CIRUGÍA MÍNIMAMENTE INVASIVA EN HBP

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Servicio de Urología
Hospital de Mérida

- La Hiperplasia Benigna de Próstata (HBP) es un diagnóstico histológico que hace referencia a la proliferación de tejido epitelial glandular, músculo liso y tejido conectivo prostático, a expensas de la zona de transición (1).
- Prevalencia elevada con cambios histológicos a partir de los 40-45 años, hasta un 60% a los 60 años y 80% a los 80 años de edad (2).
- Síntomas del tracto urinario inferior (STUI) en el 50% de pacientes a los 80 años.
- Hasta el 90% de hombres entre 45 y 80 años, experimentarán algún STUI (3).

Benign prostatic hyperplasia: epidemiology, economics and evaluation

Camille Vuichoud, MD, Kevin R. Loughlin, MD
Department of Surgery, Division of Urology, Brigham and Women's Hospital, Harvard Medical Center, Boston, Massachusetts, USA

VUICHOUD C, LOUGHLIN KR. Benign prostatic hyperplasia: epidemiology, economics and evaluation. *Can J Urol* 2015;22(Suppl 1):1-6.

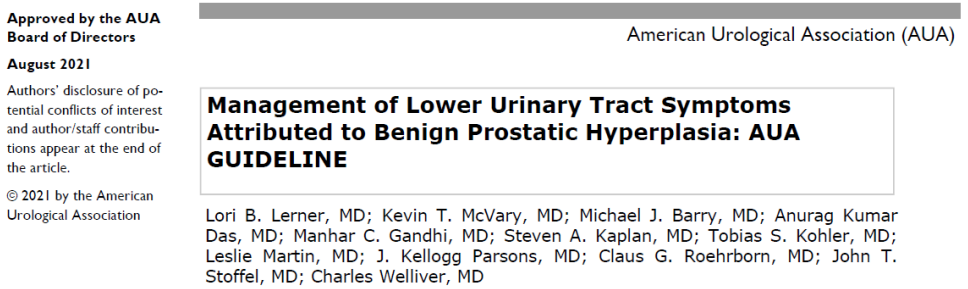
Introduction: *Benign prostatic hyperplasia (BPH) is arguably the most common benign disease of mankind. As men age, the prostate inexorably grows often causing troubling symptoms causing them to seek out care. While traditionally treated by transurethral resection or open surgical removal of the hypertrophied adenoma, today the urologist has numerous medical, surgical and minimally invasive techniques available. In this supplement The Canadian Journal of Urology provides a review of the various techniques and medications available today.*
Materials and methods: *As an introduction to the supplement, the aim of this article is to review the epidemiology and economy of BPH as well as its natural history and diagnosis. A systematic review of available literature was looking for articles on BPH and its epidemiology, economics, natural history and management using PubMed database.*
Results: *The prevalence of this condition is increasing with the population aging and so does the economic burden. The exact etiology of this condition is unknown, but some risk factors have been identified. The diagnostic and treatment of this very common disease should rely on a strong collaboration between primary care physician and urologist.*
Conclusion: *There are multiple options in treating BPH including medical, surgical and newer minimally invasive options. The challenge with having a variety of options is to review them with the patient and help the patient select the best treatment option for their condition.*

Key Words: benign prostatic hypertrophy, lower urinary tract symptoms

Análisis de 12.2 millones de hombres con síntomas del tracto urinario inferior (STUI).

54.5% tratamiento farmacológico
35% observación
9.1% interrupción de medicación
1% tratamiento quirúrgico

4. Vuichoud C, Loughlin KR. Benign prostatic hyperplasia: epidemiology, economics and evaluation. Can J Urol. 2015;22(Suppl 1):1–6.



Indicaciones absolutas:

- Retención de orina recurrente o refractaria.
- Incontinencia de "rebosamiento“.
- ITU recurrente.
- Litiasis o divertículos vesicales.
- Hematuria macroscópica resistente al tratamiento.
- Dilatación del tracto urinario superior debido a HBP, con o sin deterioro de la función renal.

Indicaciones relativas:

- No adecuada resolución de STUI o residuo postmiccional con tratamiento conservador o médico.
- Insuficiencia renal secundaria a HBP.
- Retención urinaria refractaria secundaria a HBP.
- ITU recurrente.
- Litiasis vesicales recurrentes.
- Hematuria secundaria a HBP.
- STUI refractarios a otras terapias.

Efectos adversos de alfa-bloqueantes e inhibidores de 5a-reductasa

- Trastornos del estado de ánimo
- Depresión y pensamientos suicidas
- Demencia
- Trastornos del sueño
- Fatiga crónica

- Adherencia al tratamiento del 30% a los 6 meses (7).

Taylor & Francis

Expert Opinion on Drug Safety

ISSN: 1474-0338 (Print) 1744-764X (Online) Journal homepage: https://www.tandfonline.com/loi/ieds20

Cognitive and mood side effects of lower urinary tract medication

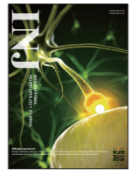
PDS Pharmacoepidemiology & Drug Safety

ispe Official Journal of the International Society for Pharmacoepidemiology

ORIGINAL REPORT

Tamsulosin and the risk of dementia in older men with benign prostatic hyperplasia

Yinghui Duan, James J. Grady, Peter C. Albertsen, Z. Helen Wu,



Review Article

Int Neurourol J 2020;24(3):231-240

https://doi.org/10.5213/inj.2040082.041

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INJ

OPEN ACCESS

Cognitive Function and Urologic Medications for Lower Urinary Tract Symptoms

Yeon Joo Kim[1], Bum Sik Tae[2], Jae Hyun Bae[2]

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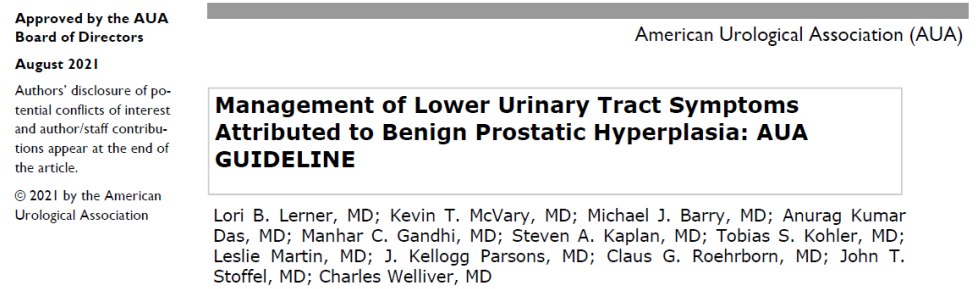
[2]Department of Urology, Korea University Ansan Hospital, Korea University College of Medicine, Ansan, Korea

J Physiol Pharmacol. 2018 Aug;69(4). doi: 10.26402/jpp.2018.4.14. Epub 2018 Dec 9.

Drug adherence and drug-related problems in pharmacotherapy for lower urinary tract symptoms related to benign prostatic hyperplasia

T Zabkowski [1], M Saracyn [1]

- RTUP bipolar o monopolar (30-80cc)
- Resección láser (ThuVARP, 30-80cc)
- Incisión transuretral de la próstata (<30)
- Adenomectomía abierta (en ausencia de enucleación bipolar o láser).
- Enucleación bipolar (plasmaquinética)
- Enucleación prostática con láser (HoLEP, ThuLEP, ThuVEP)
- Enucleación prostática con láser diodo120-W.
- Vaporización bipolar de próstata (RTUP 30-80cc)
- Vaporización prostática con láser KTP 80-W (30-80cc)
- Vaporización prostática con láser LBO 120-W o 180-W (30-80cc)
- Hidroablación prostática (Aquablation, 30-80cc).
- Embolización arterial prostática
- Elevación de uretra prostática (<70cc)



- RTUP bipolar o monopolar (30-80cc)
- Adenomectomía abierta, laparoscópica o robótica.
- Incisión transuretral de la próstata (>30cc).
- Vaporización transuretral de la próstata.
- Vaporización fotoselectiva de la próstata (120-180W).
- Elevación de uretra prostática (Urolift, 30-80cc, sin lóbulo medio).
- Terapia transuretral de microondas.
- Terapia térmica de vapor de agua (30-80).
- Enucleación prostática láser (HoLEP, ThuLEP).
- Hidroablación prostática (Aquablation, 30-80cc).
- Embolización arterial prostática.

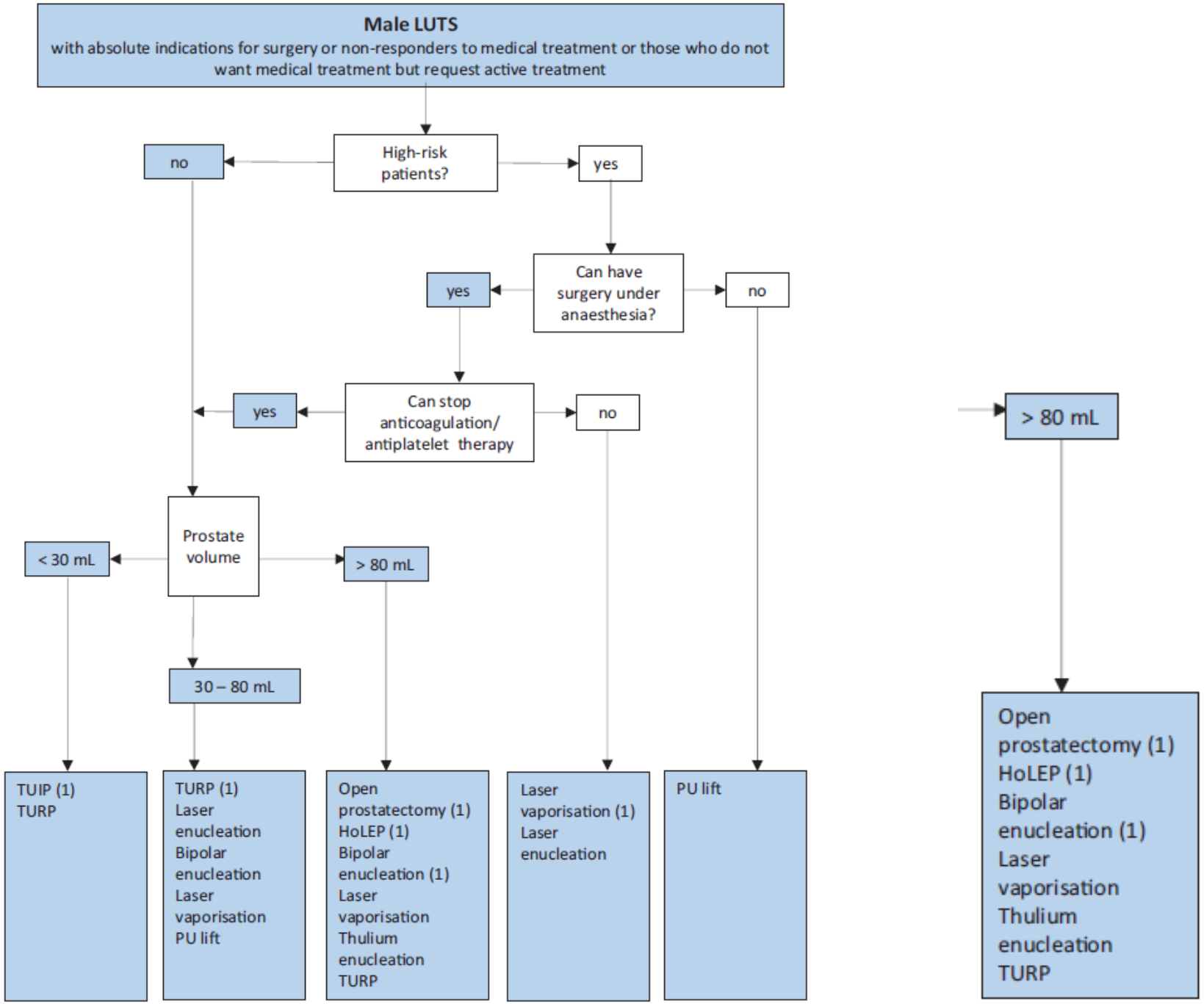
Resección Transuretral de Próstata (RTUP)

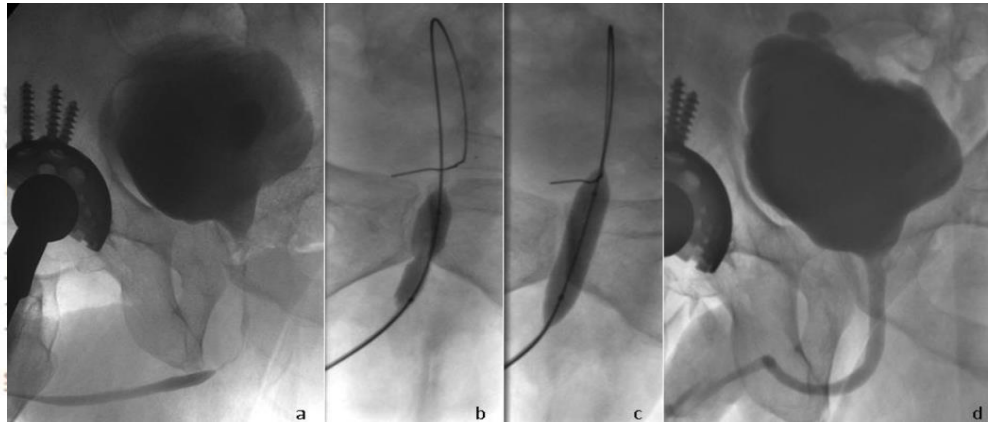
- Qmax en un +162%, reducción del IPSS en -70%, mejora QoL -69% y disminución del RPM -77% (8).
- Similar eficacia entre RTUP monopolar y bipolar, bipolar con mayor seguridad perioperatoria (menor tasa de transfusión de hemoderivados, menor retención de coágulos, prácticamente desaparición del Sd. postRTU y menor tiempo de hospitalización) (9).
- Transfusión sanguínea 2% (0-9%), ITU 4.1% (0-22%), RAO 4.5% (0-13.3%), DE 5-9%.
- Menor coste para RTUP bipolar (10).
- Tasa de reintervención 1-2% al año (11).

Recommendation	Strength rating
Offer bipolar- or monopolar-transurethral resection of the prostate to surgically treat moderate-to-severe LUTS in men with prostate size of 30-80 mL.	Strong

Transurethral Resection of the Prostate (TURP)

27. TURP should be offered as a treatment option for patients with LUTS/BPH. (Moderate Recommendation; Evidence Level: Grade B)


Male LUTS
with absolute indications for surgery or non-responders to medical treatment or those who do not want medical treatment but request active treatment
High-risk patients?
no
yes
Can have surgery under anaesthesia?
yes
no
Can stop anticoagulation/ antiplatelet therapy
yes
no
Prostate volume
< 30 mL
30 – 80 mL
> 80 mL
> 80 mL
TUIP (1)
TURP
TURP (1)
Laser enucleation
Bipolar enucleation
Laser vaporisation
PU lift
Open prostatectomy (1)
HoLEP (1)
Bipolar enucleation (1)
Laser vaporisation
Thulium enucleation
TURP
Laser vaporisation (1)
Laser enucleation
PU lift
Open prostatectomy (1)
HoLEP (1)
Bipolar enucleation (1)
Laser vaporisation
Thulium enucleation
TURP



- Balón de dilatación prostática.
  - *Estudiado en la década de 1990.*

- Stents uretrales
  - *Múltiples modelos, materiales.*
  - *Complicaciones (calcificaciones, infecciones, migración, dolor, incontinencia).*

- Transurethral microwave therapy (TUMT)
  - *A los 4 años RTUP 40.5% y tratamiento médico 57%.*
- Transurethral needle ablation (TUNA)
  - *Calor generado mediante radiofrecuencia hasta 100ºC durante 20-30 seg.*
  - *Retratamiento 23% a los 5 años.*

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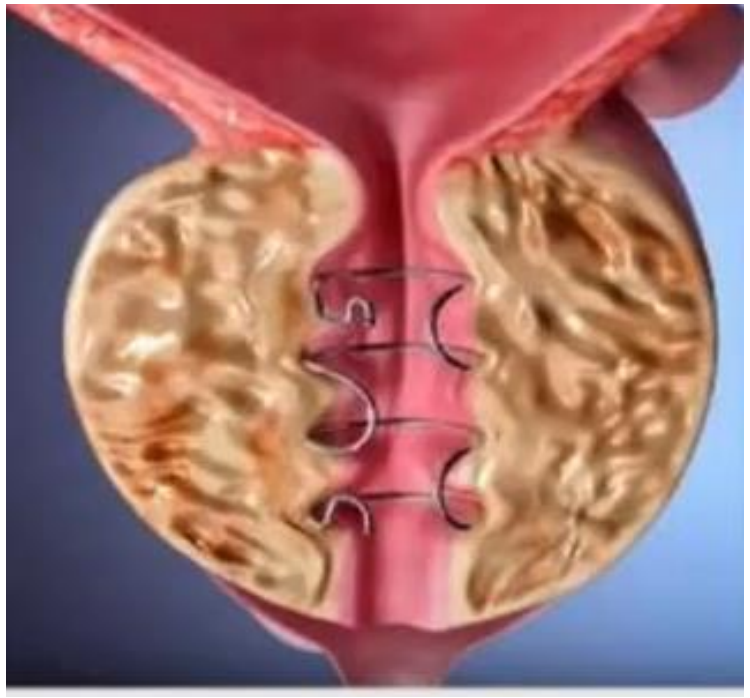

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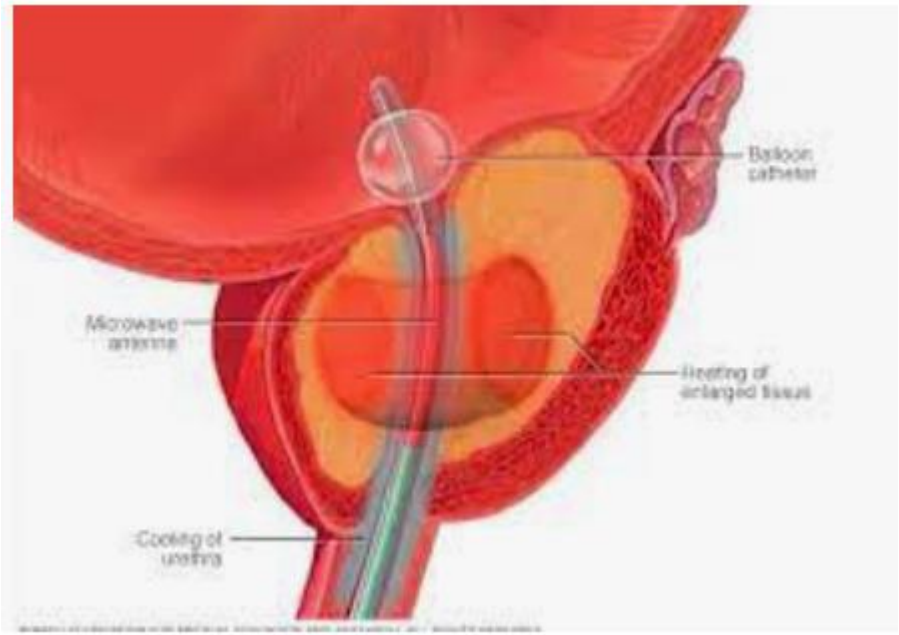

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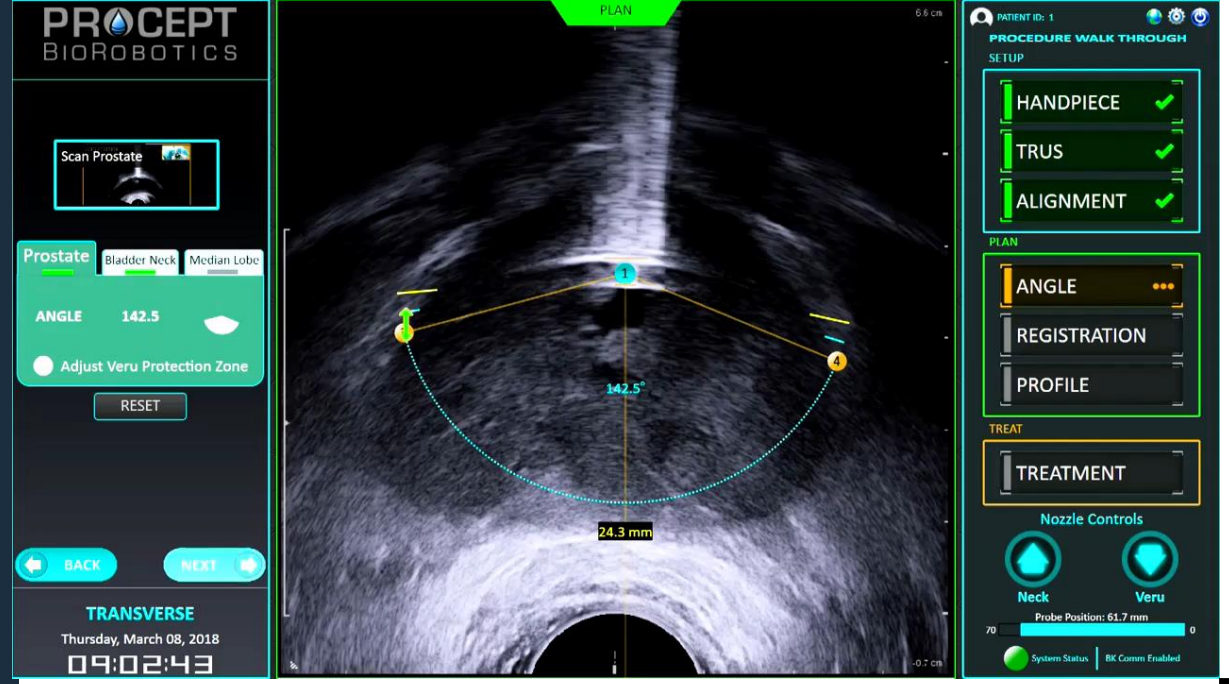
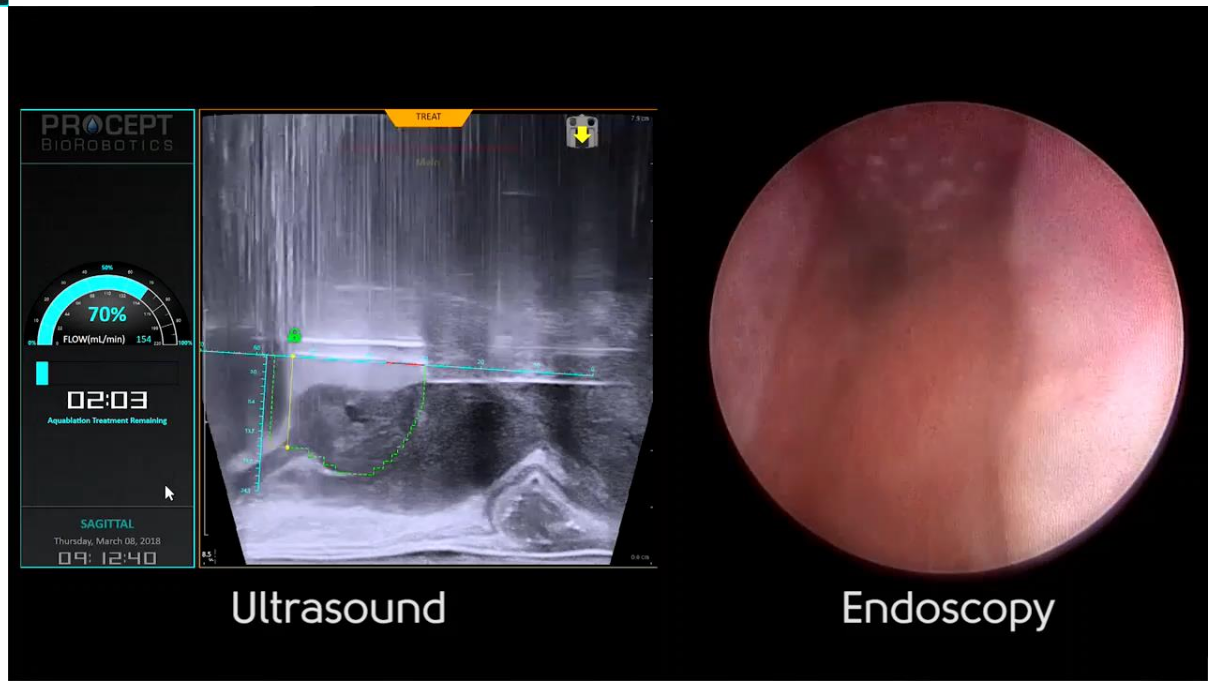
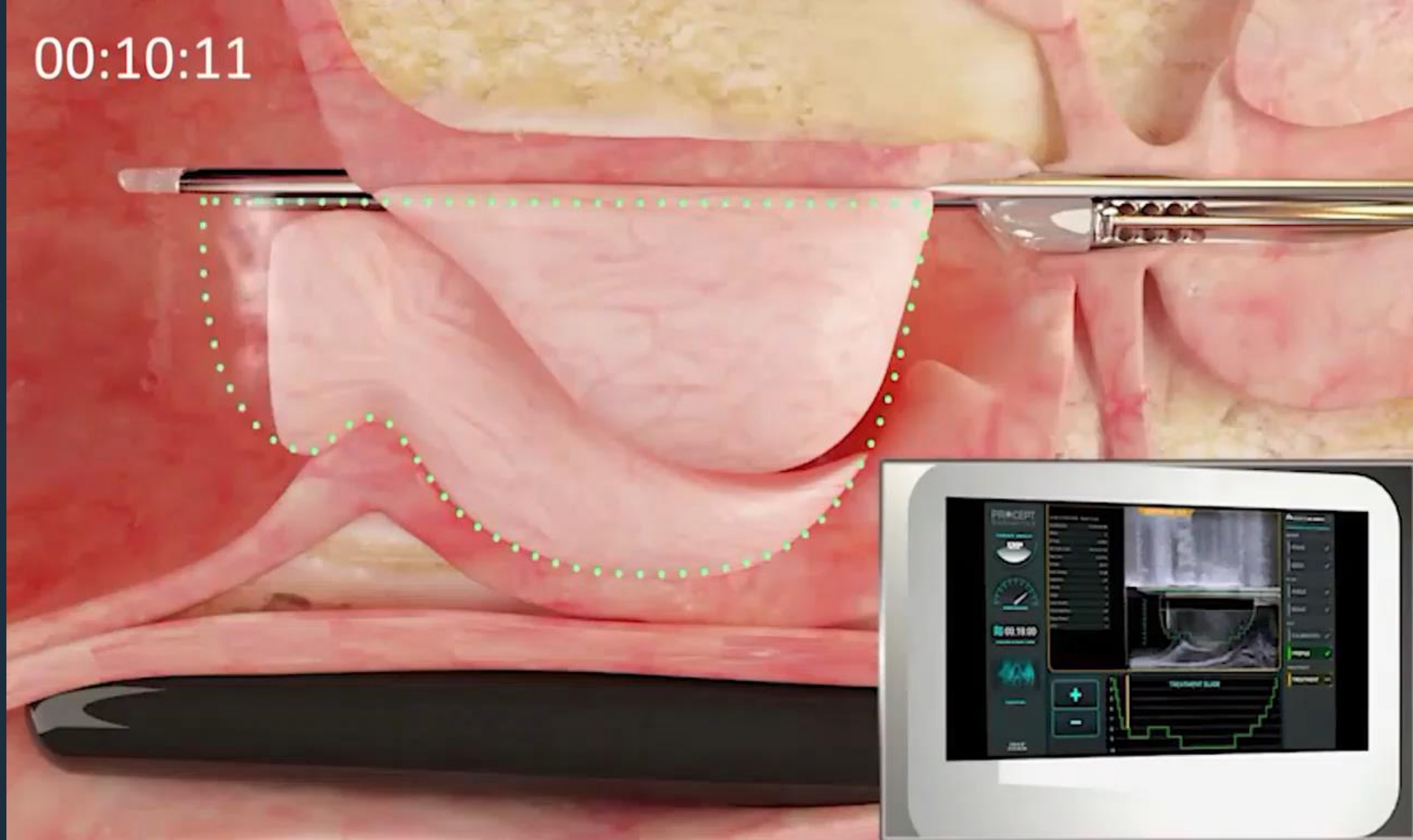
  - *Retratamiento 23% a los 5 años.*

Ablación robótica con chorro de agua guiada por imágenes. Aquablation ® (Procept BioRobotics, Redwood Shores, CA)

- Hidrodisección de tejido prostático, preservando estructuras con colágeno como vasos sanguíneos y cápsula quirúrgica, sin generar calor.
- Bajo anestesia raquídea o general.
- Control ecográfico continuo.
- Produndidad máxima 24mm.
- Necesidad de procedimiento auxiliar para hemostasia (tracción de sonda vesical, electrocoagulación, energía láser).


PROCEPT
BioRobotics
Scan Prostate
Prostate
Bladder Neck
Median Lobe
ANGLE 142.5
Adjust Veru Protection Zone
RESET
BACK
NEXT
TRANSVERSE
Thursday, March 08, 2018
09:02:43
PLAN
142.5°
24.3 mm
PATIENT ID: 1
PROCEDURE WALK THROUGH
SETUP
HANDPIECE
TRUS
ALIGNMENT
PLAN
ANGLE
REGISTRATION
PROFILE
TREAT
TREATMENT
Nozzle Controls
Neck
Veru
Probe Position: 61.7 mm
System Status
BK Comm Enabled


PROCEPT
BioRobotics
70%
FLOW(mL/min) 154
02:03
Aquablation Treatment Remaining
SAGITTAL
Thursday, March 08, 2018
09:12:40
TREAT
Ultrasound
Endoscopy


00:10:11

Randomized Controlled Trial > Can J Urol. 2018 Jun;25(3):9317-9322.

Aquablation versus transurethral resection of the prostate: 1 year United States - cohort outcomes

Veeru Kasivisvanathan [1], Muddassar Hussain

Affiliations + expand

PMID: 29900819

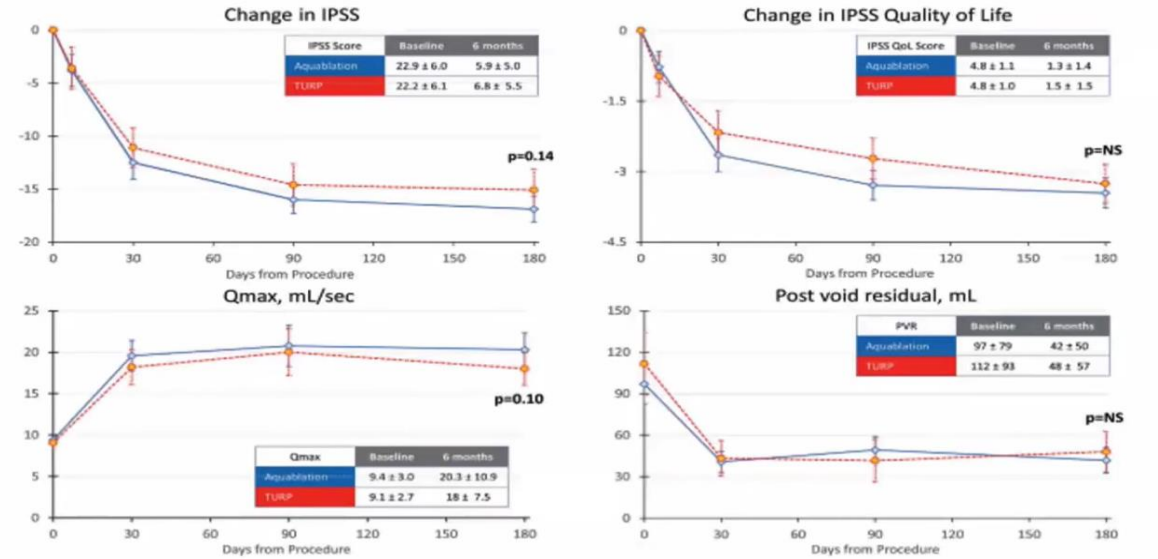


Figure 2. Change in I-PSS, I-PSS quality of life, maximum urinary flow (*Qmax*) and PVR by treatment and time

ELSEVIER

Urology
Volume 129, July 2019, Pages 1-7

Rapid Communication

Aquablation for Benign Prostatic Hyperplasia in Large Prostates (80-150 cc): 1-Year Results

Naeem Bhojani [a], Mohamed Bidair [b], Kevin C. Zorn [a], Andrew Trainer [c], Andrew Arther [c], Eugene Kramolowsky [d], Leo Doumanian [e], Dean Elterman [f], Ronald P. Kaufman [g], James Lingeman [h], Amy Krambeck [h], Gregg Eure [i], Gopal Badlani [j], Mark Plante [k], Edward Uchio [l], Greg Gin [l], Larry Goldenberg [m], Ryan Paterson [m] ... Claus Roehrborn [p]

- Volumen prostático medio 107cc (80-150cc), tiempo de ablación de 8 min, tiempo de intervención de 37 min y estancia media hospitalaria 1.6 días.
- IPSS mejoría de 23.3 a 6.2, Qmax con mejoría de 12.5ml/s.
- Transfusión sanguínea 9.9%, reintervención para control de hemostasia 3%.
- 33% disminución de puntuación en IIEF 5.

Table 1 Patient characteristics and post-operative outcomes of the 5 clinical trials of Aquablation

	Water ($n=116$)	Water II ($n=101$)	Francais water ($n=30$)	Single center report from Bach et al. ($n=118$)	Open water ($n=178$)
Year Treated	2015–2016	2017	2017	2017–2018	2017–2018
Countries	Australia New Zealand United Kingdom United States	Canada United States	France	Germany	Australia Lebanon Germany New Zealand United Kingdom
Mean age, years (SD)	66.0 (7.3)	67.5 (6.6)	Median 68 (IQR 61–72)	69 (8)	67.7 (8.5)
Mean prostate size, ml (SD)	54.1 (16.2)	107.4 (22.1)	Median 60 (IQR 45–69)	64.3 (32)	59.3 (26.9)
Mean PSA, ng/dL (SD)	3.7 (3.0)	7.1 (5.9)	Median 2.5 (IQR 1.9–5)	4.3 (4.7)	4.3 (3.9)
Mean preop IPSS (SD)	22.9 (6.0)	23.2 (6.3)	Median 18.5 (IQR 15–24)	21.1 (6.9)	21.6 (7.2)
Mean preop Qmax, mL/s (SD)	9.4 (3.0)	8.7 (3.4)	N/A	10.8 (5.8)	N/A
Mean operative time, minutes (SD)	32.8 (16.5)	37 (13)	Median 30.5 (IQR 24–35)	20 ± 7.9	24.2 (11.3)
Mean resection time, minutes (SD)	3.9 (1.4)	8.0 (3.0)	Median 4 (IQR 3.1–4.9)	3.2 (1.22)	N/A
Mean hemoglobin drop, g/dL	− 1.8	− 2.9	− 2.9	− 1.8	− 2
Length of stay, days (SD)	1.4 (0.7)	1.6 (1.0)	Median 2 (IQR 2–4)	N/A	2.2 (1.7)
No. of blood transfusions (%)	1 (0.9)	10 (9.9)	1 (3.3)	3 (2.5)	5 (2.7)
% Antegrade ejaculation preservation	90	81	73	73	92
% Surgical retreatment	2.6	0	0	0	0
% Qmax change at 1 year	+206	+243	+163	+200	+210
% IPSS change at 1 year	− 67	− 74	− 80	− 65	− 71

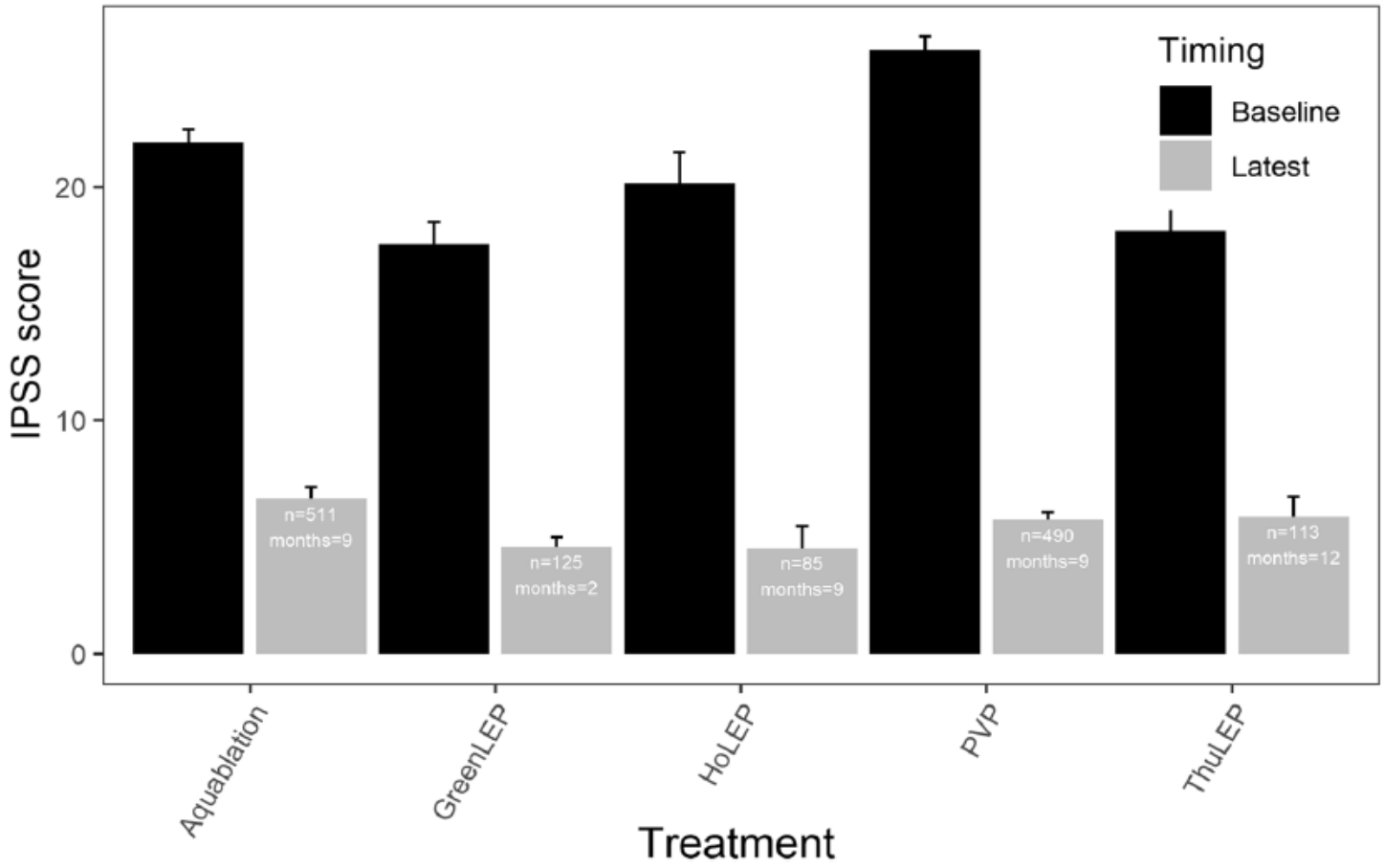
World Journal of Urology
https://doi.org/10.1007/s00345-020-03137-8

ORIGINAL ARTICLE

Operative time comparison of aquablation, greenlight PVP, ThuLEP, GreenLEP, and HoLEP

David-Dan Nguyen[1] · Vincent Misraï[2] · Thorsten Bach[3] · Naeem Bhojani[4] · James E. Lingeman[5] · Dean S. Elterman[6] · Kevin C. Zorn[4]

Received: 20 October 2019 / Accepted: 12 February 2020



Aquablation	0.16 min/g
GreenLEP	0.32 min/g
HoLEP	0.28 min/g
ThuLEP	0.32 min/g
PVP	0.63 min/g

Aquablation ®

Recommendations	Strength rating
Offer Aquablation* to patients with moderate-to-severe LUTS and a prostate volume of 30-80 mL as an alternative to TURP.	Weak
Inform patients about the risk of bleeding and the lack of long-term follow-up data.	Strong

**Approach remains under investigation*

Robotic Waterjet Treatment (RWT)

40. Robotic waterjet treatment (RWT) may be offered as a treatment option to patients with LUTS/BPH provided prostate volume 30-80cc. (Conditional Recommendation; Evidence Level: Grade C)

Ablación por vapor de agua por convección (WAVE) Rezum

Prostatic Diseases and Male Voiding Dysfunction

Rezūm Water Vapor Thermal Therapy for Lower Urinary Tract Symptoms Associated With Benign Prostatic Hyperplasia: 4-Year Results From Randomized Controlled Study

Kevin T. McVary, Tyson Rogers, and Claus G. Roehrborn

- Usa radiofrecuencia para crear energía térmica en forma de vapor de agua, energía convectiva (no conductiva).
- Mejoría sintomática a partir de 2 semanas. Reabsorción 1-3 meses.
- IPSS disminuyó de 21,4 a 11,4 a los 4 años y IPSS-QoL de 4,3 a 2,3. Qmax aumentó de 9,5 ml/s a 13,7 ml/s y la PVR disminuyó de 84 ml a 75 ml.
- No deterioro de función eréctil, ni eyaculatoria (16).
- Reintervención a los 4 años 4.4%, 5.2% con medicación (17).
- No estudios randomizados comparativos con técnica estándar.

Randomized Controlled Trial > J Urol. 2018 Aug;200(2):405-413. doi: 10.1016/j.juro.2018.02.3088.
Epub 2018 Mar 1.

Three-Year Treatment Outcomes of Water Vapor Thermal Therapy Compared to Doxazosin, Finasteride and Combination Drug Therapy in Men with Benign Prostatic Hyperplasia: Cohort Data from the MTOPS Trial

Nikhil Gupta [1], Tyson Rogers [1], Bradley Holland [1], Sevann Helo [1], Danuta Dynda [1], Kevin T McVary [2]

THE JOURNAL OF SEXUAL MEDICINE

EPIDEMIOLOGY & RISK FACTORS

ORIGINAL RESEARCH

Is Sexual Function Better Preserved After Water Vapor Thermal Therapy or Medical Therapy for Lower Urinary Tract Symptoms due to Benign Prostatic Hyperplasia?

Check for updates

Kevin T. McVary, MD,[1] Tyson Rogers, MS,[2] Joseph Mahon, MD,[1] and Nikhil K. Gupta, MD[3]

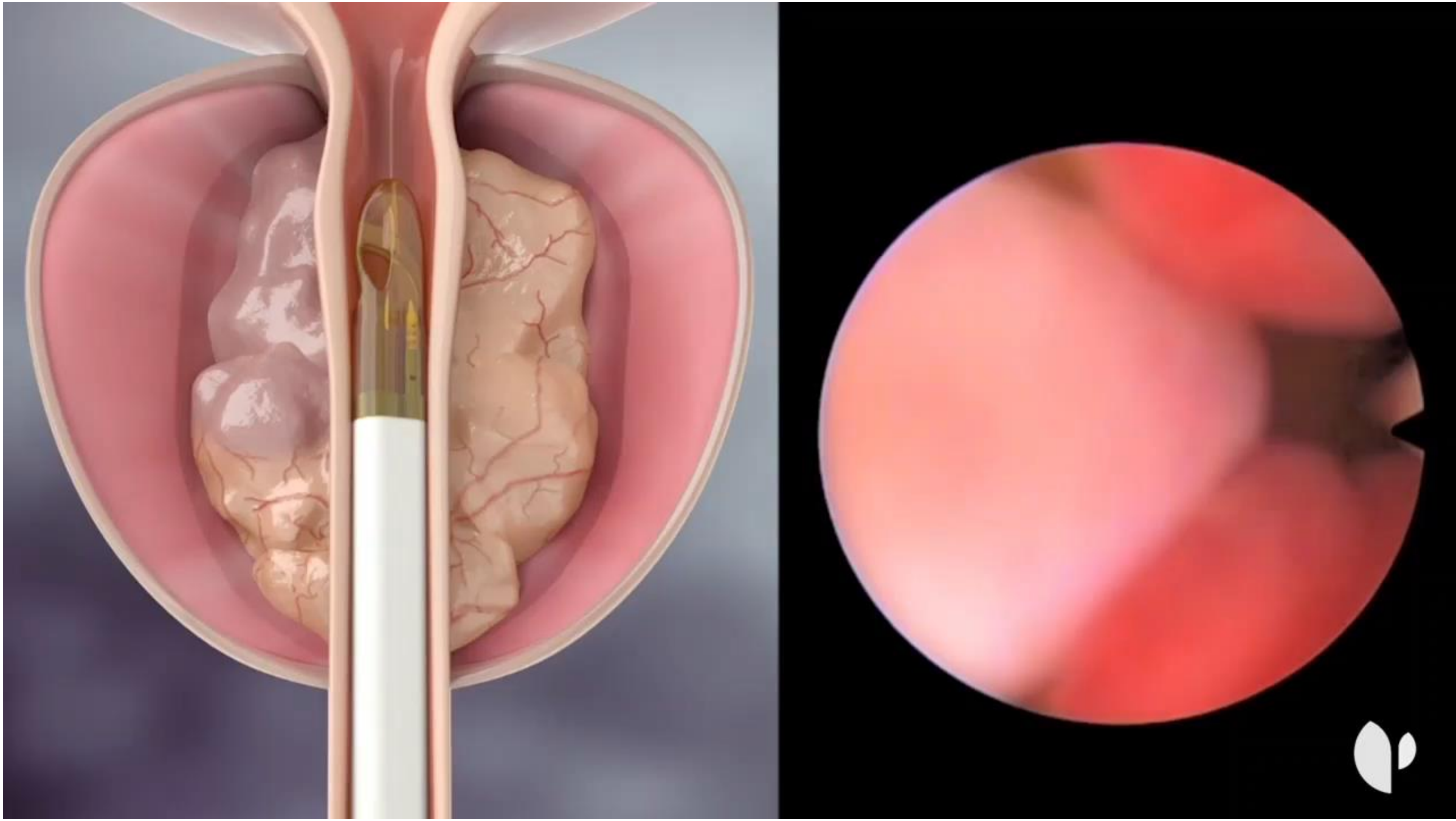
Qmax mejora 4-5ml/s tras Rezum, superior a doxazosina, finasteride o terapia combinada a los 12 y 24 meses.

La terapia médica (en especial terapia combinada), deterioro de la función sexual, sin deterioro con Rezum.

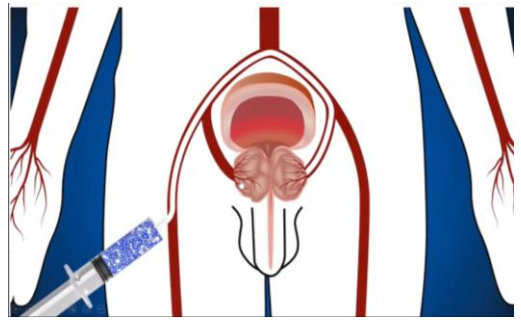
Water Vapor Thermal Therapy (WVTT)

36. WVTT should be considered as a treatment option for patients with LUTS/BPH provided prostate volume 30-80cc. (Moderate Recommendation; Evidence Level: Grade C)

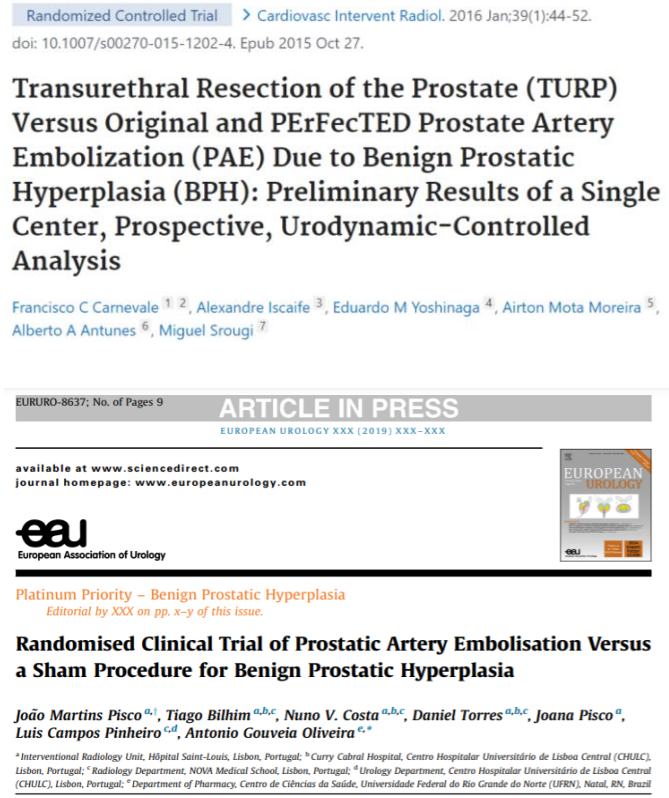
37. WVTT may be offered as a treatment option to eligible patients who desire preservation of erectile and ejaculatory function. (Conditional Recommendation; Evidence Level: Grade C)



Embolización arterial prostática



- Bajo anestesia local. Acceso femoral o radial.
- Embolización de arterias prostáticas mediante inyección intravascular de microesferas.
- Radiación utilizada 28mSv (TC abdominal 11.4mSv).
- A los 6 meses mejoría de Qmax 4.2ml/s, disminución de RPM 61ml.
- Menor estancia hospitalaria, menor pérdida sanguínea, menor tiempo de sondaje vesical, con mayor tiempo operatorio que RTUP.
- Reducción de volumen prostático medio 12.17—17ml, desobstrucción efectiva según estudios de presión-flujo 34-56%, mayor beneficio próstatas >80cc (21).
- Menores complicaciones que RTUP (estudios contradictorios) (22).



Randomized Controlled Trial > Cardiovasc Intervent Radiol. 2016 Jan;39(1):44-52.
doi: 10.1007/s00270-015-1202-4. Epub 2015 Oct 27.

Transurethral Resection of the Prostate (TURP) Versus Original and PErFecTED Prostate Artery Embolization (PAE) Due to Benign Prostatic Hyperplasia (BPH): Preliminary Results of a Single Center, Prospective, Urodynamic-Controlled Analysis

Francisco C Carnevale [1 2], Alexandre Iscaife [3], Eduardo M Yoshinaga [4], Airton Mota Moreira [5], Alberto A Antunes [6], Miguel Srougi [7]

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EUROPEAN UROLOGY XXX (2019) XXX–XXX

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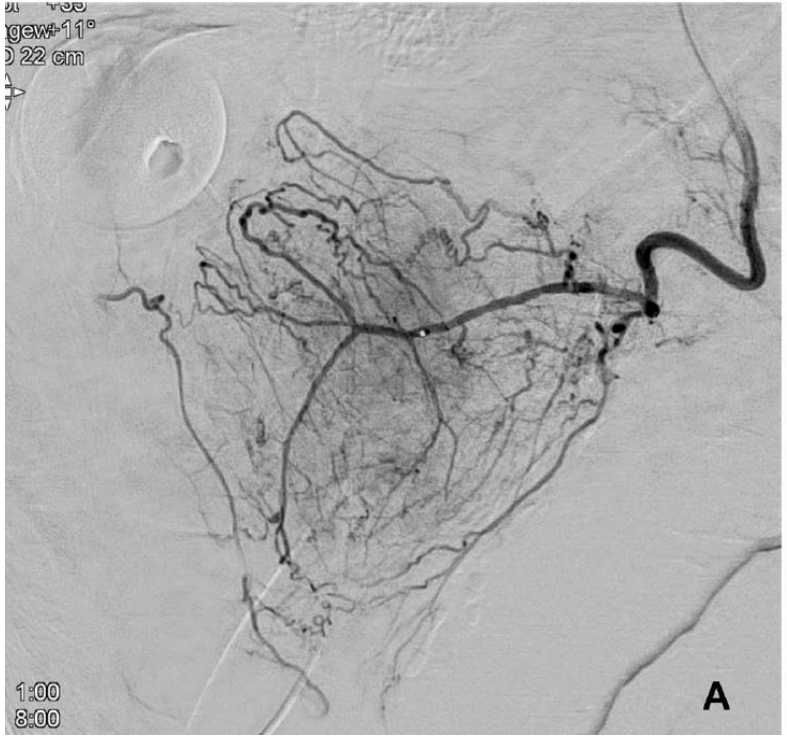
European Association of Urology

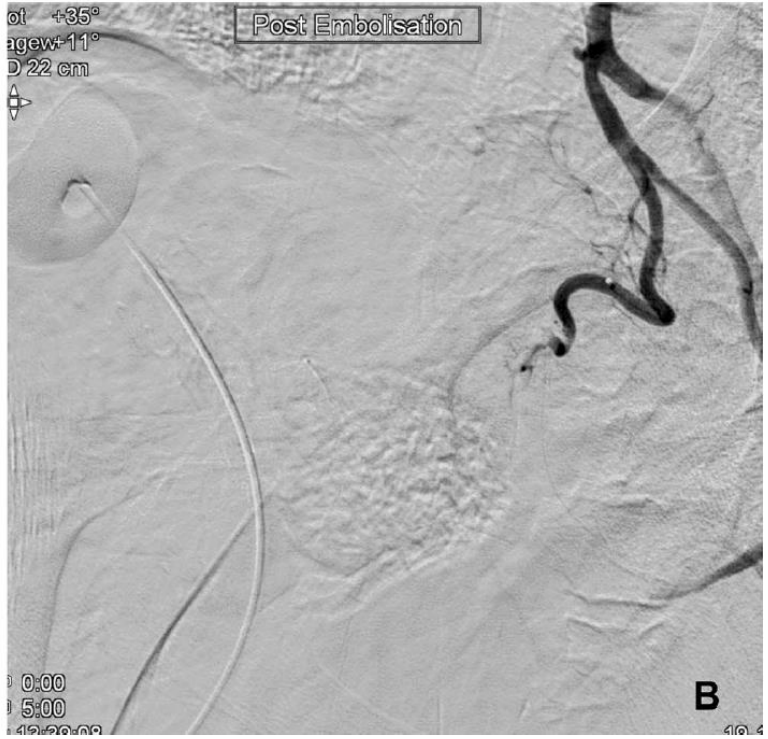
Platinum Priority – Benign Prostatic Hyperplasia
Editorial by XXX on pp. x–y of this issue.

Randomised Clinical Trial of Prostatic Artery Embolisation Versus a Sham Procedure for Benign Prostatic Hyperplasia

João Martins Pisco [a,†], Tiago Bilhim [a,b,c], Nuno V. Costa [a,b,c], Daniel Torres [a,b,c], Joana Pisco [a], Luis Campos Pinheiro [c,d], Antonio Gouveia Oliveira [e,]*

[a] Interventional Radiology Unit, Hôpital Saint-Louis, Lisbon, Portugal; [b] Curry Cabral Hospital, Centro Hospitalar Universitário de Lisboa Central (CHULC), Lisbon, Portugal; [c] Radiology Department, NOVA Medical School, Lisbon, Portugal; [d] Urology Department, Centro Hospitalar Universitário de Lisboa Central (CHULC), Lisbon, Portugal; [e] Department of Pharmacy, Centro de Ciências da Saúde, Universidade Federal do Rio Grande do Norte (UFRN), Natal, RN, Brazil





- Complicaciones Clavien-Dindo ≥3 2.5%. Efectos adversos levesy temporales, síntomas de llenado, ITU, hematuria, no alteraciones eyaculatorias. Descritas necrosis vesical, peneana, isquemia rectal.
- Reintervención a 1 y 2 años, 20% y 9.4% respectivamente.

Bajo anestesia local.
No reposo tras el procedimiento.
No suspensión de anticoagulantes.
No limitación de tamaño prostático.
Retiro de sonda vesical >85%.

World Journal of Urology
https://doi.org/10.1007/s00345-019-03044-7

ORIGINAL ARTICLE

An updated meta-analysis of prostatic arterial embolization versus transurethral resection of the prostate in the treatment of benign prostatic hyperplasia

Xin jian Xu[1] · Jingjing Li[2] · Xiang zhong Huang[1] · Qiang Liu[3]

Received: 21 September 2019 / Accepted: 25 November 2019

- 9 RCT.
- 860 pacientes.

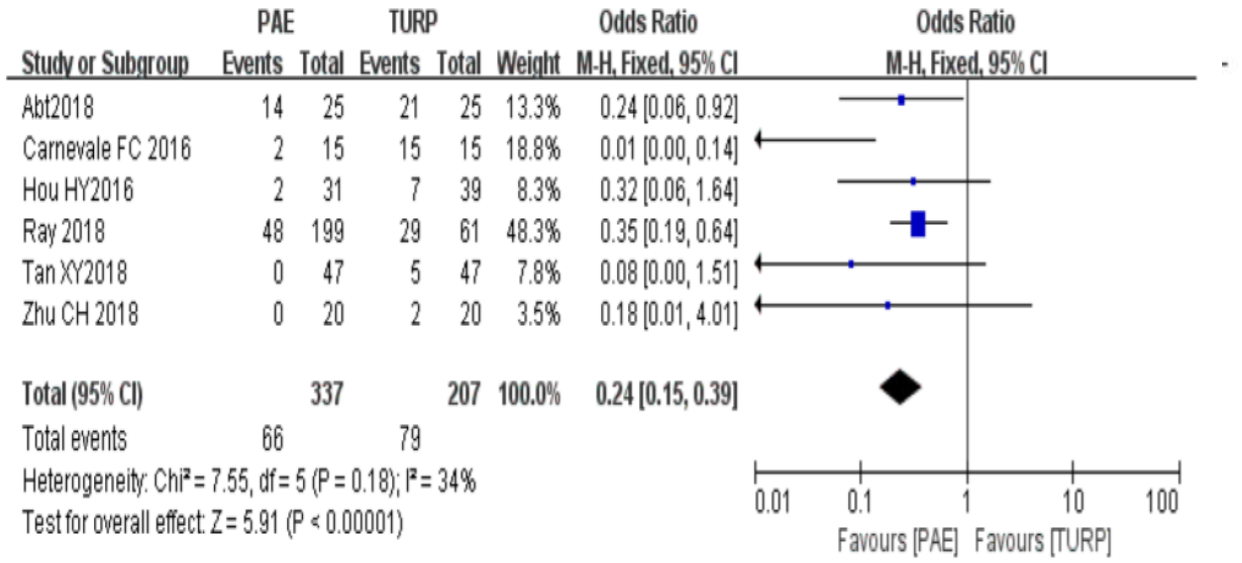


Fig. 8 Forest plot for sexual dysfunction between TURP and PAE for BPH

Embolización arterial prostática

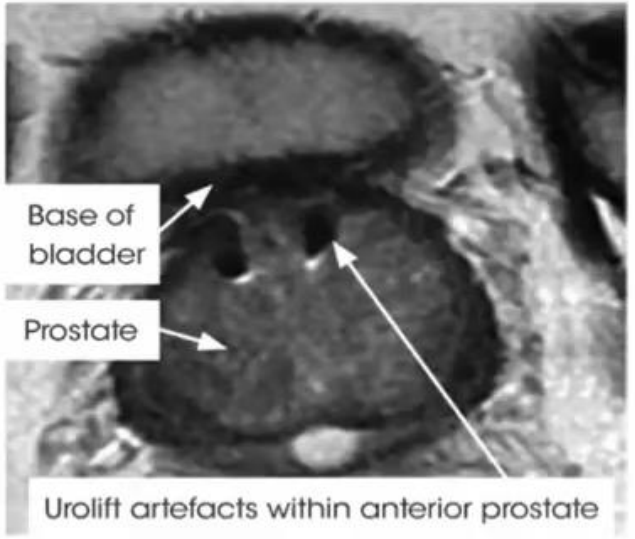
Recommendations	Strength rating
Offer prostatic artery embolisation (PAE)* to men with moderate-to-severe LUTS who wish to consider minimally invasive treatment options and accept less optimal outcomes compared with transurethral resection of the prostate.	Weak
Perform PAE only in units where the work up and follow-up is performed by urologists working collaboratively with trained interventional radiologists for the identification of PAE suitable patients.	Strong

**Approach remains under investigation*

Prostate Artery Embolization (PAE)

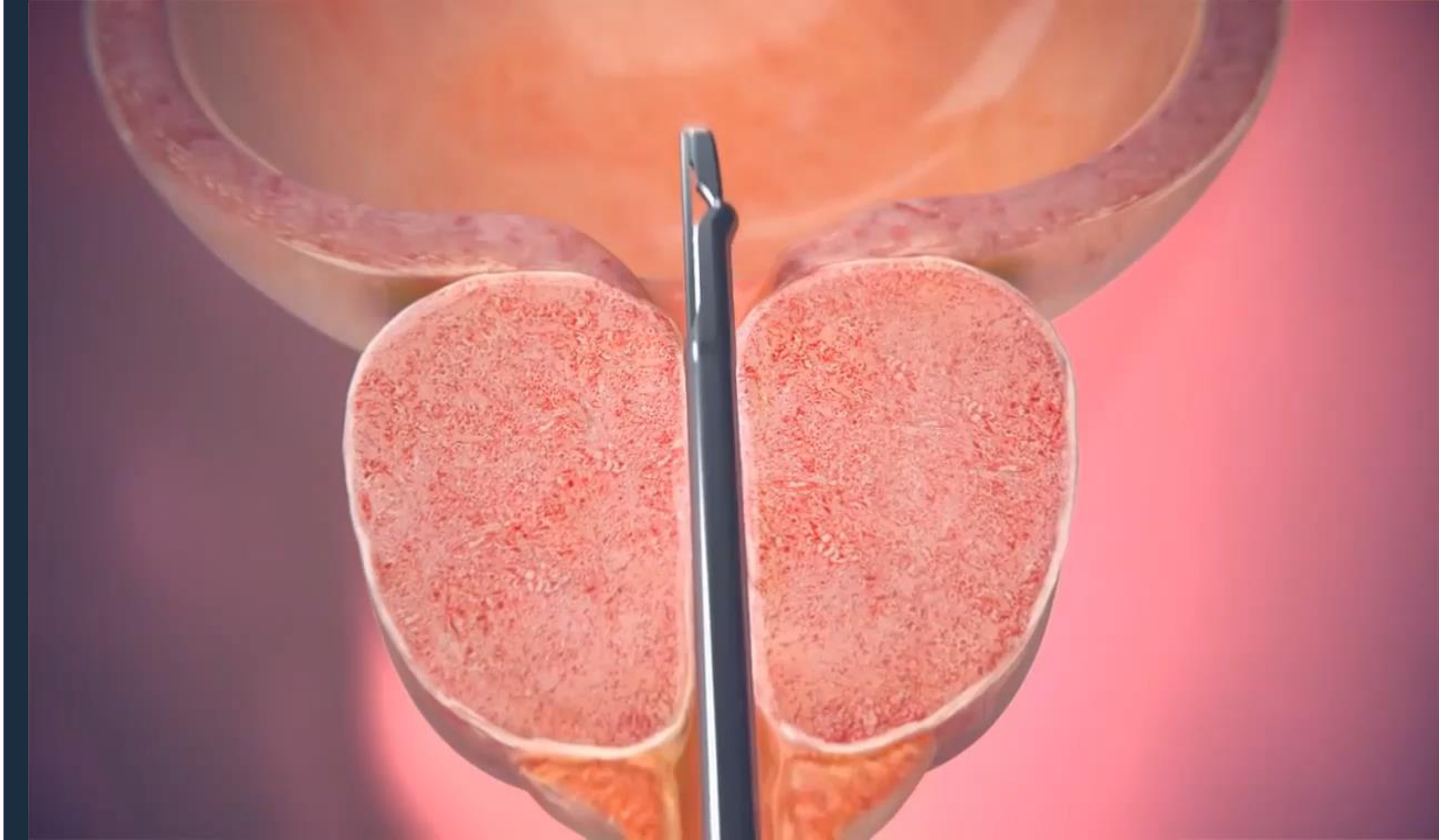
41. PAE for the routine treatment of LUTS/BPH is not supported by current data, and benefit over risk remains unclear; therefore, PAE is not recommended outside the context of clinical trials. (Expert Opinion)

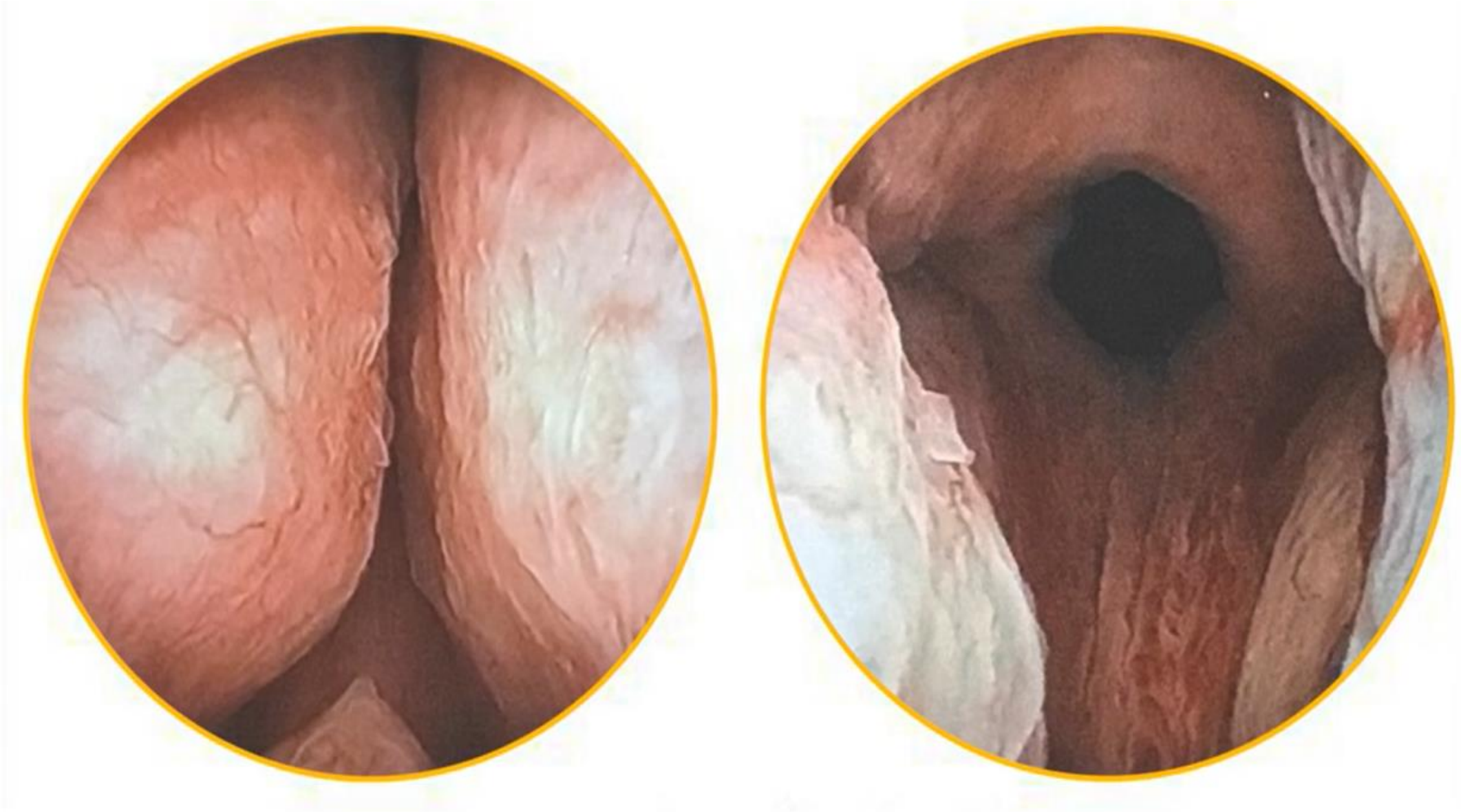
Prostatic Urethral Lift: Urolift® System (NeoTract/Teleflex, Pleasanton, CA)



MRI: T2-weighted image

- Procedimiento bajo anestesia local, sedación, bloqueo prostático.
- Compresión de lóbulos prostáticos laterales, variantes técnicas para tratar lóbulo medio (25).
- 50% de reducción en IPSS a los 3 meses, Qmax de 8.1 a 12.4ml/s, no cambios en RPM. Mantenimiento a los 5 años (23).
- A los 2 años Qmax e IPSS con valores superiores en RTUP, al igual que eyaculación retrógrada (0 vs. 40%) (24).
- No alteración eyaculatoria o disfunción eréctil de novo.
- Complicaciones: hematuria (16-63%), disuria (25-58%), dolor pélvico (5-17,9%), urgencia (7,1-10%), incontinencia transitoria (3,6-16%) y ITU (2,9-11%). Resolución en 2-4 semanas.
- Retratamiento a los 2 años 6% (RTUP) vs. 11%, a los 5 años 13.6%, 10% con administración de medicación.
- Dificultad para interpretación de imágenes en resonancia magnética





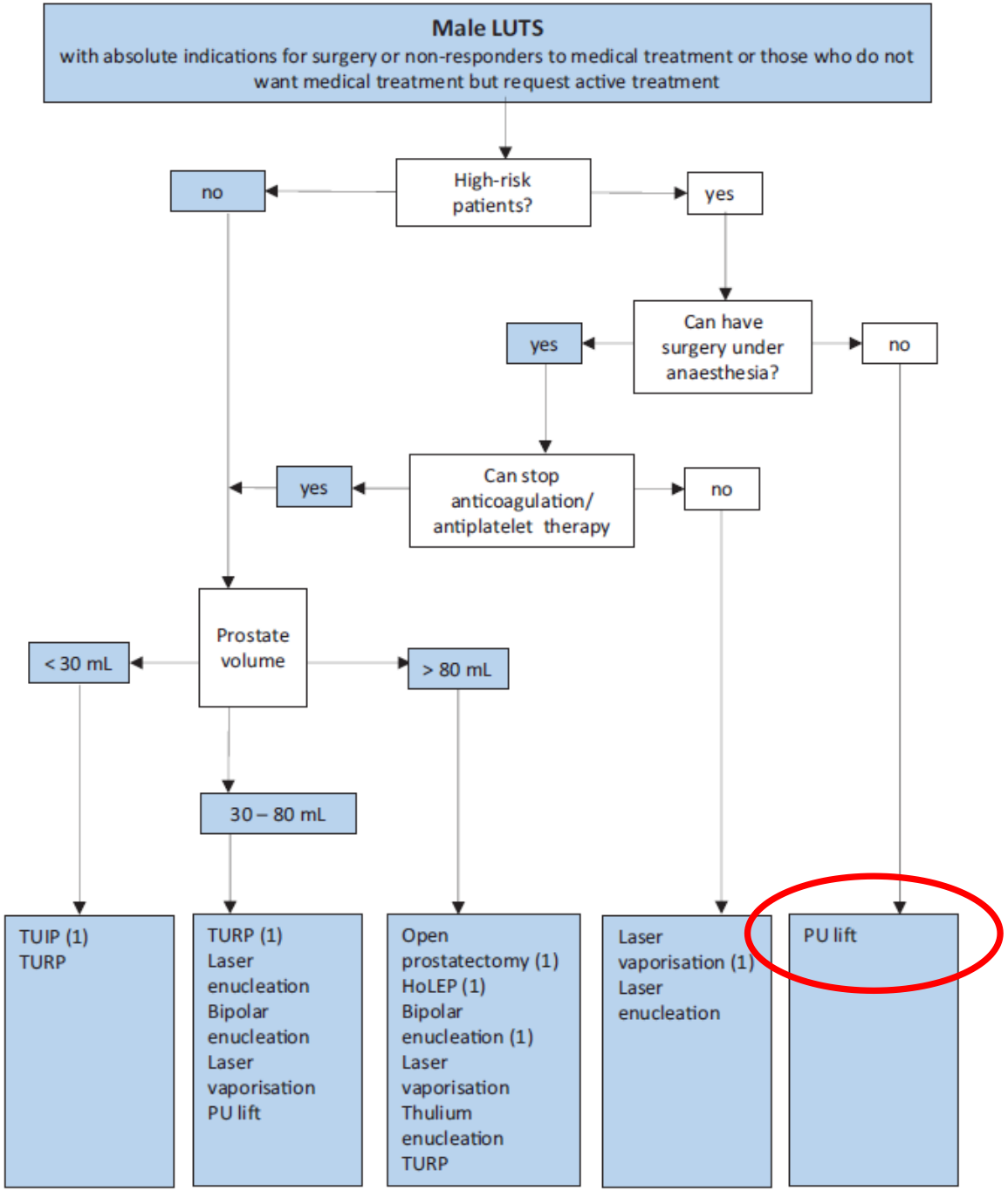
Prostatic Urethral Lift: Urolift® System

Recommendation	Strength rating
Offer Prostatic urethral lift (Urolift®) to men with LUTS interested in preserving ejaculatory function, with prostates < 70 mL and no middle lobe.	Strong

Prostatic Urethral Lift (PUL)

33. **PUL should be considered as a treatment option for patients with LUTS/BPH provided prostate volume 30-80cc and verified absence of an obstructive middle lobe. (Moderate Recommendation; Evidence Level: Grade C)**

34. **PUL may be offered as a treatment option to eligible patients who desire preservation of erectile and ejaculatory function. (Conditional Recommendation; Evidence Level: Grade C)**


Male LUTS
with absolute indications for surgery or non-responders to medical treatment or those who do not want medical treatment but request active treatment
High-risk patients?
no
yes
Can have surgery under anaesthesia?
yes
no
Can stop anticoagulation/ antiplatelet therapy
yes
no
Prostate volume
< 30 mL
> 80 mL
30 – 80 mL
TUIP (1)
TURP
TURP (1)
Laser enucleation
Bipolar enucleation
Laser vaporisation
PU lift
Open prostatectomy (1)
HoLEP (1)
Bipolar enucleation (1)
Laser vaporisation
Thulium enucleation
TURP
Laser vaporisation (1)
Laser enucleation
PU lift

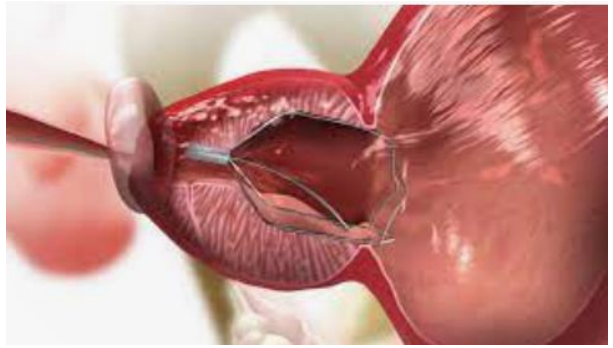
Inyecciones intraprostáticas

- Botulinum toxin-A (BoNT-A), fexapotide triflutate (NX-1207) and PRX302.
- Botulinum toxin A, no superior a placebo (29).
- PRX302 estudio fase 3, no mejoría de síntomas miccionales (30)
- NX-1207con seguimiento hasta 3.6 años, con mejoría del IPSS y menor retención aguda de orina. Efectos adversos similar a placebo (31)

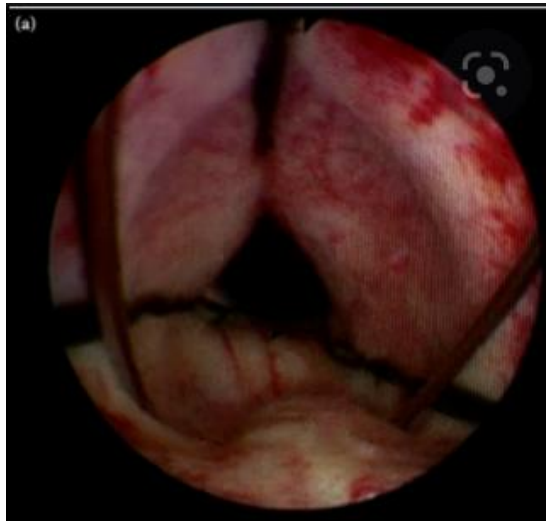
Summary of evidence	LE
Results from clinical trials have shown no clinical benefits for BoNT-A compared to placebo for the management of LUTS due to BPO.	1a
Results from clinical trials have shown clinical benefits for NX-1207 compared to placebo for the management of LUTS due to BPO.	1b

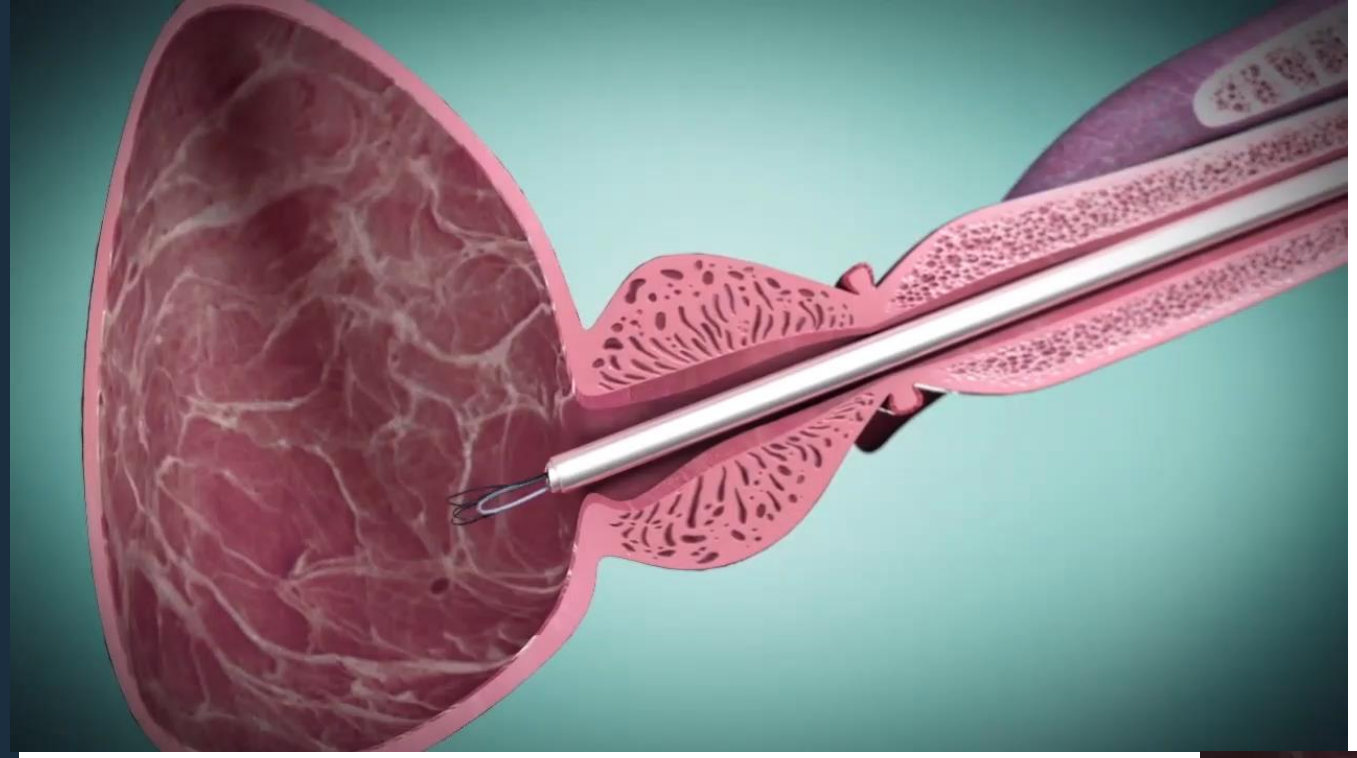
Recommendation	Strength rating
Do not offer intraprostatic Botulinum toxin-A injection treatment to patients with male LUTS.	Strong

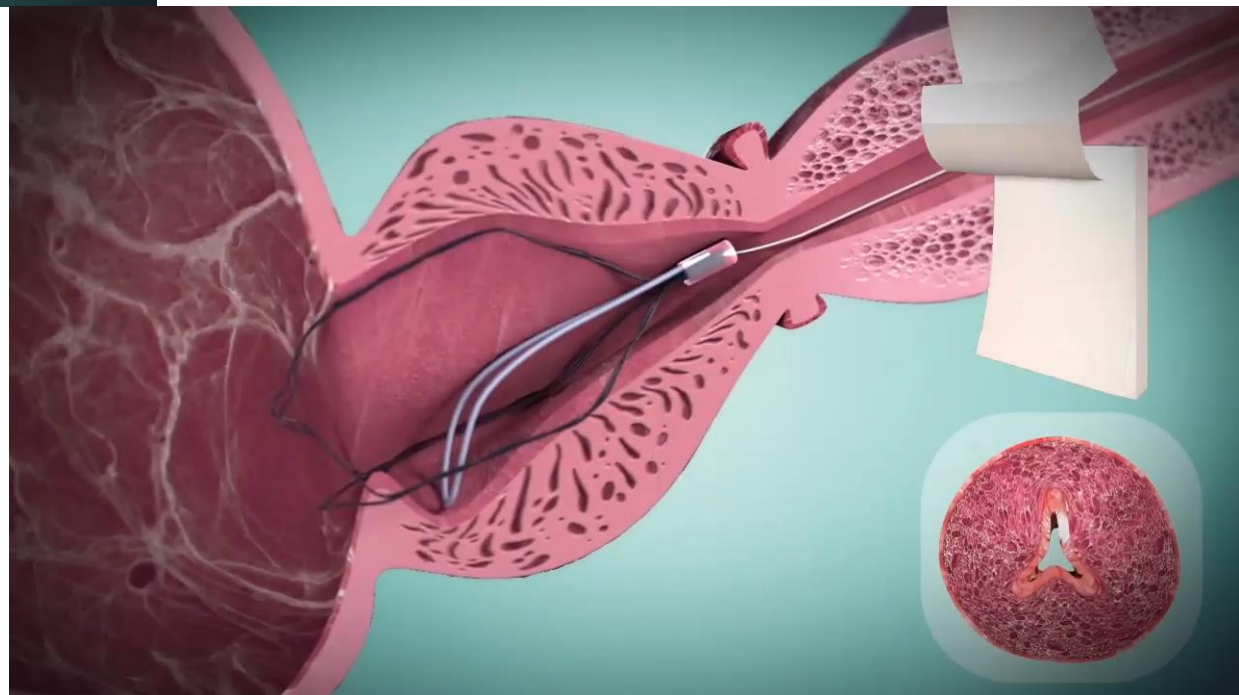
(i)TIND

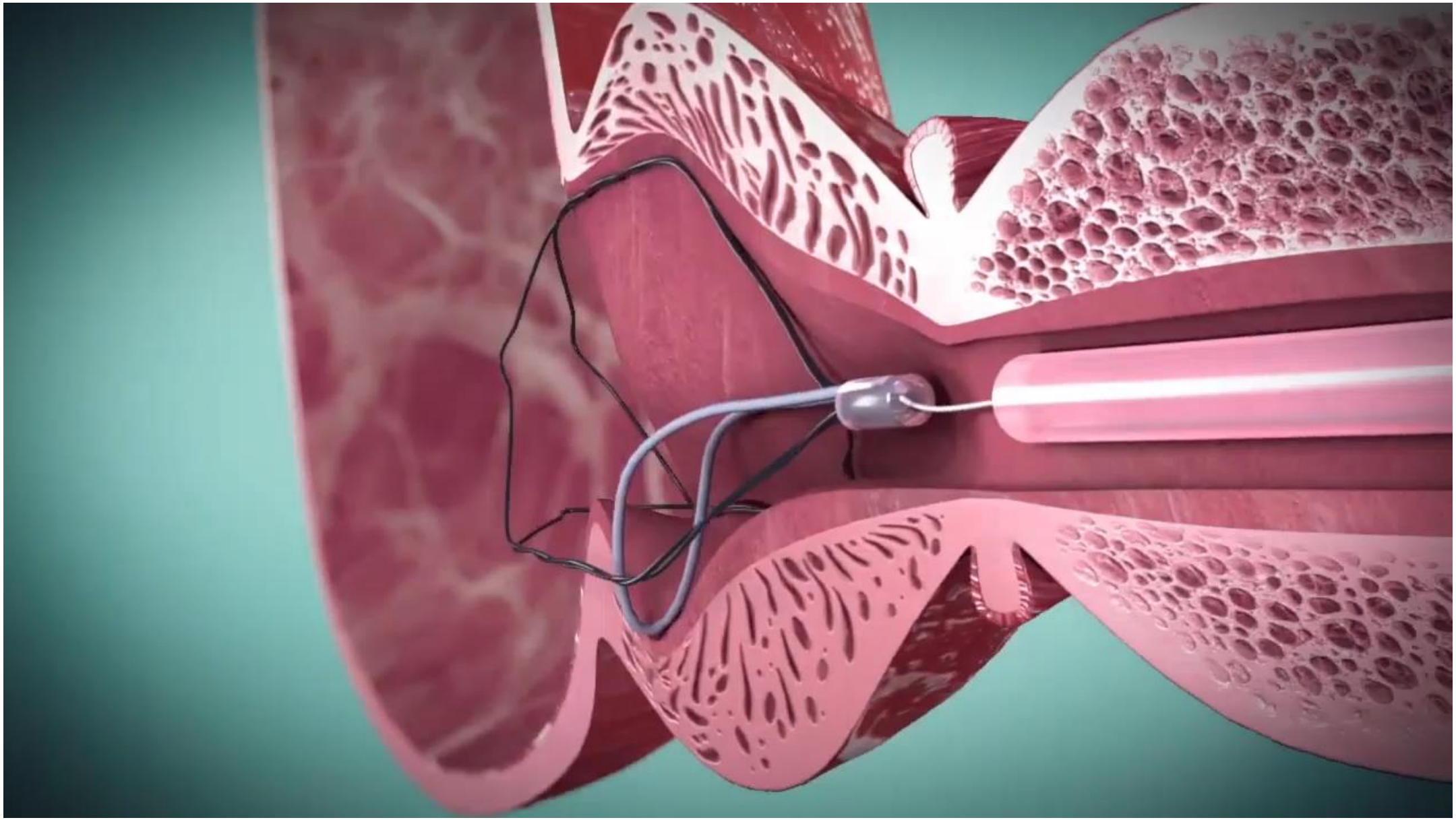


- Stent auoexpandible de nitinol, con mecanismo de anclaje antimigración.
- Implantación durante 5-7 días, causando lesiones isquémicas por compresión a las 5, 7 y 12 horarias.
- Colocación bajo anestesia local o sedación.
- A los 2 años mejoría de IPSS de 20.5 a 4 puntos, QoL de 8.5 a 1.8, incremento de Qmax 7.6 a 16ml/s.
- Complicaciones (12,5%), retención urinaria (3,1%), incontinencia por desplazamiento del dispositivo (3,1%) y infección (6,2%).
- Retratamiento 6.2% a los 2 años.
- No resultados de estudios controlados randomizados.

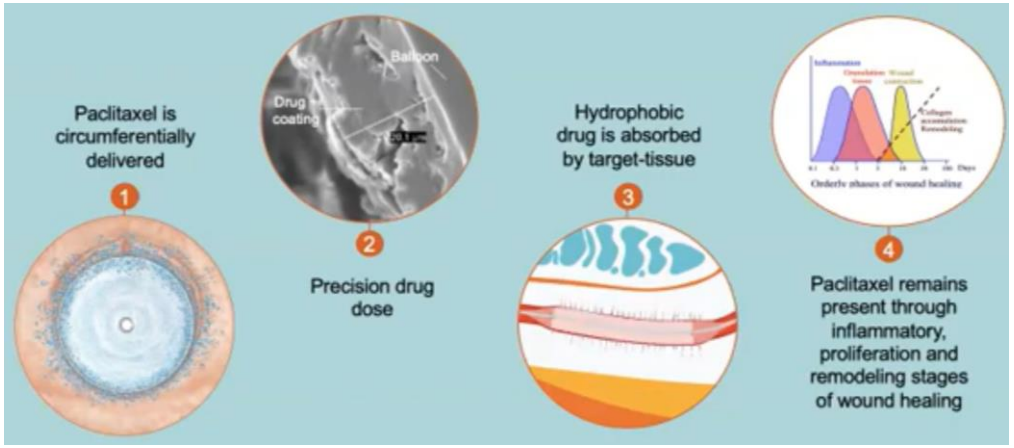








Optilume

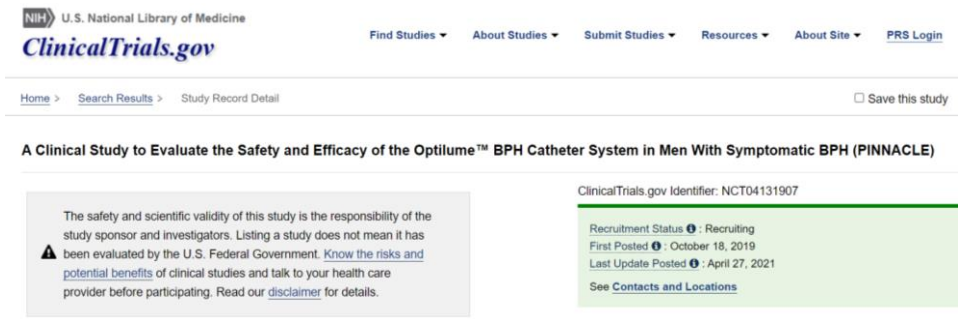


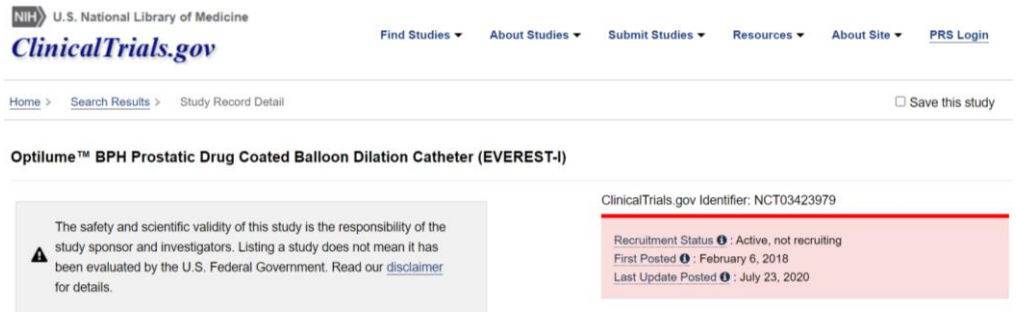
Article | Open Access | Published: 08 April 2021

One-year outcomes after treatment with a drug-coated balloon catheter system for lower urinary tract symptoms related to benign prostatic hyperplasia

Steven A. Kaplan, Merycarla Pichardo, Edwin Rijo, Gustavo Espino, Ramon Rodriguez Lay & Rafael Estrella

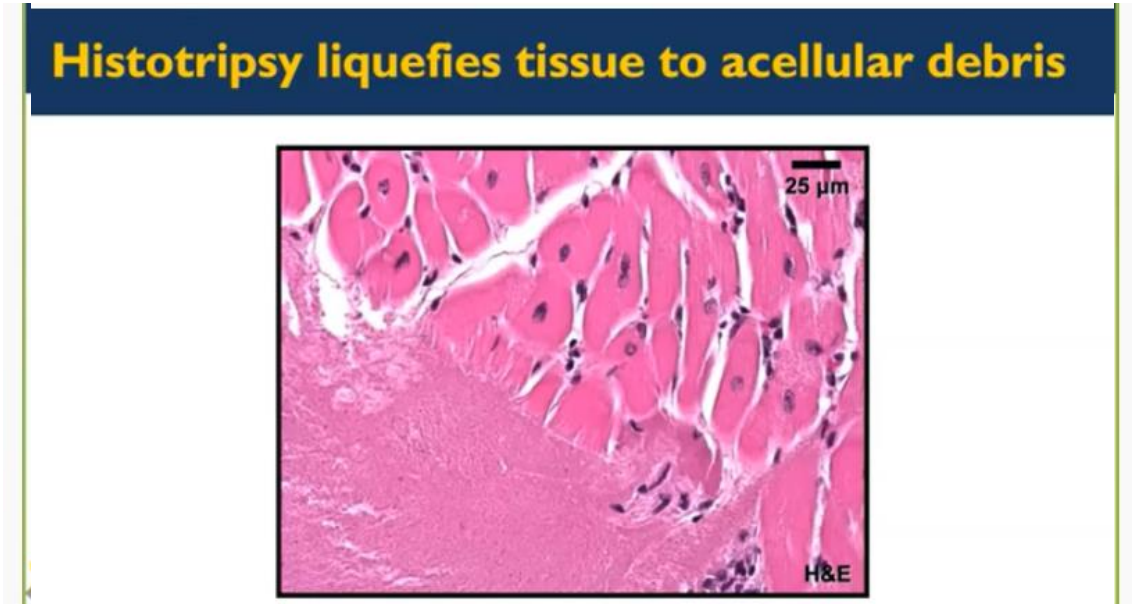
- EVEREST-I: One year optilume™ BPH catheter system efficacy and safety experience.
  - *49 pacientes.*
  - *Mejoría IPSS >40% a los 3 meses, Qmax incrementó 11ml/s a 19.4ml/s a los 12 meses, RPM de 71ml a 28ml, no disfunción eréctil de novo, 1 episodio de incontinencia de esfuerzo.*





Histotripsia (Vortx Rx System, HistoSonicsInc, MI, EE. UU.)

- Ultrasonido de alta frecuencia pulsado, sin efecto térmico, creando cavidad en los tejidos (lucuefacción).
- En modelos animales reducción del 31% del tamaño prostático.



- 25 pacientes, volumen protático 30-80cc.
- Disminución de IPSS del 52% al mes y 44% a los 6 meses.

› Urology. 2018 Apr;114:184-187. doi: 10.1016/j.urology.2017.12.033. Epub 2018 Jan 9.

Histotripsy Treatment of Benign Prostatic Enlargement Using the Vortx R x System: Initial Human Safety and Efficacy Outcomes

Timothy G Schuster [1], John T Wei [2], Kari Hendlin [3], Russell Jahnke [3], William W Roberts [4]

Tendencias

- Australia 1998 -2017.
- Incremento procedimientos quirúrgicos 79% (8870 a 15911).
- RTUP proporción menos utilizada en el grupo entre 45-54 años (61.9%) y la proporción más alta en pacientes >85 años.
- UroLift 19% entre 45-54 años y 2% en >85 años.

1998 - 2008 RTUP 96%, fotovaporización 3.4%.
2008 - 2014 RTUP 73%, fotovaporización 20%.
2015 - 2017 RTUP 70%, fotovaporización 15.5%, UroLift 7.7%, HoLEP 5.9%.

ORIGINAL ARTICLE

ANZJSurg.com

National trends in surgical therapy for benign prostatic hyperplasia in Australia

Rohan M. Patel* and Simon Bariol†
*Faculty of Medicine, Nursing and Health Sciences, Monash University, Melbourne, Victoria, Australia and
†Department of Urology, Westmead Hospital and Discipline of Surgery, The University of Sydney, Sydney, New South Wales, Australia

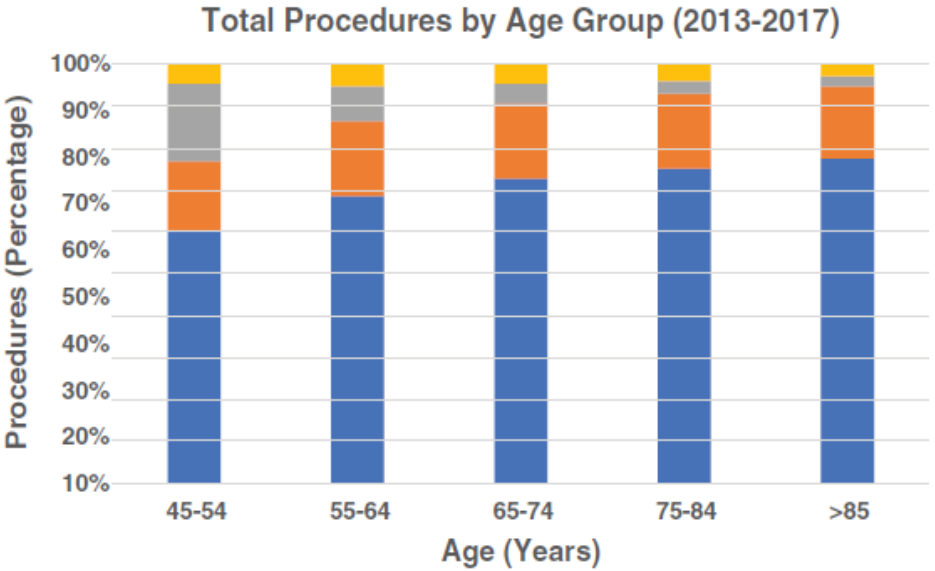
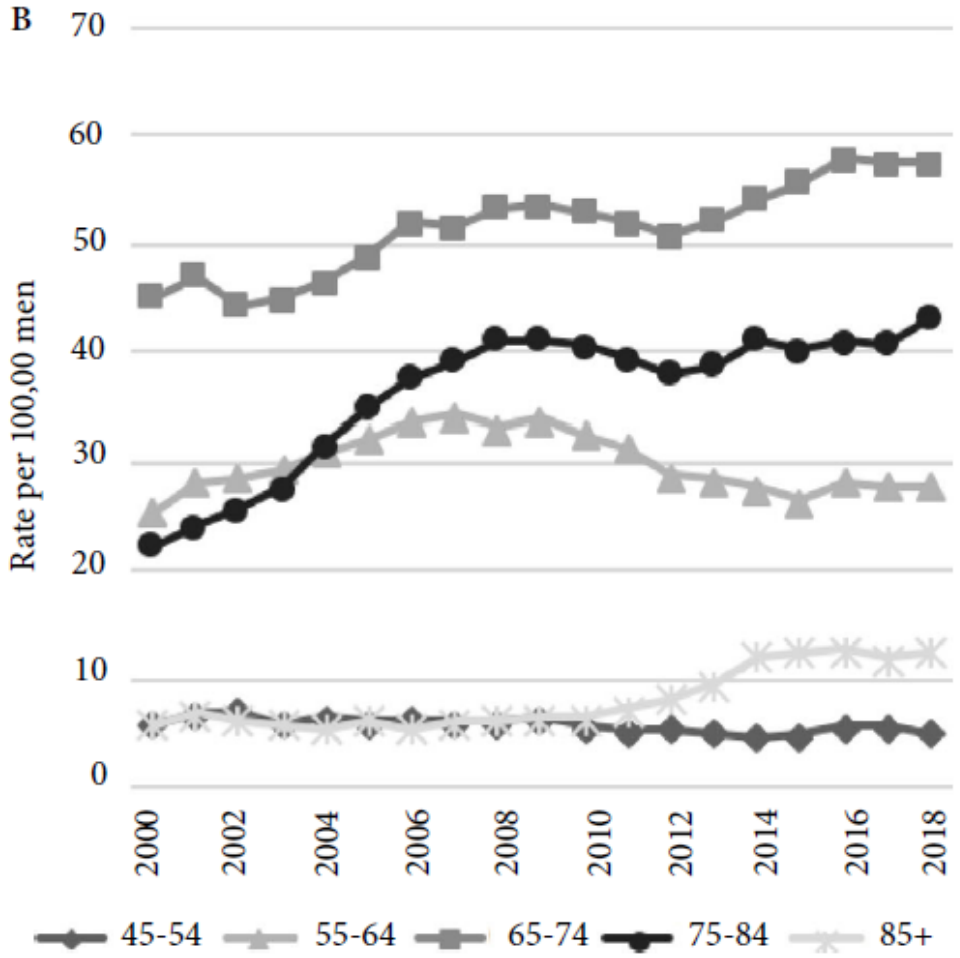


Fig. 3. Total procedures as a percentage by age group from 2013 to 2017. ■, TUNA; ■, TUMT; ■, HoLEP; ■, UroLift; ■, PVP; ■, TURP.

BJUI
BJU International

Fig. 1 Medicare Benefits Schedule data for management of BPH from 2000 to 2018 by year according to procedure type. (**A**) Cumulative analysis of rate of procedures per 100 000 men; (**B**) rate of all procedures by age group per 100 000 men.



Management of benign prostatic hyperplasia in the 21st century: temporal trends in Australian population-based data

Andrew Morton*,†, Michael Williams*,†, Marlon Perera*,†,‡, Patrick E. Teloken*,†, Peter Donato*, Sachinka Ranasinghe*,†, Eric Chung*,§,¶, Damien Bolton‡, John Yaxley*,† and Matthew J. Roberts†,**,††

*Faculty of Medicine, The University of Queensland, Brisbane, †Department of Urology, Royal Brisbane and Women's Hospital, Herston, Queensland, ‡Department of Surgery, Austin Health, The University of Melbourne, Parkville, Victoria, §Department of Urology, Princess Alexandra Hospital, ¶Andro Urology Centre, Brisbane, Queensland, **Nepean Urology Research Group, Nepean Hospital, Kingswood, New South Wales, and ††Centre for Clinical Research, The University of Queensland, Herston, Queensland, Australia

Tendencias

- Japón 1999 -2009.
- Incremento del 21% en un periodo de 10 años (17221 a 20413).
- RTUP 79.2%, enucleación prostática 16.73% (HoLEP 12.8%, abordaje abierto 2.71%), Vaporización fotoselectiva (2.8%).

INTERNATIONAL JOURNAL OF UROLOGY

International Journal of Urology (2011) 18, 166–170 doi: 10.1111/j.1442-2042.2010.02687.x

Short Communication

Surgical procedures for benign prostatic hyperplasia: A nationwide survey in Japan

Naoya Masumori,[1] Toshiyuki Kamoto,[2] Narihito Seki[3] and Yukio Homma[4] on behalf of the Committee for Clinical Guideline for Benign Prostatic Hyperplasia

[1]Department of Urology, Sapporo Medical University School of Medicine, Sapporo, Hokkaido, [2]Department of Urology, Faculty of Medicine, University of Miyazaki, Miyazaki, [3]Department of Urology, Kyushu University, Fukuoka, and [4]Department of Urology, Graduate School of Medicine, The University of Tokyo, Tokyo, Japan

Table 2 The number of operations in each year by institute

Institute	Year		
	1999	2004	2009
JUA	14 928 (86.7)†	17 173 (91.5)	18 905 (92.6)
JCUA	2 293 (13.3)	1 599 (8.5)	1 508 (7.4)
Total	17 221 (100)	18 772 (100)	20 413 (100)

†Number of operations (%). JCUA, Japanese Clinical Urologists Association; JUA, Japanese Urological Association.

Table 4 The most suitable surgical procedure according to estimated prostate volume answered by 633 institutes

Methods	Estimated prostate volume (mL)				
	<20	20–49	50–79	80–99	100≤
Open prostatectomy	0	0	25 (3.9)	152 (24.0)	292 (46.1)
Enucleation other than open prostatectomy	41 (6.5)†	73 (11.5)	112 (18.0)	118 (18.6)	111 (17.5)
Resection	494 (72.5)	533 (84.2)	479 (75.7)	333 (52.6)	199 (31.4)
Vaporization	15 (2.4)	16 (2.5)	11 (1.0)	11 (1.0)	8 (1.3)
Incision	26 (4.1)	0	0	0	0
Other‡	7 (1.1)	4 (0.6)	2 (0.3)	3 (0.5)	3 (0.5)
No indication for surgery	50 (7.9)	6 (0.9)	0	0	0
Refer to other hospitals	0	1 (0.2)	4 (0.6)	16 (2.5)	20 (3.2)
Total number of institutes	633 (100)	633 (100)	633 (100)	633 (100)	633 (100)

†Number of institutes (%), ‡Others included interstitial laser coagulation of the prostate, transurethral microwave thermotherapy, ethanol injection and stenting.

Costos

Class of intervention	Intervention	Treatment ($)	Equivalence time (years)
Inpatient surgery	Robotic simple prostatectomy	$11,583	8.07
	Open simple prostatectomy	$7088	4.94
Outpatient surgery	Button vaporization	$3643	2.54
	Robotic simple Prostatectomy	$6777	4.72
	PVP	$3719	2.59
	TURP	$3295	2.30
Office-based procedure	Convective water vapor ablation	$830	0.58
	Prostatic urethral lift	$3779	2.63
Combination medical therapy (1 year)	Finasteride + terazosin	$1434.60	1.00

Table 4 Review of published BPH treatment costs and cost-equivalence times

	DeWitt-Foy 2019	Equivalence time (years)	Gill 2018	Equivalence time (years)	Ulchaker 2017	Equivalence time (years)	Smith 2016	Equivalence time (years)	Masucci 2018	Equivalence time (years)
CWVA	$830	0.58	$1742	1.05	$2582	1.49	–	–	–	–
PUL	$3779	2.63	$2721	1.64	$6386	3.68	–	–	–	–
PVP	$3719	2.59	$2127	1.28	$5099	2.94	$1855	1.29	$3836	2.67
TURP	$3295	2.30	$1667	1.01	$5181	2.98	$870	0.61	$4963	3.46
TUNA	–	–	–	–	$2855	1.64	$1932	1.35	–	–
TUMT	–	–	–	–	–	–	$2096	1.46	–	–
MEDS	$1434.60	1.00	$1656	1.00	$1736	1.00	$1434.60**	1.00	$1434.60**	1.00

CWVA convective water vapor ablation, *PUL* prostatic urethral lift, *PVP* photovaporization of the prostate/laser prostatectomy, *TURP* transurethral resection of the prostate, *TUNA* transurethral needle ablation of the prostate, *TUMT* transurethral microwave therapy, *MEDS* combination medical therapy

**Generic retain prices used for comparison as no cost data was provided from the study in question

Journal of Health Economics and Outcomes Research

Urological/Gynecological Diseases

Cost-Effectiveness and Budget Impact of Emerging Minimally Invasive Surgical Treatments for Benign Prostatic Hyperplasia

Bilal Chughtai[1], Sirikan Rojanasarot[2,*], Kurt Neeser[3], Dmitry Gultyaev[3], Stacey L. Amorosi[2], Neal D. Shore[4]

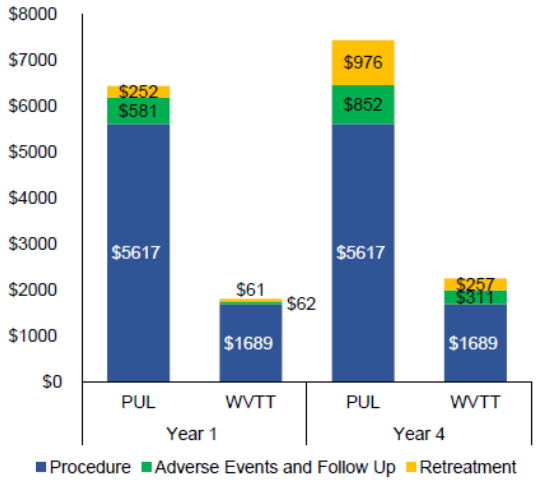
[1] Weill Cornell Medicine, New York, NY, USA
[2] Boston Scientific, Marlborough, MA, USA
[3] Certara Germany GmbH, Loerrach, BW, Germany
[4] Carolina Urologic Research Center, Myrtle Beach, SC, USA

Table 1. Clinical and Utility Inputs

	PUL		WVTT		Utility	Mean Time to Recovery (Days)
	0-3 Months	4-12 Months	0-3 Months	4-12 Months		
Mean IPSS (SD)*	22.2 (5.5)[9]	11.5 (7.3)[11]	22.0 (4.8)[10]	10.3 (6.7)[12]	0.99 for mild LUTS[17] 0.90 for moderate LUTS[17] 0.79 for severe LUTS[17]	NA
Post-Procedure Catheterization	51.4%[9]	NA	90.4%[10]	NA	-0.05[18]	0.9 for PUL[9] 3.4 for WVTT[10]
Adverse Events						
Bladder Spasm	3.6%[9]	0.7%[9]	NA	NA	-0.06[19]	30.0‡‡
Urinary Retention	0.7%[9]	0.7%[9]	3.7%[10]	0.0%[10]	-0.18[19]	30.7‡
Urinary Tract Infection	2.9%[9]	0.0%[9]	3.7%[10]	0.0%[10]	-0.07[19]	13.3‡
Pelvic Pain	17.9%[9]	1.4%[9]	2.9%[10]	0.0%[10]	-0.03**	72.5‡
Hematuria	25.7%[9]	0.7%[9]	11.8%[10]	0.0%[10]	-0.20†	25.9‡
Dysuria	34.3%[9]	0.7%[9]	16.9%[10]	0.7%[10]	-0.03[19]	38.2‡
Urinary Urge Incontinence	3.6%[9]	0.7%[9]	0.0%[10]	0.0%[10]	-0.20[19]	30.0‡
Frequency and Urgency	7.1%[9]	2.1%[9]	5.9%[10]	0.0%[10]	-0.03**	53.2‡
Encrusted Implants	7.1%[9]		NA	NA	-0.03††	30.0‡‡
Retreatment Type						
PUL	21.9%[11]		NA		-0.03††	30.0‡‡
WVTT	NA		15.4%[12]		-0.03††	30.0‡‡
BPH Medical Therapy	40.6%[11]		53.8%[12]		-0.03[19]	30.0‡‡
TURP	37.5%[11]		23.1%[12]		-0.05[19]	30.0‡‡
Open Prostatectomy	0.0%[11]		7.7%[12]		-0.16[20]	30.0‡‡

- Comparativa entre Rezum y Urolift tras 4 años de seguimiento.
- A los 4 años Urolift se asoció con mayor tasa de retratamiento 26.6% vs. 10.9%, menor calidad de vida ajustada y mayor costo ($74943 vs $2233).
- 70% relacionado con el costo del procedimiento ($5617 vs $1689) y retratamiento ($976 vs $257).

Figure 5. Medicare Per Patient Costs of PUL and WVTT at Year 1 and Year 4



Journal of Health Economics and Outcomes Research

Urological/Gynecological Diseases

Cost-Effectiveness and Budget Impact of Emerging Minimally Invasive Surgical Treatments for Benign Prostatic Hyperplasia

Bilal Chughtai[1], Sirikan Rojanasarot[2,*], Kurt Neeser[3], Dmitry Gultyaev[3], Stacey L. Amorosi[2], Neal D. Shore[4]

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[3] Certara Germany GmbH, Loerrach, BW, Germany
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Table 2. Cost Inputs

	Costs	Codes and Descriptions
Treatment		
PUL	US$5617	CPT 52441, 52442; HCPCS C9740[21]
WVTT	US$1689	CPT 53854[21]
BPH Medical Therapy	US$415	Office visit (CPT 99213)[21]; tamsulosin 40 mg once daily[22, 23]
TURP	US$4793	CPT 52601; DRG 714[21]
Open Prostatectomy	US$7511	CPT 55821; DRG 667[21]
Office Visit	US$75	CPT 99213[21]

Conclusiones

- La hiperplasia benigna de próstata es una enfermedad que aumenta su prevalencia con la edad; con el aumento de esperanza de vida y consecuente envejecimiento de la población, tenemos un amplio grupo poblacional suceptible a padecerla.
- Se ha observado una tendencia a realizar tratamientos quirúrgicos a edades más avanzadas, con disminución de RTUP e incremento de nuevos procedimientos mínimamente invasivos.
- Los procedimientos mínimamente invasivos ambulatorios no son igual de eficaces que los tratamientos quirúrgicos estándar.
- Alternativa para pacientes unfit para cirugía, desean eitar efectos adversos de tratamiento médico, evitar efectos indeseados en esfera sexual.


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