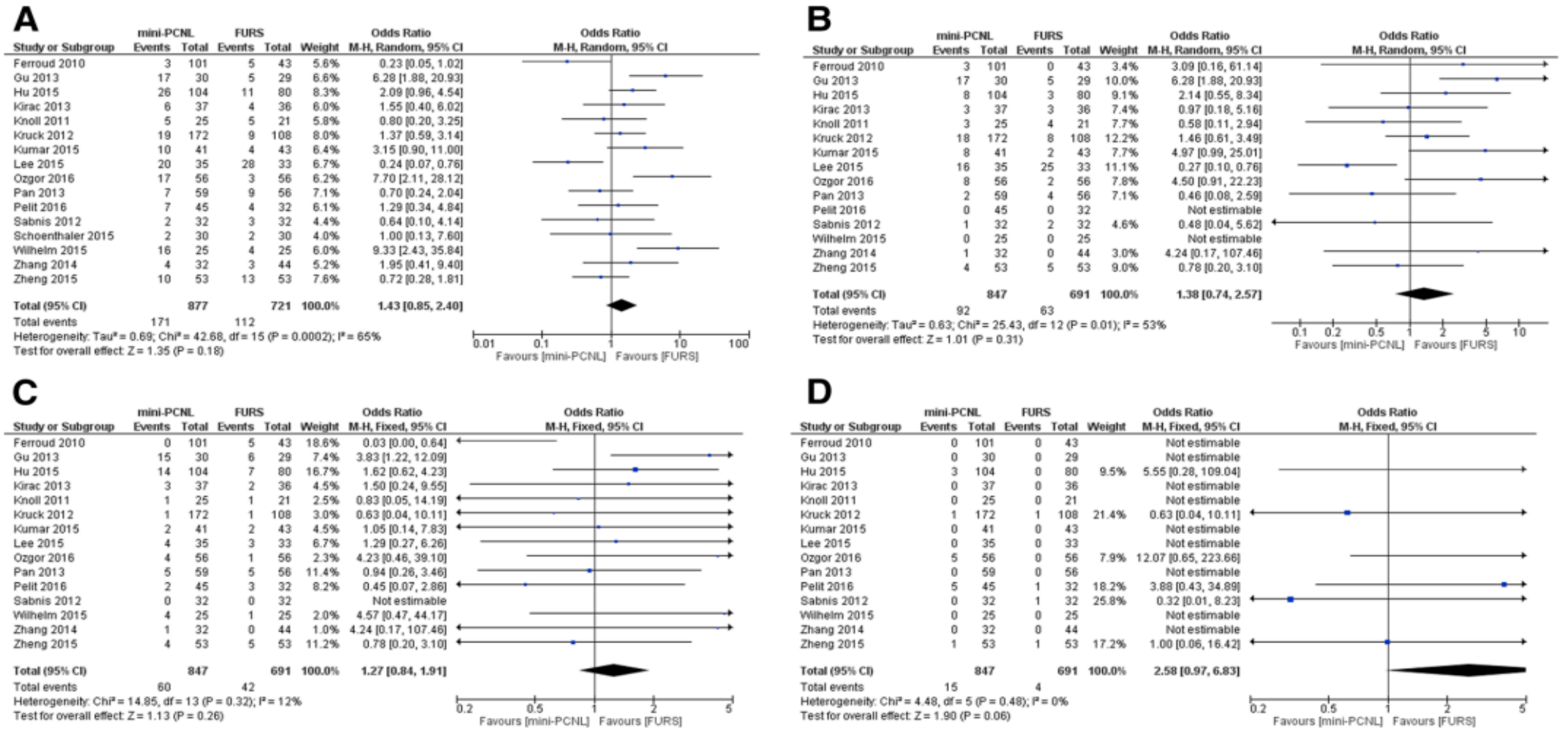


Fig. 6 Forest plot and meta-analysis of overall complication rate (**a**), Clavien–Dindo grade 1 complications (**b**), Clavien–Dindo grade 2 complications (**c**) and Clavien–Dindo grade 3 complications (**d**) for patients undergoing miniaturised percutaneous nephrolithotomy and flexible ureteropyeloscopy

mini-PCNL vs. fURS

Overall stone-free rate: 89.3% vs. 80.1% (p<0.01)

Overall complication rate: 19.5% vs. 15.5% (ns)

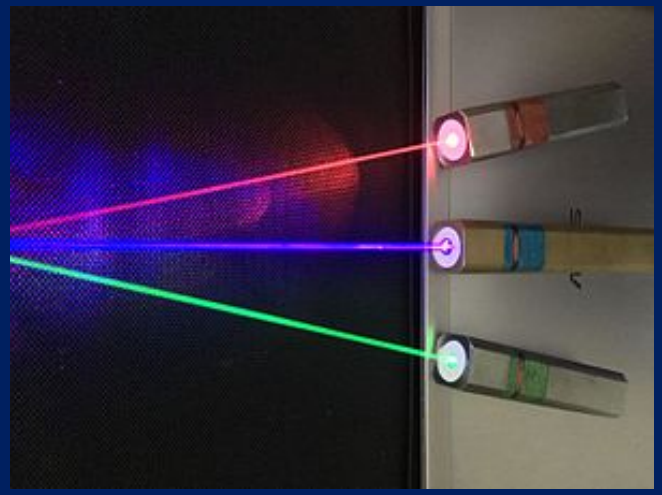
World Journal of Urology
https://doi.org/10.1007/s00345-019-02654-5

INVITED REVIEW

Check for updates

Thulium fiber laser: the new player for kidney stone treatment? A comparison with Holmium:YAG laser

Olivier Traxer[1,2] · Etienne Xavier Keller[1,2,3]



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next generation laser lithotripsy… what do we need???

smaller size fibers

- irrigation
- deflection
- retropulsion
- instrument miniaturisation=> better outflow=> decrease intra-renal pressure

Ho:YAG vs. Thulium

- >200µm vs. 50-150µm

next generation laser lithotripsy… what do we need???

lower pulse energy

- dusting
- retropulsion

Ho:YAG vs. Thulium

- 0.200J vs. 0.025J

long pulse energy

- dusting (0.65-1.25ms)

Ho:YAG vs. Thulium

- up to 1ms vs up to 12ms

higher frequency

- dusting

Ho:YAG vs. Thulium

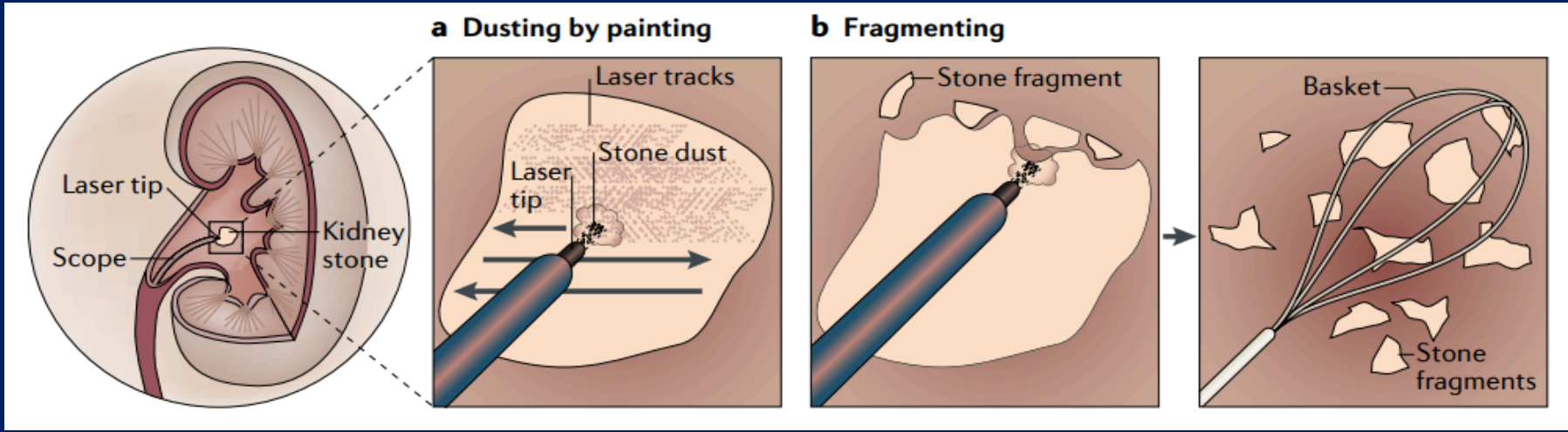
- 80Hz vs. up to 2000Hz

Conclusions

The innovative operating characteristics of the Thulium fiber laser suggest that this new technology has a significant potential for urinary stone treatment. Based on preliminary in vitro studies, the Thulium fiber laser surpasses Holmium:YAG laser in many aspects: (1) integration of smaller fibers with a core diameter as small as 50 μm; (2) pulse energy as low as 0.025 J; (3) super-high pulse repetition rate range up to 2000 Hz. These new standards may become particularly advantageous for ureteroscopy and open paths that were not been amenable to Holmium:YAG laser.

Dusting technique for lithotripsy: what does it mean?

*Steeve Doizi[1,2], Etienne Xavier Keller[1,2], Vincent De Coninck[1,2] and Olivier Traxer[1,2]**



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