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香 港 醫 訊

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Contents

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The Cover Shot

This photo was taken on the way to watch penguins in St Kilda, Melbourne. The penguins in St Kilda reside in the breakwater of the coast. In the past, one had to take an hour boat tour to see the little penguins; that's when I took this breathtaking sunset photo. Now, you can walk directly on the breakwater to closely observe them.

Dr Kinman LAM
Specialist in Urology

Gallop Towards Health

Prof Bernard MY CHEUNG

President
The Federation of Medical Societies of Hong Kong

Prof Bernard MY CHEUNG

The Year of the Snake was a mixed bag of heaven and hell. Whilst we still cannot banish from our memory the towering inferno and the war-torn regions, we also remember with fondness some highlights in the year past. These include a joyful diamond anniversary dinner, a successful annual scientific meeting, an energetic sports day, and an eye-opening visit to Shenzhen. The Federation has come through challenging times with a renewed determination to champion health for all and professionalism among colleagues.

Horses first evolved in North America, migrated to Asia and then thrived in Central Asia and the Middle East. These strong and enduring animals became highly prized in both China and Europe. Not only were horses the historical equivalent of cars and trucks, but they have also played a role in the development and production of medicines, including vaccines and antitoxins.

Horses respond to love and affection, so humans and horses can develop a strong bond, just as dogs and cats do. The Hong Kong Jockey Club, besides promoting horse-riding and horse racing as a pastime and sport, has been a major driving force in education, health and research.

The horseshoe is a symbol of good luck. In the year of the horse, let me wish all our readers the best of luck, the best of good fortune and the best of health. It remains for me to thank our Chief Editor, Dr Raymond LO, for another year of continual excellence and dedication, and all our sponsors for keeping the Medical Diary alive and galloping!

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The term 'BPH (Benign prostatic hyperplasia) symptoms' have long been used to encompass all male urinary symptoms. However, male urinary symptoms are not always completely related to an enlarged prostate, thus male 'lower urinary tract symptoms' (LUTS) is a more appropriate term. Urinary urgency and frequency can be primarily related to overactive bladder (OAB), and nocturia is more commonly related to nocturnal polyuria or other medical causes than just BPH. To make it more complicated, male LUTS is usually a mixture of causes, and therefore accurate diagnosis after appropriate assessment is important for personalised treatment decisions.

In this issue of the Hong Kong Medical Diary, assessment and management of male LUTS, OAB, and nocturia are described in depth. To highlight: highly uro-selective alpha blockers now provide minimal to no effect on blood pressure; Anti-cholinergic drugs can cause long term cognitive problems and should be cautiously used in elderly or patients with high anti-cholinergic burden, and in such cases, beta-3 agonist is an effective alternative for OAB; Nocturia can be undiagnosed obstructive sleep apnoea, and recently nocturia has been associated with higher risks of fall and fractures in elderly!

While transurethral resection of prostate (TURP) is still a very commonly performed surgery for BPH, other minimally invasive surgical treatments (MIST) for BPH, like water vapour therapy (Rezum) and prostatic urethral lift (Urolift), have radically changed the landscape of BPH treatment worldwide and in Hong Kong in recent years. Over 1,000 Rezum or Urolift day surgeries, mostly under local or monitored anaesthesia, have been performed in public and private hospitals in Hong Kong.

Also covered in this issue are the novel diagnostic and therapeutic options for prostate cancer. Transrectal prostate biopsy (TRUS biopsy) is now rarely done in Hong Kong, and elevated PSA should be followed by MRI but not immediate prostate biopsy. Transperineal MRI-guided prostate biopsy is used in more than 90 % of patients in both public and private hospitals, almost eliminating life-threatening TRUS biopsy sepsis, while improving cancer detection.

Classically radical prostatectomy or radiotherapy are the only treatment options for localised prostate cancer. Since 2019, various focal therapies for prostate cancers have been available in Hong Kong, including HIFU, Cryotherapy, TMA, and IRE. These provide an alternative for patients who desire to treat prostate cancer with minimal side effects.

Afterall, male LUTS (and Urology) is not only about alpha blockers and TURP !

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Nocturia: An Overview of the Approach and Treatment

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This article has been selected by the Editorial Board of the Hong Kong Medical Diary for participants in the CME programme of the Medical Council of Hong Kong (MCHK) to complete the following self-assessment questions in order to be awarded 1 CME credit under the programme upon returning the completed answer sheet to the Federation Secretariat on or before 28 February 2026.

INTRODUCTION

Nocturia, defined as the need to wake up to pass urine during the main sleep period, is one of the most common and bothersome symptoms out of the many lower urinary tract symptoms (LUTS). Around 50 % of adults above 65 years of age experience nocturia, and amongst whom around half have two or more episodes of nocturia per night[1]. Nocturia is strongly associated with poor sleep quality and increased fatigue, and the nocturnal awakenings have been postulated to result in disorientation, balance instability, and falls. Observational studies first reported a positive correlation between nocturia and the outcomes of falls and fractures[2,3]. In patients older than 70 years old, nocturia was associated with a significantly increased risk of fracture (Hazard ratio 2.0) after adjustment for other confounders[2]. This causation between nocturia and fall and fracture has been replicated in more recent systematic reviews and meta-analyses[4].

DIAGNOSIS

When assessing a patient presenting with nocturia, it is essential to determine the onset, severity, and consistency of the nocturia. Clarification of daytime symptoms in history, as well as through a bladder diary or frequency-volume chart (which records the frequency and voided volume over three days), are also very important, as these would allow the differentiation of a global 24-hour polyuria, presence of predominant storage LUTS causing both daytime and night-time symptoms, or nocturnal polyuria only. The various causes to look out for are summarised in Table 1. The physician also needs to look for any underlying medical conditions and review the complete drug chart to look for any medications that may cause nocturia.

The most common cause of nocturia is nocturnal polyuria, accounting for up to 88 % of patients suffering from nocturia[5]. Nocturia polyuria is defined by the International Continence Society (ICS) as an increased proportional production of urine during the night-time compared with the 24-hour urine volume[6], with a nocturnal polyuria index (i.e. nocturnal urine volume/24-hour urine volume) above 33 % in the elderly population.

Table 1: Summary of causes and respective management options of nocturia (Summaried by the authors)

Causes	Treatment
Nocturnal polyuria - Obstructive sleep apnoea - Release of daytime fluid sequestration e.g. congestive heart failure - Defective circadian rhythm in ADH	- OSA management (e.g. weight loss, nCPAP) - Leg elevation before sleep, tea-time diuretics, optimisation of medical condition - DDAVP
24-hour polyuria (urine output > 3L/day) - diabetes mellitus, diabetes insipidus - primary polydipsia	- Optimise medical condition - Behavioural modification
Sleep disorder - insomnia - periodic leg movement syndrome	- Hypnotics - Further management by a psychiatrist
Storage LUTS e.g. overactive bladder	Behavioural modification, medications e.g. antimuscarinics, beta-3 agonist
Benign prostatic hyperplasia (BPH)	- Medical therapy e.g. alpha-blocker - Surgical therapy e.g. transurethral resection of prostate (TURP)
Medication induced e.g. diuretic use in evening	Adjustment of medications

TREATMENT OPTIONS

Lifestyle and behavioural modification

For all patients bothered by nocturia, lifestyle changes should be advised to diminish the amount of urine that is produced and excreted during the sleep period. These lifestyle advices[7,8] include:

- Pre-emptive voiding before going to bed
- Avoid bladder stimulants e.g. caffeinated beverages and alcohol
- Fluid reduction in the evening (including taking nocte medications earlier in the evening to avoid fluid right before bedtime, increasing time from dinner to bedtime, avoiding soup during dinner, and refraining from taking fruits after dinner time)
- Elevate the legs in the evening to re-distribute sequestrated dependent fluid if any
- Better sleep hygiene (including refraining from excess hours in bed, keeping warm in bed[9])
- Moderate daily exercise

The level of clinical evidence supporting the efficacy of lifestyle management in reducing nocturia is overall low, with small-scale prospective cohort reporting a reduction of more than one episode of nocturia in around 50% of patients. Nevertheless, lifestyle modification is unlikely to do any harm to these patients, and therefore should be recommended for the benefit of doubt.

Anti-muscarinics and/or beta-3 agonist

In the context of nocturia driven by bladder overactivity rather than nocturnal polyuria, the use of OAB medications such as anti-muscarinics and beta-3 agonists can be justified. These patients are characterised by having both daytime and nocturnal frequency (nocturia). This strategy's effectiveness is greatest when nocturia is accompanied by daytime urgency and frequency. Trials on anti-muscarinics showed that while nocturnal urgency is improved, the reduction of nocturia episode is only modest at best[10] - which is a reduction of nocturia by up to 0.6 episodes per night[11].

Tea-time Furosemide

"Tea-time" loop diuretic therapy (most commonly low-dose furosemide 40 mg taken in the late afternoon, ~6 hours before bedtime) is a chronotherapeutic strategy for nocturnal polyuria that aims to shift diuresis from night to daytime. Administering furosemide approximately 4-6 hours before bedtime induces an early evening natriuresis and diuresis, thereby reducing intravascular volume and suppressing overnight urine production when the patient is asleep. Clinical studies have shown that this approach can reduce nocturnal urine volume and nocturnal voids, and prolong the first uninterrupted sleep period[12], particularly in patients with peripheral oedema, heart failure, or venous insufficiency. Around 37 % of patients have one or more episodes of nocturia reduced with this strategy[13].

Desmopressin

Desmopressin (DDAVP) is a synthetic analogue of vasopressin and is the only therapy that directly targets nocturnal polyuria, the most common pathophysiological cause of nocturia. By selectively activating renal V2 receptors, DDAVP increases water reabsorption in the collecting ducts, thereby reducing nocturnal urine production without significant vasoconstrictive effects. Randomised controlled trials have consistently demonstrated that DDAVP reduces the number of nocturnal voids, decreases nocturnal urine volume, and prolongs the first uninterrupted sleep period[14,15]. Current formulation suggests that a starting minimum dose of around 25 μg of oral sublingual desmopressin is ideal for women, while men usually benefit from a minimum starting dose of 50 μg[16]. Hyponatraemia is a side effect that needs to be aware of when administering DDAVP – however, the incidence is extremely low in patients younger than 65, and can be minimised by using the aforementioned minimum effective gender-specific dosing[17]. Baseline sodium level is needed before initiation of therapy (to ensure baseline is normal at 135-145mmol/L), and monitoring of serum sodium level is also needed during treatment course - currently it is recommended to check post-treatment serum sodium levels one week after initiation and again one month after treatment (especially in the elderly population), and periodically during treatment[17]. Patients should also be reminded to minimise fluid intake from one hour before treatment administration until eight hours afterwards to reduce the risk of fluid retention and hyponatraemia.

As nocturia is an independent risk factor for falls and fractures in older adults, our centre recently performed a target trial emulation to investigate the potential role of sublingual desmopressin in mitigating fall and fracture risk. Utilising routine clinical data from the Hong Kong Hospital Authority, we identified a total number of 1,500 patients who were started on sublingual desmopressin for nocturnal polyuria by urologists in the study period of January 2016 to June 2025. Ultimately 598 patients were assigned to the sublingual desmopressin (treatment) arm, and 681 patients were assigned to the off-drug (control) arm. Kaplan-Meier survival analysis for the primary composite outcome (fall or fracture) showed significantly higher event-free survival in the desmopressin group compared to the control group. After adjusting for the covariates, desmopressin use was associated with a significantly lower hazard of the composite outcome of fall or fracture, with a hazard ratio (HR) of 0.55 (95 % CI 0.31 - 0.97, p = 0.041), while Parkinsonism (HR 4.81, 95 % CI 1.11 - 20.82, p = 0.036) showed a signal of increased risk. Age, hypertension, and other comorbidities did not significantly impact the outcome. The same protective effect of desmopressin on fall or fracture was replicated in a clustered Cox proportional hazards model (HR 0.55, 95% CI 0.30 - 0.99, p = 0.047).

CONCLUSION

In conclusion, nocturia is a highly prevalent and clinically significant condition that extends well beyond being a simple lower urinary tract symptom. Its strong associations with sleep disruption, impaired quality of life, and increased risks of falls and fractures - particularly in older adults - underscore the need for a structured and mechanism-based approach to evaluation and management. Management should be individualised and stepwise based on each patient's specific phenotype. Lifestyle and behavioural modifications remain a universal foundation of care, while medical therapies, including anti-muscarinics, beta-3 agonists, and late-afternoon loop diuretics, can be effective in appropriately selected patients. Importantly, desmopressin represents the only treatment that directly targets nocturnal polyuria and has consistently demonstrated meaningful reductions in nocturnal urine production and nocturia episodes when used with appropriate sex-specific dosing and serum sodium monitoring.

References

1. Herschorn S, Gajewski J, Schulz J, Corcos J. A population-based study of urinary symptoms and incontinence: the Canadian Urinary Bladder Survey. BJU Int. Jan 2008;101(1):52-8. doi:10.1111/j.1464-410X.2007.07198.x
2. Nakagawa H, Niu K, Hozawa A, et al. Impact of nocturia on bone fracture and mortality in older individuals: a Japanese longitudinal cohort study. J Urol. Oct 2010;184(4):1413-8. doi:10.1016/j.juro.2010.05.093
3. Stewart RB, Moore MT, May FE, Marks RG, Hale WE. Nocturia: a risk factor for falls in the elderly. J Am Geriatr Soc. Dec 1992;40(12):1217-20. doi:10.1111/j.1532-5415.1992.tb03645.x
4. Pesonen JS, Vernooij RWM, Cartwright R, et al. The Impact of Nocturia on Falls and Fractures: A Systematic Review and Meta-Analysis. J Urol. Apr 2020;203(4):674-683. doi:10.1097/JU.0000000000000459
5. Leslie SW SH, Singh S. Nocturia. StatPearls, Treasure Island (FL): StatPearls Publishing; 2025.
6. D'Ancona C, Haylen B, Oelke M, et al. The International Continence Society (ICS) report on the terminology for adult male lower urinary tract and pelvic floor symptoms and dysfunction. Neurourol Urodyn. Feb 2019;38(2):433-477. doi:10.1002/nau.23897
7. Barkin J. Nocturia: diagnosis and management for the primary care physicians. Can J Urol. 2016;23(Suppl 1):16-19.
8. Cornu JN, Abrams P, Chapple CR, et al. : A contemporary assessment of nocturia: definition, epidemiology, pathophysiology, and management--a systematic review and meta-analysis. Eur Urol.2012;62(5):877–90. 10.1016/j.eururo.2012.07.004
9. Soda T, Masui K, Okuno H, Terai A, Ogawa O, Yoshimura K. Efficacy of nondrug lifestyle measures for the treatment of nocturia. The Journal of Urology. 2010;184(3):1000-1004. doi:10.1016/j.juro.2010.05.038
10. Bergman AM, Sih AM, Weiss JP. Nocturia: an overview of evaluation and treatment. Bladder. 2015;2(2):1-7. doi:10.14440/bladder.2015.42
11. Kaplan SA, Roehrborn CG, Rovner ES, Carlsson M, Bavendam T, Guan Z. Tolterodine and tamsulosin for treatment of men with lower urinary tract symptoms and overactive bladder: a randomized controlled trial. JAMA. 2006;296(19):2319-2328. doi:10.1001/jama.296.19.2319
12. Reynard JM, Cannon A, Yang Q, Abrams P. A novel therapy for nocturnal polyuria: a double-blind randomized trial of frusemide against placebo. Br J Urol. 1998;81(2):215-218. doi:10.1046/j.1464-410x.1998.00511.x
13. Monaghan TF, Weiss JP, Everaert K, Wein AJ. Pharmacologic management of nocturnal polyuria: a contemporary assessment of efficacy, safety, and progress toward individualized treatment. Therapeutic Advances in Urology. 2021;13:1756287220988438. doi:10.1177/1756287220988438
14. Weiss JP, Zinner NR, Klein BM, Nørgaard JP. Desmopressin orally disintegrating tablet effectively reduces nocturia: results of a randomized, double-blind, placebo-controlled trial. Neurourol Urodyn. 2012;31(4):441-447. doi:10.1002/nau.22243
15. Sand PK, Dmochowski RR, Reddy J, van der Meulen EA. Efficacy and safety of low dose desmopressin orally disintegrating tablet in women with nocturia: results of a multicenter, randomized, double-blind, placebo controlled, parallel group study. J Urol. 2013;190(3):958-964. doi:10.1016/j.juro.2013.02.037
16. Juul KV, Klein BM, Nørgaard JP. Long-term durability of the response to desmopressin in female and male nocturia patients. Neurourol Urodyn. 2013;32(4):363-370. doi:10.1002/nau.22306
17. Juul KV, Malmberg A, van der Meulen E, Walle JV, Nørgaard JP. Low-dose desmopressin combined with serum sodium monitoring can prevent clinically significant hyponatraemia in patients treated for nocturia. BJU Int. 2017;119(5):776-784. doi:10.1111/bju.13718

MCHK CME Programme Self-assessment Questions

Please read the article entitled "Nocturia: An Overview of the Approach and Treatment" by Dr Alex Qin-yang LIU and Dr Peter KF CHIU and complete the following self-assessment questions. Participants in the MCHK CME Programme will be awarded CME credit under the Programme for returning completed answer sheets via fax (2865 0345) or answer link: https://forms.gle/c5LXZiVZkAwYyg629 or by mail to the Federation Secretariat on or before 28 February 2026. Answers to questions will be provided in the next issue of The Hong Kong Medical Diary. (Address: Duke of Windsor Social Service Bldg., 4/Fl., 15 Hennessy Rd., Wan Chai. Enquiry: 2527 8898)

Questions 1 - 10: Please answer T (true) or F (false)

1. **Nocturia is defined as waking up to pass urine during the main sleep period.**
2. **Nocturia is only caused by BPH in males.**
3. **Nocturia is associated with an increased risk of falls and fractures in older adults.**
4. **Nocturnal polyuria is defined by an increased proportion of urine production at night rather than increased total daily urine volume.**
5. **A bladder diary or frequency–volume chart is helpful in differentiating causes of nocturia.**
6. **Obstructive sleep apnoea can contribute to nocturnal polyuria and nocturia.**
7. **Lifestyle and behavioural modifications should be recommended to all patients with bothersome nocturia.**
8. **Antimuscarinic medications are very effective in reducing nocturia episodes in all patients.**
9. **"Tea-time" furosemide taken in the late afternoon can help reduce nocturia in selected patients.**
10. **Desmopressin is used for nocturnal polyuria and requires serum sodium monitoring.**

ANSWER SHEET FOR FEBRUARY 2026

Please return the completed answer sheet to the Federation Secretariat on or before 28 February 2026 for documentation. 1 CME point will be awarded for answering the MCHK CME programme (for non-specialists) self-assessment questions.

Nocturia: An Overview of the Approach and Treatment

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Answer Link

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Answers to January 2026 Issue

Navigational Bronchoscopy: Current Status and Advances

1. T 2. F 3. T 4. T 5. T 6. T 7. F 8. F 9. T 10. T

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Symptomatic treatment of nocturia due to idiopathic nocturnal polyuria in adults[10]

In up to 88% of cases, nocturia is caused by Nocturnal Polyuria, the night-time overproduction of urine[1,2]

Regularly disturbed sleep[3,4]* impacts on quality of life[5,6]** and daily functioning.[5,6†]

NOCDURNA: Gender-specific desmopressin

- Reduces the number of nocturnal voids and increases the time to first void (FUSP*) [3,5-8]
- Acts rapidly and with sustained effect[5-9]
- Tailored dosages: 50µg daily for men; 25µg daily for women[10]
- Suitable for **adult patients of all ages** including over 65s[3,5-9^]

As measured by: *FUSP (First Uninterrupted Sleep Period)[3,4] and PSQI,[3] **N-QoL[5,6] and †WPAI[5,6]

^A dose increase with NOCDURNA is not recommended in the elderly patients ≥ 65 years old

PSQI, Pittsburgh Sleep Quality Index; N-QOL, Nocturia Quality of Life; WPAI, Work Productivity and Activity Impairment

Interested in discovering more about Nocturia for clinical management?

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References

1. Weiss JP, *et al. J Urol* 2011; 186: 1358–63. 2. van Kerrebroeck, *et al. Int J Clin Pract* 2010; 64: 807–16. 3. Bliwise DL, *et al. Sleep Med* 2014; 15: 1276-8. 4. Bliwise D, *et al. J Clin Sleep Med* 2015; 11(1): 53–55. 5. Sand PK, *et al. J Urol* 2013; 190: 958-64. 6. Weiss JP, *et al. J Urol* 2013; 190: 965-72. 7. Yamaguchi O, *et al. BJU Int* 2013; 111: 474–84. 8. Weiss JP, *et al. Neurourol Urodyn* 2014; 33: S19-S24. 9. Juul KV, *et al. Neurourol Urodyn* 2013; 32: 363-70. 10. Hong Kong Product Package Insert of NOCDURNA (Date of revision: Nov 2016).

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Exploring Medical Treatments for Lower Urinary Tract Symptoms

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BACKGROUND

Lower urinary tract symptoms (LUTS) are common in ageing men and are often related to benign prostatic hyperplasia (BPH). Previous autopsy study demonstrated that the prevalence of BPH will increase with age and reached 88 % in men in their 80s[1]. Pharmacological treatment remains the cornerstone for disease management.

Several medications are available in the market focusing on different pathways. Alpha-receptor blockers mainly target the dynamic component by causing relaxation of smooth muscles, while 5-alpha reductase inhibitors act on the static component by shrinking the prostate[2]. Using these two classes together as combination therapy can improve symptoms and reduce the long-term risk of disease progression.

ALPHA-RECEPTOR BLOCKERS

Mechanism

Alpha-receptor blockers act by antagonising alpha-1 adrenergic receptors in prostatic stromal smooth muscle. This relaxes muscle and reduces bladder outlet resistance, leading to rapid symptom relief.

Available agent

Currently available alpha receptors include prazosin, terazosin, doxazosin, alfuzosin, tamsulosin and silodosin. Each medication has different pharmacokinetic properties and different selectivity to alpha adrenergic receptors.

Efficacy

Meta-analyses show that alpha-blockers improve International Prostate Symptom Scores (IPSS) by about 30% and increase maximum urinary flow rate (Qmax) by approximately 1-2 mL/s compared with placebo and the maximal effect is typically seen at about 4 weeks[3].

Side effects

Alpha-blockers are generally well tolerated, but possible adverse effects may occur. 10 % patients may experience dizziness and asthenia , 1 % of patients may suffer from postural hypotension. It is particularly important to remind patients who are naive to alpha blockers, especially elderly individuals, about the potential blood pressure-related side effects. In such cases, long-acting and more uroselective alpha blockers (Alfuzosin, Tamsulosin, Silodosin) may be considered to mitigate these complications. Silodosin, a uroselective alpha blocker, is noteworthy for its minimal impact on blood pressure, making it a suitable option for patients at risk of experiencing adverse effects associated with traditional alpha-blocker therapies[4].

Ejaculatory disorders, including reduced or absent semen volume and anejaculation, are seen in about 5% of patients on tamsulosin and even more with silodosin, but are less frequent with other agents[5]. Patients on tamsulosin who are planning for cataract surgery need to be aware of a notable complication of intraoperative floppy iris syndrome (IFIS). Stopping the drug before surgery has not clearly reduced this risk, so communication with the ophthalmologist is essential[6].

5-ALPHA REDUCTASE INHIBITORS

Mechanism

5-alpha reductase inhibitors (5-ARIs) target the static component of obstruction. They inhibit the conversion of testosterone to dihydrotestosterone (DHT), a more potent androgen that drives prostatic growth. By lowering DHT, these drugs induce apoptosis in prostatic epithelial cells, subsequently results in reduced prostate volume, and lower prostatic vascularity.

Available agents

There are two main agents for 5-ARIs, finasteride and dutasteride, which differ by their selectivity for 5-alpha reductase. Both agents substantially reduce intraprostatic DHT level and result in shrinkage of prostate. Meta-analysis has shown there is no difference in efficacy or safety between these two drugs.

Several practical tips need to be aware of before the prescription of 5-ARIs. Firstly, only patients with an enlarged prostate with a prostate size at least 30 - 40 cc should be prescribed with 5-ARIs. If imaging is not readily available, a prostate with more than two finger-breath on digital rectal examination could be a reasonable alternative. Secondly, 5-ARIs have a slower onset time, the maximal efficacy is usually in 6 - 12 months. Thirdly, 5-ARIs will reduce the PSA level by

50 %, therefore a proper interpretation of PSA result is required.

Efficacy

The reduction in DHT level leads to gradual improvements in symptoms and flow, and more importantly, a reduction in the risk of AUR and BPH-related surgery. In PLESS study, finasteride when compared with placebo, it can improve International Prostate Symptom Scores by about 30 %, increased Qmax by around 2 mL/s, reduced prostate volume by nearly 20 %, and lower the risk of AUR and BPH surgery by 50 - 60 %[7].

Side Effects

Owing to reduce in DHT level, 5-ARIs resulted in sexual adverse effects include erectile dysfunction, decreased libido, and ejaculatory disorders in a minority of patients, as well as gynaecomastia and, more rarely, mood changes including depression. There are some concerns regarding the association between use of 5-ARIs and the increased risk of high-grade prostate cancer, but according to the Prostate Cancer Prevention Trial, Finasteride only increase the risk of Gleason Score ≥ 7 prostate cancer by 1.3 % when compared to placebo[8]. 18 years follow -up of Prostate Cancer Prevention Trial data showed there was no difference in all cause mortality and suggested that the increase in high-risk PCa could be associated with detection bias because 5-ARIs reduce the prostate size and increase biopsy detection accuracy[9].

COMBINATION THERAPY (ALPHA-BLOCKER + 5-ARI)

Combination therapy is based on the complementary actions of alpha-blockers and 5-ARIs. The alpha-blocker provides early symptom relief, while the 5-ARI reduce long-term progression. This dual approach has been tested in several major trials.

The CombAT trial evaluated dutasteride, tamsulosin, and their combination. Combination therapy not only reduced the clinical progression of BPH by 66 %, but also provided greater improvements in IPSS and Qmax than either monotherapy and significantly reduced the risk of AUR and BPH surgery compared with tamsulosin alone[10]. Combination therapy consistently offered the best overall balance of symptom relief and long-term risk reduction.

PHOSPHODIESTERASE 5 INHIBITORS

Phosphodiesterase 5 inhibitors (PDE5-i) are commonly used in patients with erectile dysfunction. Among these PDE5-i, Tadalafil is also licensed for lower urinary tract symptoms. It exerts its therapeutic effect via multifaceted mechanisms, including inducing smooth muscle relaxation in prostatic stroma and bladder neck, enhancing perfusion and reducing inflammation.
An RCT demonstrated Tadalafil can improve the International Prostate Symptom Scores by about 30 % and Qmax by 2.4 ml/s[11]. Another meta-analysis showed by combining alpha blocker with Tadalafil, it can improve not only the erectile function, but also further improve the Qmax by 1.5 ml/s when compared to alpha blocker alone[12].

CONCLUSION

Overall, combination therapy is particularly appropriate for men with moderate to severe LUTS, enlarged prostates or patients who are at higher risk of BPH progression. For men with smaller prostates and predominantly bothersome symptoms but low progression risk, an alpha-blocker alone may be sufficient. A 5-ARI alone is often chosen for men focused on long-term risk reduction and willing to accept a slower onset of symptom relief.

References

1. Berry SJ, Coffey DS, Walsh PC, Ewing LL. The development of human benign prostatic hyperplasia with age. J Urol 1984;132:474-9.
2. Chu PSK, Leung CLH, Cheung MH, Woo SWS, Lo TK, Chan TNH, et al. Hong Kong Geriatrics Society and Hong Kong Urological Association consensus on personalised management of male lower urinary tract symptoms in the era of multiple co-morbidities and polypharmacy. Hong Kong Med J. 2021;27(2):127-39.
3. Djavan B, Marberger M. A meta-analysis on the efficacy and tolerability of alpha1-adrenoceptor antagonists in patients with lower urinary tract symptoms suggestive of benign prostatic obstruction. Eur Urol 1999;36:1-13
4. Yoshida M, Kudoh J, Homma Y, Kawabe K. Safety and efficacy of silodosin for the treatment of benign prostatic hyperplasia. Clin Interv Aging. 2011;6:161-72.
5. Sakata K, Morita T. Investigation of ejaculatory disorder by silodosin in the treatment of prostatic hyperplasia. BMC Urol. 2012 Oct 19;12:29.
6. Bigdon E, Casagrande M, Spitzer MS, et al. Intraoperatives Floppy Iris Syndrom (IFIS) bei Tamsulosineinnahme [Intraoperative floppy iris syndrom (IFIS) associated with tamsulosin]. Aktuelle Urol. 2022 Jun;53(3):246-253.
7. Roehrborn CG, Boyle P, Bergner D et al. Serum prostate-specific antigen and prostate volume predict long-term changes in symptoms and flow rate: results of a four-year, randomized trial comparing finasteride versus placebo. PLESS Study Group. Urology. 1999 Oct;54(4):662-9
8. Thompson IM, Goodman PJ, Tangen CM, et al.. The influence of finasteride on the development of prostate cancer. N Engl J Med. 2003 Jul 17;349(3):215-24.
9. Thompson IM Jr, Goodman PJ, Tangen CM, et al. Long-term survival of participants in the prostate cancer prevention trial. N Engl J Med. 2013;369(7):603-610.
10. Roehrborn CG, Siami P, Barkin J, Damião R, Major-Walker K, Nandy I, et al. The effects of combination therapy with dutasteride and tamsulosin on clinical outcomes in men with symptomatic benign prostatic hyperplasia: 4-year results from the CombAT study. Eur Urol. 2010;57(1):123-31
11. Oelke M, Giuliano F, Mirone V, et al. Monotherapy with tadalafil or tamsulosin similarly improved lower urinary tract symptoms suggestive of benign prostatic hyperplasia in an international, randomised, parallel, placebo-controlled clinical trial. Eur Urol. 2012 May;61(5):917-25.
12. Gacci M, Corona G, Salvi M et al. A systematic review and meta-analysis on the use of phosphodiesterase 5 inhibitors alone or in combination with α-blockers for lower urinary tract symptoms due to benign prostatic hyperplasia. Eur Urol. 2012 May;61(5):994-1003.

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Overactive Bladder: A Practical Guide

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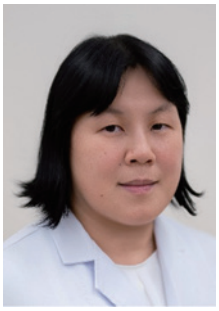

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INTRODUCTION

Overactive bladder (OAB) is a common, bothersome condition that primary care physicians in Hong Kong will increasingly encounter as the population ages. Local data suggests that the prevalence of OAB in Hong Kong is similar to that reported internationally, yet awareness and treatment rates remain low. This article provides a practical, stepwise framework for family doctors, covering prevalence and aetiology, assessment, initial management, pharmacotherapy, and indications for specialist referral.

PREVALENCE AND AETIOLOGY

Epidemiology of Overactive Bladder

OAB syndrome is defined by the International Continence Society (ICS) as a syndrome characterised by urinary urgency, usually accompanied by urinary frequency and nocturia, with or without urgency urinary incontinence[1,2].

Based on a survey on the prevalence of lower urinary tract symptoms in the local Asian population published in 2019, the age-adjusted prevalence of OAB syndrome was 15.1 %, affecting both males and females equally[3]. There is an increasing trend in both the prevalence and severity of OAB associated with advancing age. With a rapidly ageing population in Hong Kong[4], clinicians are expected to encounter an increasing number of patients presenting with OAB syndrome.

Pathophysiological Mechanisms

Although the term "OAB" suggests a specific organ - the urinary bladder - as the primary problem, the actual dysfunction may originate outside the bladder. The pathophysiology of OAB is multifactorial, with proposed mechanisms including detrusor overactivity related to myogenic changes, altered urothelial signalling, increased afferent nerve sensitivity, and impaired central inhibition of the micturition reflex. These changes may be driven or exacerbated by ageing, chronic bladder outlet obstruction, ischemia, inflammation, and neuroplastic changes in sensory pathways.

Risk factors relevant to Hong Kong's ageing population include benign prostatic hyperplasia (BPH) with obstruction, metabolic syndrome, diabetes, obesity, chronic constipation, neurologic disease, and polypharmacy[5,6,7]. High intake of caffeine and other bladder irritants (tea, coffee, and certain soft drinks), smoking, and reduced mobility may further exacerbate symptoms in local patients. Recognising and addressing these contributing factors is an essential component of OAB management in primary care.

Presentation and Clinical Assessment

OAB syndrome is a clinical diagnosis; therefore, initial assessment through history taking and physical examination is of utmost importance. Patients typically present with one or more of the following storage symptoms (as defined by the ICS):

- Urgency: a sudden, compelling desire to void that is difficult to defer (hallmark symptom)
- Frequency: voiding that occurs more frequently than the individual or caregiver considers normal
- Nocturia: awakening to pass urine during the main sleep period
- Urgency urinary incontinence: involuntary leakage preceded by or accompanied by urgency

A thorough history should be taken to establish the diagnosis. Key areas to explore include the onset and duration of symptoms, daytime and nocturnal voiding frequency, urgency, leakage (volume, triggers, pad use), fluid intake patterns, caffeine and alcohol consumption, bowel habits, medications (diuretics, sedatives, anticholinergics, etc.), and relevant comorbidities (diabetes, neurologic disease, BPH). This comprehensive approach is essential for ruling out underlying causes and identifying any red flag signs.

Important differential diagnoses include:

- Urinary tract infection: urgency and frequency accompanied by dysuria, suprapubic pain, and pyuria on urinalysis
- BPH/male lower urinary tract symptoms (LUTS): voiding symptoms (weak stream, hesitancy, straining, incomplete emptying) predominating over storage symptoms
- Bladder cancer: irritative voiding symptoms plus visible or microscopic haematuria; any haematuria warrants prompt investigation
- Diabetes and polyuric states: high urine volumes and polydipsia, often without true urgency

Practical Assessment in Primary Care

A focused yet systematic assessment is usually sufficient before initiating treatment. Patient questionnaires can aid in clinical assessment. These include the International Prostatic Symptom Score (IPSS) for male patients with LUTS and the Overactive Bladder Symptom Score (OABSS) for OAB symptoms, which has been validated for local Hong Kong Chinese adults[8].

Physical examination should include an abdominal examination for masses and bladder distension; a focused neurological examination; digital rectal examination in men; and in women, pelvic examination for prolapse, atrophy, and a cough stress test.

Investigations should include urinalysis with or without culture to exclude infection; post-void residual (PVR) measurement by bladder scan if voiding symptoms are present or retention is a concern; and blood glucose and renal function testing when clinically indicated. A bladder diary maintained for 3-7 days, recording voiding times, volumes, and leakage episodes, can help characterise symptoms and guide management. For most uncomplicated cases, advanced investigations such as cystoscopy, urodynamic studies, upper tract imaging, or spine imaging are not routinely required for diagnosis.

INITIAL MANAGEMENT STRATEGY

First-Line Treatment: Behavioural Modification and Lifestyle Interventions

First-line management of OAB should invariably include behavioural therapies and lifestyle modifications, as these interventions are non-invasive, reversible, effective, and can be combined with pharmacotherapy. There has also been increasing concern regarding the adverse effects of anticholinergic drugs on cognitive function in elderly patients. Patients should be counselled on non-pharmacological treatment options regardless of whether medication is initiated.

Patients and their caregivers should be educated on normal bladder physiology, factors contributing to their symptoms, and realistic treatment expectations. This education should emphasise patient responsibility and engagement, as behavioural success requires significant lifestyle changes and sustained effort.

Fluid management represents a cornerstone intervention, as both excessive and insufficient fluid intake exacerbate symptoms. Patients should be counselled to avoid excessive fluid intake while maintaining adequate hydration to achieve normal 24-hour urine output. A randomised controlled trial (RCT) demonstrated that a 25 % reduction in fluid intake improved overall OAB symptoms in patients with OAB[9]; however, there was no significant improvement in urgency incontinence specifically. Patients should be advised to space fluid intake evenly throughout the day and reduce fluid intake in the four hours before bedtime to minimise nocturia.

Dietary modifications involve identifying and reducing bladder irritants. Caffeine reduction is particularly important[10], with patients advised to limit caffeine intake to 1-2 cups per day or eliminate it entirely if possible. Other common bladder irritants include alcohol, carbonated beverages, citrus juices and fruits, chocolate, spicy foods, and tomatoes.

Weight management is important, as overweight and obesity have been linked to the incidence of lower urinary tract symptoms in epidemiological studies and are particularly associated with urgency urinary incontinence (UUI) and stress urinary incontinence (SUI)[11,12]. An RCT demonstrated that weight loss is significantly associated with a reduction in incontinence and urgency incontinence episodes per week[13].

Smoking cessation was shown to have a weak association with urgency, frequency, and urinary incontinence[14]; however, smoking cessation should be advised for all OAB patients as part of general public health measures.

Physical therapy including pelvic floor muscle training (PFMT) and bladder training, represents evidence-based behavioural interventions with strong supporting data. PFMT should be supervised by trained physiotherapists and include correct muscle identification using the "knack" technique (pre-emptive pelvic floor contraction before coughing or effort), as well as progressive muscle training based on principles of specificity, overload, and progression. Bladder training involves establishing a voiding schedule with progressive intervals, starting at baseline frequency and then increasing intervals by 15 - 30 minutes weekly to extend the time between voids to a goal of 3 - 4 hours. This should be combined with urgency suppression techniques including distraction, relaxation, and pelvic floor contraction. Bladder diaries track progress and maintain patient engagement.

FEMALE PATIENTS: SCREENING FOR STRESS URINARY INCONTINENCE

In women presenting with incontinence, it is crucial to distinguish OAB from stress urinary incontinence (SUI) and mixed incontinence, as management differs significantly.

- SUI: leakage occurring with coughing, sneezing, laughing, lifting, or exercise, due to urethral hypermobility or intrinsic sphincter deficiency
- OAB/urgency urinary incontinence: leakage preceded by urgency and often associated with frequency and nocturia
- Mixed incontinence: combination of stress and urgency symptoms

Many women experience mixed incontinence. A detailed symptom history combined with a cough stress test during pelvic examination is key to accurate subtype classification. First-line management for SUI in primary care focuses on PFMT, weight reduction, smoking cessation, and addressing chronic cough and constipation - all of which also provide helpful support

in mixed incontinence cases. When SUI is prominent and conservative therapy fails, referral for consideration of mid-urethral sling or other surgical options is appropriate.

Medication Treatment

Drug therapy should be considered when:

- Symptoms remain bothersome despite adequate behavioural measures, or
- Behavioural therapy alone is not feasible or acceptable (e.g., frail older adults with limited capacity to participate)

Two major drug classes are available as second-line therapy: antimuscarinics (anticholinergic agents) and beta-3 adrenergic agonists. Selective beta-3 agonists offer an important alternative to antimuscarinics, particularly for patients with cognitive concerns or polypharmacy.

Anticholinergic Agents

Antimuscarinic agents reduce detrusor contractions by blocking muscarinic receptors, primarily M2 and M3, in the bladder. Commonly used agents include oxybutynin, tolterodine, solifenacin, and trospium. This blockade results in increased bladder capacity, reduced involuntary contractions, and decreased urgency and frequency. Numerous RCTs have proven the effectiveness of these drugs for symptom relief; however, no single agent has been shown to be superior to others[15,16].

Anticholinergic Side Effects and Special Populations

Anticholinergic side effects represent the primary limitation of this drug class and constitute the most common reason for treatment discontinuation. Side effects result from systemic blockade of muscarinic receptors and include dry mouth, constipation, and blurred vision. These agents are contraindicated in patients with acute angle-closure glaucoma[17]. The use of extended-release formulations is encouraged to reduce side effects, particularly dry mouth[18]. Cognitive effects-including impaired memory, confusion, and delirium - represent a significant concern in elderly patients. These anticholinergic effects are especially problematic in older adults due to their higher baseline risk of cognitive decline and increased fall propensity, making careful risk-benefit assessment essential in this population[19].

Beta-3 Adrenergic Agonists: Mirabegron

Mirabegron, a selective beta-3 adrenergic receptor agonist, represents a mechanistically distinct alternative to antimuscarinics. Mirabegron relaxes detrusor muscle during the storage phase by stimulating β3-adrenergic receptors, thereby increasing functional bladder capacity without anticholinergic effects.

Randomised trials show that mirabegron significantly reduces incontinence episodes and micturition frequency compared to placebo, with efficacy similar to antimuscarinics but substantially lower rates of dry mouth and constipatio[20,21]. Main cautions include hypertension and tachycardia; mirabegron should be avoided or used with caution in patients with uncontrolled hypertension and should be monitored closely in those with cardiovascular disease.

Advantages over Antimuscarinics: Beyond superior tolerability, mirabegron does not antagonise M3 receptors, theoretically reducing urinary retention risk compared to antimuscarinics. In clinical practice, the lower incidence of treatment discontinuation due to adverse effects (10 - 12 % for mirabegron versus 7 - 10 % for antimuscarinics)[22] reflects this superior tolerability profile.

COMBINATION PHARMACOTHERAPY: SYNERGISTIC BENEFITS

A combination of an antimuscarinic and a beta-3 agonist can provide additive symptom control without a disproportionate increase in side effects. When patients are unresponsive to monotherapy with either an anticholinergic or beta-3 agonist, combination therapy should be considered. Trials such as SYNERGY[23] and BESIDE[24] demonstrated that solifenacin plus mirabegron improved incontinence episodes and micturition frequency more than either drug alone, with acceptable tolerability. This combination is preferred over a combination of two different anticholinergic drugs because it offers better tolerability and reduces concerns about cumulative cholinergic burden.

MALE PATIENTS: COMBINING WITH ALPHA-BLOCKERS

In men, OAB symptoms often coexist with voiding lower urinary tract symptoms due to benign prostatic hyperplasia (BPH) or bladder outlet obstruction. Alpha-blockers (e.g., tamsulosin, alfuzosin) remain first-line therapy for bothersome voiding symptoms and should be initiated when the IPSS score or symptom profile suggests obstruction. If storage symptoms persist despite adequate alpha-blocker therapy, adding an antimuscarinic or beta-3 agonist is supported by multiple studies and can significantly improve urgency and frequency[25,26].

In men with higher post-void residual (PVR) volumes or borderline emptying, a beta-3 agonist may be preferred over antimuscarinics, as it is less likely to exacerbate urinary retention. Close monitoring of symptoms and PVR is advisable when combining OAB drugs with alpha-blockers in this setting.

Specialist Treatment

For patients with refractory OAB - persistent, bothersome symptoms despite appropriate lifestyle measures and at least two pharmacological regimens (including combination therapy) - referral to urology

is appropriate. Third-line options include posterior tibial nerve stimulation, intravesical botulinum toxin injections, sacral neuromodulation, and, rarely, augmentation cystoplasty.

Posterior Tibial Nerve Stimulation (PTNS)

PTNS modulates the sacral plexus indirectly by stimulating the posterior tibial nerve at the ankle, usually via a percutaneous needle electrode. Randomised trials and observational studies have shown improvements in frequency, urgency, nocturia, and incontinence comparable to pharmacotherapy, with very low rates of systemic side effects[28]. Advantages include minimal invasiveness and reversibility; however, the need for repeated clinic visits can be a barrier to compliance. PTNS is particularly attractive for older or frail patients who are unsuitable for major surgery or who cannot tolerate pharmacotherapy. PTNS is typically performed by nurse specialists in urology centres and is available in various public urology units in Hong Kong.

Intravesical Botulinum Toxin A

Botulinum toxin A (Botox) injections into the detrusor or trigone reduce acetylcholine release at neuromuscular junctions, decreasing involuntary contractions and urgency. Randomised trials show significant reductions in incontinence and urgency episodes in patients who have failed oral therapies, with some achieving complete continence. Adverse effects - including urinary retention and increased PVR (sometimes requiring intermittent self-catheterisation), urinary tract infection, and transient haematuria - are the main risks[27]. Botulinum toxin A is suitable for motivated patients who understand the need for repeat injections (typically every 6-9 months) and are able, if necessary, to perform intermittent catheterisation.

Sacral Neuromodulation (SNM)

Sacral neuromodulation delivers continuous, low-voltage electrical stimulation to the sacral nerves (usually S3) via an implanted lead connected to a subcutaneous pulse generator, modulating bladder reflex pathways. A test phase with a temporary external stimulator is performed initially; if symptoms improve by ≥ 50 %, a permanent device is implanted. Long-term studies report high satisfaction and durable symptom relief in appropriately selected patients, including those who have failed Botox injection[29]. Complications include pain at the implant site, lead migration, infection, and the need for revision surgery. SNM may be considered in patients who prefer a device-based solution and are fit for minor surgery, especially when Botox has failed or is unacceptable.

Augmentation Cystoplasty

Augmentation cystoplasty (e.g., ileocystoplasty) is a major reconstructive surgery that increases bladder capacity and compliance by incorporating a bowel segment into the bladder. Indications are now rare and are usually limited to severe, refractory cases with very low bladder capacity or poor compliance when all less invasive options - including behavioural therapy, multiple drugs, Botox, and neuromodulation - have failed. Complications include mucus production, stone formation, perforation, metabolic disturbances, vitamin B12 deficiency, chronic infection, and a small long-term risk of malignancy in the augmented segment. In contemporary practice, augmentation cystoplasty is reserved for carefully selected, well-counselled patients who can perform intermittent catheterisation and commit to lifelong follow-up. In recent years, most augmentation cystoplasties in Hong Kong have switched from open surgery to a robotic-assisted laparoscopic approach, reducing patient morbidities and hospital stay.

CONCLUSION

Overactive bladder is a highly prevalent, under-recognised condition in Hong Kong that substantially impairs quality of life but is amenable to treatment in primary care. Family doctors play a central role in case finding, initial assessment, and first-line management through education, behavioural interventions, and judicious use of pharmacotherapy tailored to patient comorbidities and anticholinergic burden. Recognising stress urinary incontinence and mixed incontinence in women, and combining OAB agents with alpha-blockers in men with concomitant voiding lower urinary tract symptoms, are key practical skills for everyday practice.

For patients with persistent, bothersome symptoms despite optimised lifestyle and drug therapy, early collaboration with urologists for consideration of PTNS, intravesical Botox, neuromodulation, or (rarely) augmentation cystoplasty can substantially improve quality of life. A structured, patient-centred, and evidence-based approach - aligned with local HKUA/HKGS consensus[30] - enables primary care physicians to manage most OAB cases effectively while identifying those who require specialist care.

References

1. Abrams, P., Cardozo, L., Fall, M., Griffiths, D., Rosier, P., Ulmsten, U., Van Kerrebroeck, P.E., Victor, A. & Wein, A. The standardisation of terminology in lower urinary tract function: report from the standardisation sub-committee of the International Continence Society. Urology 61, 37-49 (2003).
2. Haylen, B.T., de Ridder, D., Freeman, R.M., Swift, S.E., Berghmans, B., Lee, J., Monga, A., Petri, E., Rizk, D.E., Sand, P.K. & Schaer, G.N. An International Urogynecological Association (IUGA)/International Continence Society (ICS) joint report on the terminology for female pelvic floor dysfunction. Neurourology and Urodynamics 29, 4-20 (2010).
3. Yee CH, Chan CK, Teoh JY, et al. Survey on prevalence of lower urinary tract symptoms in an Asian population. Hong Kong Med J 2019;25:13-20.
4. Census and Statistics Department. Population and Household Projections. https://www.censtatd.gov.hk/en/scode190.html#section1
5. Chuang Y, Liu SP, Lee KS, et al. Prevalence of overactive bladder in China, Taiwan and South Korea: Results from a cross-sectional, population-based study. Low Urin Tract Symptoms. 2019;11(1):48-55.
6. Weiss JP, Blaivas JG, Jones M, et al. Age related pathogenesis of nocturia in patients with overactive bladder. J Urol. 2007;178(2):548-551.
7. Hyman MJ, Groutz A, Blaivas JG. Detrusor instability in men: correlation of lower urinary tract symptoms with urodynamic findings. J Urol 2001; 166(2):550-552; discussion 553.
8. MK Yiu, CM Li, SM Hou, CW Wong, S Tam, SK Chu. Reliability and validity of the overactive bladder symptom score in Hong Kong Chinese. Hong Kong Med J 2013;19:504–10

9. Hashim, H., et al. How should patients with an overactive bladder manipulate their fluid intake? BJU Int, 2008. 102: 62.
10. Le Berre, M., et al. What do we really know about the role of caffeine on urinary tract symptoms? A scoping review on caffeine consumption and lower urinary tract symptoms in adults. Neurourol Urodyn, 2020. 39: 1217.
11. Hunskaar, S. A systematic review of overweight and obesity as risk factors and targets for clinical intervention for urinary incontinence in women. Neurourol Urodyn, 2008. 27: 749.
12. Chen, C.C., et al. Obesity is associated with increased prevalence and severity of pelvic floor disorders in women considering bariatric surgery. Surg Obes Relat Dis, 2009. 5: 411.
13. Subak, L.L., et al. Weight loss to treat urinary incontinence in overweight and obese women. N Engl J Med, 2009. 360: 481.
14. Hannestad, Y.S., et al. Are smoking and other lifestyle factors associated with female urinary incontinence? The Norwegian EPINCONT Study. BJOG, 2003. 110: 247.
15. Chapple C, Khullar V, Gabriel Z, Dooley JA. The effects of antimuscarinic treatments in overactive bladder: a systematic review and meta-analysis. Eur Urol 2005;48:5-26.
16. Chapple CR, Khullar V, Gabriel Z, Muston D, Bitoun CE, Weinstein D. The effects of antimuscarinic treatments in overactive bladder: an update of a systematic review and meta-analysis. Eur Urol 2008;54:543-62.
17. Abrams P, Kaplan S, de Koning Gans HJ, Millard R. Safety and tolerability of tolterodine for the treatment of overactive bladder in men with bladder outlet obstruction. J Urol 2006;175:999-1004.
18. Khullar V, Chapple C, Gabriel Z, Dooley JA. The effects of antimuscarinics on health-related quality of life in overactive bladder: a systematic review and meta-analysis. Urology 2006;68(2 Suppl):38-48
19. Kraus SR, Bavendam T, Brake T, Griebling TL. Vulnerable elderly patients and overactive bladder syndrome. Drugs Aging 2010;27:697-713
20. Kelleher C, Hakimi Z, Zur R, et al. Efficacy and tolerability of mirabegron compared with antimuscarinic monotherapy or combination therapies for overactive bladder: a systematic review and network meta-analysis. Eur Urol 2018;74:324-33.
21. Chapple CR, Siddiqui E. Mirabegron for the treatment of overactive bladder: a review of efficacy, safety and tolerability with a focus on male, elderly and antimuscarinic poor-responder populations, and patients with OAB in Asia. Expert Rev Clin Pharmacol 2017;10:131-51.
22. Nazir, J., Hakimi, Z., Guelfucci, F. et al. A retrospective study of treatment persistence and adherence to mirabegron versus antimuscarinics, for the treatment of overactive bladder in Spain. BMC Urol 18, 76 (2018).
23. Herschorn S, Chapple CR, Abrams P, et al. Efficacy and safety of combinations of mirabegron and solifenacin compared with monotherapy and placebo in patients with overactive bladder (SYNERGY study). BJU Int 2017;120:562-75
24. Drake MJ, Chapple C, Esen AA, et al. Efficacy and safety of mirabegron add-on therapy to solifenacin in incontinent overactive bladder patients with an inadequate response to initial 4-week solifenacin monotherapy: a randomised double-blind multicentre phase 3B study (BESIDE). Eur Urol 2016;70:136-45.
25. Pang, R., et al. Anticholinergics combined with alpha-blockers for treating lower urinary tract symptoms related to benign prostatic obstruction. Cochrane Database Syst Rev, 2021. 2: Cd012336.
26. Kakizaki H, Lee KS, Yamamoto O, et al. Mirabegron add-on therapy to tamsulosin for the treatment of overactive bladder in men with lower urinary tract symptoms: a randomized, placebo-controlled study (MATCH). Eur Urol Focus. 2019.
27. Nitti VW, Dmochowski R, Herschorn S, et al. OnabotulinumtoxinA for the treatment of patients with overactive bladder and urinary incontinence: results of a phase 3, randomized, placebo controlled trial. J Urol 2017;197(2S):S216-23.
28. Wang M, Jian Z, Ma Y, Jin X, Li H, Wang K. Percutaneous tibial nerve stimulation for overactive bladder syndrome: a systematic review and meta-analysis. Int Urogynecol J 2020;31:2457-71.
29. G Peter Herbison, Edwin P Arnold. Sacral neuromodulation with implanted devices for urinary storage and voiding dysfunction in adults. Cochrane Database Syst Rev. 2009 Apr 15:(2):CD004202.
30. William KK Wong, Raymond WM Kan, PS Lam et al. Management of overactive bladder: consensus statements from the Hong Kong Urological Association and the Hong Kong Geriatrics Society Hong Kong Med J 2024 Aug;30(4):310–9

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-27.3% **Prostate size**[‡]

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AUR, Acute Urinary Retention; **BPH**, Benign Prostatic Hyperplasia,

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† The overall number of patients studied in the landmark trials is 11,868 with Phase III: 4325; EPICS: 1630; SMART-1:327; CombAT: 4844; CONDUCT: 742. The number of patients studied in landmark trials with dutasteride as monotherapy or in combination with tamsulosin is 6,909 with Phase III: 2167; EPICS: 813; SMART-1:327; CombAT: 3233; CONDUCT: 369[3-8]

◊ Change in IPSS from baseline to year 4 was -6.3 points for combination therapy vs. -3.8 points for tamsulosin (p<0.001, Combination: n=1575, Tamsulosin: n=1582)[3]

‡ At month 48, the adjusted mean percentage change from baseline in prostate volume was -27.3 % for combination therapy, +4.6% (p< 0.001) for tamsulosin, and -28.0% (p= 0.42) for dutasteride[3]

❖ Compared with tamsulosin, combination therapy reduced the relative risk of AUR by 67.6% and BPH-related surgery by 70.6%[3]

Duodart(dutasteride/tamsulosin) 0.5/0.4mg Safety Information[9]:

- Renal impairment: Patients with creatinine clearance of less than 10 mL/min should be approached with caution as these patients have not been studied.
- Hypotension: Patients beginning treatment with Duodart should be cautioned to sit or lie down at the first signs of orthostatic hypotension until the symptoms have resolved. Concomitant use of α1- adrenoceptor antagonists and PDE5 inhibitors can potentially cause symptomatic hypotension.
- Fertility in men: Dutasteride has been reported to affect semen characteristics (reduction in sperm count, semen volume and sperm motility) in healthy men. The possibility of reduced male fertility cannot be excluded. Effects of tamsulosin hydrochloride on sperm counts or sperm function have not been evaluated.
- Contraindications: - Hypersensitivity to dutasteride, other 5-alpha reductase inhibitors, or any component of the preparation. - Women, adolescent and children. - A history of orthostatic hypotension - Severe hepatic impairment
- Common adverse events: Dizziness, Impotence, Altered libido, Ejaculation disorders, Breast disorder

Duodart Prescribing Information:

HK61184 – Duodart capsules 0.5mg/0.4mg dutasteride/ tamsulosin HCL

References: 1. Data on file Duodart first received approval in 2010; August 2024. **2.** Data on File;2022N516537_00;1-2 **3.** Roehrborn CG, et al. European urology 2010;57;123-131. **4.** Roehrborn CG, et al. BJU international 2015 ;116(3):450-459. **5.** Roehrborn CG, et al. Urology 2002;60(3);434-41. **6.** Barkin J, et al. European urology 2003;44;461-6. **7.** Debruyne F, et al. European urology 2004;46;488-495. **8.** Nickel JC, et al. BJU International 2011;108;388-394. **9.** DUODART Hong Kong Full Prescribing Information. Version number: HK072017(GDS15v1/eMC20170628)

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Prostate Biopsy in Cancer Diagnosis

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Prostate biopsy remains the definitive test for diagnosing prostate cancer, but the technique and indications have evolved substantially in the era of multiparametric MRI (mpMRI) and transperineal approach.

BACKGROUND

Prostate cancer is a commonly diagnosed solid malignancy in men. In Hong Kong, it is the 3rd most common cancer. Making an accurate early diagnosis is a priority in primary care and urology. Historically, transrectal ultrasound (TRUS)-guided systematic biopsy became the standard from the 1980s onwards because it was technically simple, widely available, and could be performed under local anaesthesia as an outpatient procedure. However, TRUS biopsy samples only a fraction of the gland, and it has its limitations. Moreover, it carries a sepsis risk due to rectal flora, with post-biopsy infection rates of 2 - 7 % reported in contemporary series. Recent European Association of Urology (EAU) guideline updates now favour transperineal biopsy (TPBx) over transrectal biopsy because it reduces infectious complications and allows for better sampling of anterior and apical tumours, translating to better detection of clinically significant prostate cancer when combined with MRI-targeted techniques[1,2]. The introduction of mpMRI has demonstrated that it can act as a triage for those who are considering prostate biopsy, reducing a quarter of unnecessary biopsies[3,4]. It shifts the practice towards image-guided, risk-stratified biopsy strategies. For general practitioners, understanding this transition helps in counselling patients, interpreting urologists' recommendations, and navigating shared decision-making around biopsy referral.

INDICATIONS FOR PROSTATE BIOPSY

Prostate biopsy is indicated when the estimated risk of clinically significant prostate cancer (generally ISUP grade group ≥ 2) is high enough that histological confirmation will change management. Key triggers include a persistently elevated or rising prostate-specific antigen (PSA), especially when adjusted for age, and/or an abnormal digital rectal examination (DRE) with palpable prostatic nodule or hard prostate. Current international guidelines recommend pre-biopsy mpMRI for most men being considered for their first biopsy, because a negative MRI (PI-RADS ≤ 2) with low PSA density may allow biopsy to be deferred after shared decision-making. A biopsy is particularly recommended when an MRI shows a PI-RADS 4 - 5 lesion, or a PI-RADS 3 lesion in the presence of additional risk factors, such as a strong family history, germline mutations (e.g., BRCA2), or a high PSA density (> 15 - 20 %). A repeat biopsy is indicated in men with a prior negative biopsy but ongoing clinical suspicion, especially if new MRI lesions or PSA kinetics raise concern[5,6].

PROCEDURE AND COMPLICATIONS

Prostate biopsy is performed either via the transrectal or, increasingly, the transperineal route, usually under ultrasound guidance with or without MRI targeting. TRUS-guided biopsy involves passing a needle through the rectal wall into the prostate, typically obtaining 10 - 12 systematic cores from peripheral and mid-gland regions under local anaesthesia with periprostatic nerve block in the outpatient setting. Transperineal biopsy uses one or two small skin punctures in the perineum, with the needle advanced through a template grid or freehand system into the prostate, and is often performed under local anaesthesia or under monitored anaesthesia care (MAC). The transperineal route facilitates more comprehensive sampling of anterior, apical, and transitional zone lesions and is now strongly favoured in various guidelines because of improved significant cancer detection and lower risk of septic complications[7].

Common immediate side effects include haematuria, haematospermia, and mild rectal or perineal discomfort, which are usually self-limiting and resolve within a few days to weeks. Urinary retention occurs in a small proportion of patients, more often with extensive template biopsies or in men with significant baseline lower urinary tract symptoms or a large prostate. Infectious complications are a primary concern after TRUS biopsy due to translocation of rectal flora, including fluoroquinolone-resistant organisms, with post-biopsy febrile urinary tract infection or sepsis reported in up to 2 - 3 % of cases in some series. Transperineal biopsy markedly reduces the sepsis rate because it avoids rectal wall puncture. Several contemporary cohorts report sepsis rates well below 0.5 - 1 %, which has driven the shift towards this approach. Rare complications include significant bleeding requiring intervention (< 1 %) and transient erectile dysfunction (< 3 - 6 months)[8].

Fig. 1: Instruments in prostate biopsy (Clinical photo from personal collection)

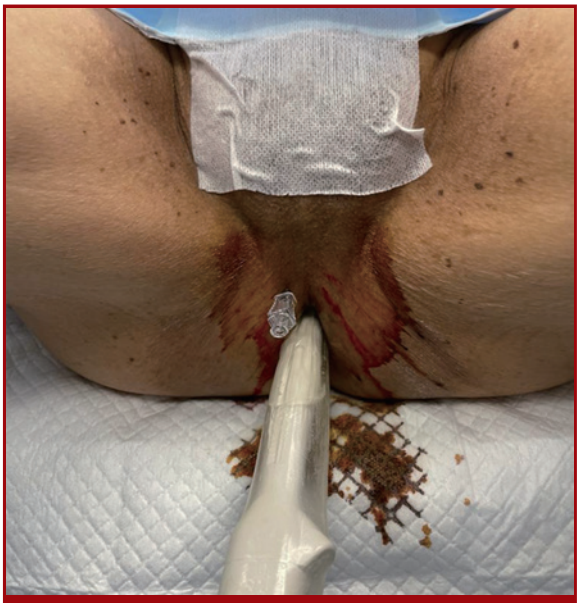

Fig. 2: Biopsy trocar and transrectal USG in-situ (Clinical photo from personal collection)

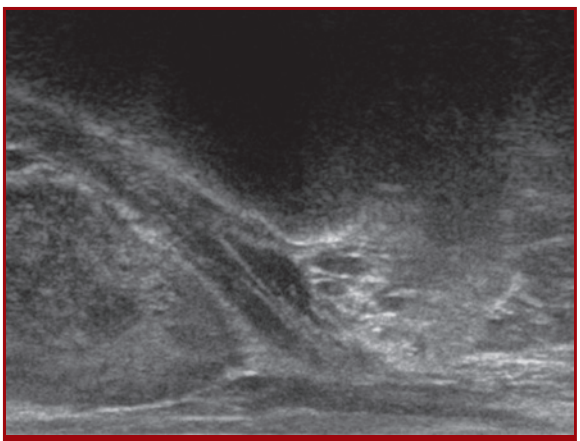

Fig. 3: Sagittal view of transrectal USG showing the prostate (Clinical photo from personal collection)

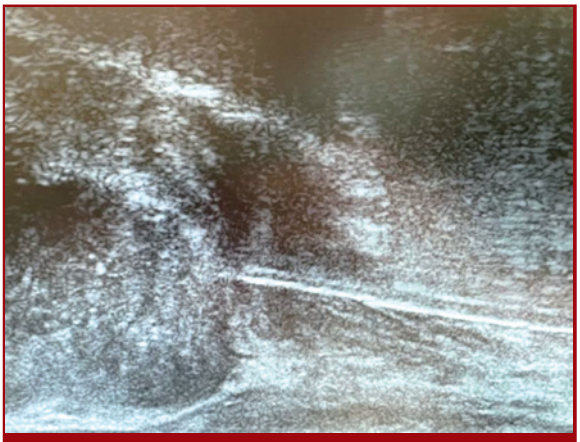

Fig. 4: Sagittal view of transrectal USG showing the biopsy needle targeting the prostate (Clinical photo from personal collection)

MRI INTEGRATION AND FUSION BIOPSY

mpMRI has transformed prostate cancer detection by enabling lesion localisation, risk stratification via the PI-RADS scoring system, and targeted sampling. PI-RADS v2.1 categorises lesions from one (very low likelihood of clinically significant cancer) to five (very high likelihood), with growing evidence that PI-RADS 4 - 5 lesions carry a high probability of clinically significant disease, while PI-RADS 1 - 2 lesions have high negative predictive value. In contemporary pathways, men with suspected cancer typically undergo mpMRI first. If the MRI is suspicious for clinically significant cancer (PI-RADS ≥ 4 or PI-RADS ≥ 3 plus certain risk factors), a targeted biopsy is performed in addition to or instead of systematic cores, depending on the guidelines and local protocol[9].

In general, there are three primary targeting methods in fusion prostate biopsy. Firstly, cognitive fusion (visual estimation) relies on the operator mentally transferring the MRI-identified lesion location to real-time transrectal ultrasound images; this requires experience but avoids the need for additional hardware. Secondly, MRI-Ultrasound software fusion uses dedicated platforms to co-register MRI and ultrasound images, displaying the MRI lesion as an overlay during biopsy and guiding the needle to the target. This reduces operator dependence and is widely available in most public and private hospitals. Thirdly, in-bore MRI-guided biopsy is performed within the MRI scanner, utilising real-time imaging to precisely adjust the needle trajectory into the lesion, often via a transperineal or transrectal approach. This approach is rarely done worldwide and almost never done in Hong Kong due to limited availability of MR-compatible equipment and long in-bore procedure time. Studies suggest that mpMRI-targeted biopsy, using any of these approaches, improves detection of clinically significant cancer while reducing overdiagnosis of indolent disease compared with systematic TRUS biopsy alone, particularly in men with prior negative biopsies[10].

HIGHLIGHT ON IN-BORE MRI BIOPSY

In-bore MRI-guided prostate biopsy offers the highest level of targeting accuracy because the lesion is visualised directly during needle advancement, and adjustments can be made in real time based on MRI sequences. However, a previous study shows that there is no superiority among these three fusion techniques[11]. The in-bore biopsy technique typically uses a transperineal or transrectal access device fixed relative to the prostate, with serial images (5 - 10 minutes each time) confirming needle position before each core is obtained, allowing for precise sampling of small, anterior, or challenging lesions.

In-bore biopsy is particularly valuable when ultrasound cannot be used, for example, in patients with prior abdominoperineal resection (APR) performed or anal stenosis. Additionally, in-bore biopsy can be considered in patients with repeated negative fusion biopsies but persistent clinical suspicion, as well as for small PI-RADS 4-5 lesions where precise targeting may influence management decisions.

Some evidence indicates that in-bore biopsy achieves high detection rates of clinically significant cancer in MRI-visible lesions. It also allows for a reduction in the number of cores taken, as sampling is focused on MRI-identified targets, potentially lowering morbidity[12]. However, in-bore biopsy is resource-intensive. It requires MRI scanner time, specialised equipment, and trained staff, making it less accessible and more costly than cognitive or software-fusion techniques in many health systems. Furthermore, the patient needs to be put under general anaesthesia or deep sedation under monitored anaesthetic care to keep the patient stable during targeting, as the patient needs to be completely immobilised while moving in and out of the MRI machine between targeted biopsies to allow the operator to insert the biopsy needle. It would also be very cumbersome and time-consuming to perform additional peri-lesional or systematic biopsies in this setting. There is also a lack of real-time image-guidance during needle insertion. In general, a meticulous MRI in-bore biopsy will take 1.5-2 hours to perform.

CONCLUSION

Prostate biopsy and mpMRI now play an essential role in prostate cancer diagnosis. They aim at identifying clinically significant prostate cancer while minimising overdiagnosis and harm. The field has moved from random transrectal systematic sampling towards risk-adapted strategies that combine pre-biopsy mpMRI, transperineal access, and targeted biopsy techniques such as cognitive, software-fusion, or in-bore approaches. Current guidelines emphasise the use of PSA, DRE, MRI findings (including PI-RADS scores), and individual risk factors to determine who should be biopsied and when a repeat biopsy is warranted. Understanding the strengths and limitations of TRUS versus transperineal routes, as well as the different MRI-targeting methods, improves the risk-benefit ratio of prostate cancer detection, and enables urologists to counsel patients more effectively.

References

1. EAU-EANM-ESTRO-ESUR-ISUP-SIOG Guidelines on Prostate Cancer - 2024 Update. Part I: Screening, Diagnosis, and Local Treatment with Curative Intent. Eur Urol. 2024.
2. Jones RJ, Bryant RJ, Choudhury A, Brew-Graves C, Eaton J, Ahmed HU, et al. Local anaesthetic transperineal biopsy versus transrectal prostate biopsy in prostate cancer detection (TRANSLATE): a multicentre, randomised, controlled trial. Lancet Oncol. 2025;26(6):555–67.
3. Ahmed HU, et al. Diagnostic Accuracy of Multi-parametric MRI and TRUS Biopsy in Prostate Cancer (PROMIS). Lancet. 2017;389:815–22.
4. Kasivisvanathan V, et al. MRI-Targeted or Standard Biopsy for Prostate-Cancer Diagnosis (PRECISION). N Engl J Med. 2018;378:1767–77.
5. EANM/EAU/ESTRO Prostate Cancer Guideline Summary – Biopsy Strategy and MRI Use. Guideline Central. 2025.
6. Schoots IG, et al. Biopsy Strategies in the Era of mpMRI: A Comprehensive Review. Prostate Cancer Prostatic Dis. 2024.
7. Grummet J, et al. Sepsis and Complications Following Prostate Biopsy: A Systematic Review and Meta-analysis of Transrectal vs Transperineal Approaches. BJU Int. 2014 and contemporary updates.
8. Van der Leest M, et al. Head-to-head Comparison of Transrectal and Transperineal Biopsy Approaches in the MRI Era. Eur Urol. 2019.
9. Westphalen AC, et al. Prostate Cancer Detection with mpMRI According to PI-RADS v2.1: A Critical Review and Prospective Validation. Eur Radiol. 2022.
10. Wegelin O, et al. Visual-estimation (Cognitive), Image-fusion (Software) and In-bore Targeted Prostate Biopsy: A Systematic Review. World J Urol. 2020.
11. Exterkate L, Wegelin O, Barentsz JO, Vreuls W, Schiphorst A, de Bruin P, et al. The FUTURE trial: a multicenter randomised controlled trial on target biopsy techniques based on magnetic resonance imaging in the diagnosis of prostate cancer in patients with prior negative biopsies. Eur Urol. 2019;75(4):582-90.
12. Boesen L, et al. MRI In-bore Biopsy Following MRI/US Fusion-guided Biopsy: Incremental Value and Outcomes. Clin Radiol. 2024;79:123–31.

Focal Therapy for Prostate Cancer: A Targeted Approach to Balance Oncologic Control and Quality of Life

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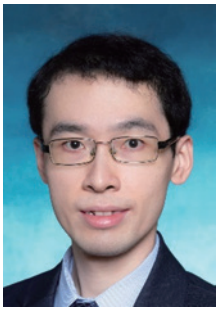

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INTRODUCTION

Whenever a diagnosis of localised prostate cancer is made, the urologist weighs the risk of disease progression against the potentially life-altering side effects of curative treatment. Traditionally, this balance has been struck with a binary choice: active surveillance particularly for low-risk disease, or radical whole-gland therapy (radical prostatectomy or radiotherapy) for more "clinically significant" cancers. However, a paradigm shift is underway. Focal therapy has emerged as a promising middle ground, aiming to provide effective cancer control while dramatically reducing treatment-related morbidity. This article will explore the rationale for this shift, review the current evidence for focal techniques, and provide a practical overview.

BACKGROUND: THE HONG KONG CONTEXT AND CLINICAL FUNDAMENTALS

Epidemiology in Hong Kong

Prostate cancer is a significant and growing health burden for our society. It is the third most common cancer among males, accounting for 16.2 % of all new male cancer cases in 2023. In raw numbers, 3,031 new cases were diagnosed that year, with a median age at diagnosis of 71. Notably, the age-standardised incidence rate has shown a persistent upward trend over the past four decades. While the five-year relative survival rate for stages I-III is excellent (> 97 %), it falls sharply to 45 % for stage IV disease, highlighting the critical importance of early detection and intervention before metastasis occurs[1-2].

Risk Stratification and Basic Treatment Pathways

Management of localised prostate cancer is dictated by risk stratification, which incorporates clinical stage, Gleason Grade Group, and PSA level. Fig. 1 displays the risk stratification system promoted by the European Association of Urology (EAU) Guidelines, which is commonly adopted by urologists practising in Hong Kong.

For patients with low-risk disease: active surveillance is often recommended in order to avoid immediate treatment-related morbidities given that the disease is relatively indolent. For patients with favourable intermediate-risk disease: active surveillance, radiotherapy, or radical prostatectomy are all viable options[4]. For patients with unfavourable intermediate- and high-risk disease: radical prostatectomy (usually with bilateral pelvic lymphadenectomy), or radiotherapy are both possible options.

This framework is effective, but leaves a gap for the patient with intermediate-risk prostate cancer who wishes to avoid the side effects of radical whole-gland treatment.

Definition				
Low-risk	**Intermediate-risk**		**High-risk**	
	Favourable	**Unfavourable**		
ISUP grade 1 and PSA < 10 ng/mL and cT1-2a*	ISUP grade 2 and PSA < 10 ng/ml and cT1-2b* **Or** ISUP grade 1 and PSA 10 – 20 ng/ml and cT1-2b* **Or** ISUP grade 1 and PSA < 10 ng/ml and cT2b*	ISUP grade 2 and PSA 10 – 20 ng/ml and cT1-2b* **Or** ISUP grade 3 and cT1-2b*	ISUP grade 4/5 **Or** PSA > 20 ng/ml **Or** cT2c*	cT3-4* and/or cN+** any ISUP grade* any PSA
Localised				**Locally advanced**

GS = Gleason score; ISUP = International Society for Urological Pathology; PSA = prostate-specific antigen.
** Based on digital rectal examination.*
*** Based on CT/bone scan.*

Fig. 1: Adapted from EAU risk groups for biochemical recurrence of localised and locally-advanced prostate cancer.[3]

COMPLICATIONS OF RADICAL PROSTATECTOMY AND RADIOTHERAPY: THE COST OF CURE

The efficacy of radical prostatectomy and radiotherapy is well-established, but their toxicity profiles drive the search for alternatives. These treatments can significantly impact a patient's quality of life despite a successful cure.

Radical prostatectomy carries risks of urinary incontinence (50 % during the early postoperative period, 10 % at one year postoperatively, and 5 % as a long-term issue) and erectile dysfunction (almost inevitable if a non-nerve-sparing procedure was performed, but the risk may be mitigated to 30 % if bilateral nerve-sparing is successful)[5-6]. The operation usually takes two or more hours, and the associated general anaesthetic risks are not to be taken lightly especially in elderly men with multiple comorbidities.

Radiotherapy, although not requiring general anaesthesia and is not an invasive procedure per se, can still lead to erectile dysfunction (30 - 60 %), as well as long-term risks of radiation cystitis (20 %), radiation proctitis (20 %), or even urethral stricture (5 %)[7].

For many patients, especially those with a single, identifiable tumour focus on the MRI, the prospect of these side effects raises a valid question: Is treating the entire gland necessary? Can we do with just treating the lesion without disrupting the critical structures that surround the prostate?

FOCAL THERAPY: A PARADIGM OF PRECISION TREATMENT

Focal therapy, which has been gaining steady traction internationally over the past decade, answers this question by aiming to selectively ablate or destroy the index lesion (the tumour focus that is most likely to dictate the disease course), while preserving the surrounding healthy prostate tissue, urethra, external urethral sphincter, and neurovascular bundles (which directly govern erectile function). The goal is to retain oncologic control while minimising genitourinary toxicity.

The success of focal therapy is predicated on modern, precise diagnostics. Multiparametric MRI (mpMRI) and subsequent MRI-targeted and mapping biopsies allow for accurate spatial localisation of the clinically significant cancer focus, making targeted treatment possible. Current consensus suggests focal therapy is most appropriately considered for patients with intermediate-risk, localised disease who are otherwise candidates for radical therapy, but seek to reduce treatment-related complications[3, 8-9].

ENERGY MODALITIES: THE TOOLS OF FOCAL THERAPY

Several energy platforms can be used to achieve focal ablation, each with its distinct mechanism of action. The choice depends on tumour location, gland anatomy, availability of the relevant equipment, and the surgeon expertise. Table 2 summarises the key modalities.

Energy Modality	Mechanism of Action	Key publications
Targeted Microwave Ablation (TMA) *(Fig. 2)*	Uses electromagnetic microwaves to generate frictional heat for thermal ablation, resulting in coagulative necrosis.	Delongchamps et al., *BJUI Compass*(2023) – The VIOLETTE Trial[13] Chiu et al., *Eur Urol Oncol* (2025) – The TMA-HK Trial[14]
Irreversible Electroporation (IRE) *(Fig. 3)*	Delivers high-voltage, short-pulse electrical currents to create permanent nanopores in cell membranes, causing apoptosis	George et al., *Eur Urol* (2025) – The PRESERVE Trial[15]
Cryoablation (Cryotherapy) *(Fig. 4)*	Uses argon cooling to create an ice ball around the needle that freezes and destroys tissue	Borges et al., J Urol (2021) – Focal Versus Whole Gland Ablation10 (evaluates HIFU as well as cryoablation)
High-Intensity Focused Ultrasound (HIFU) *(Fig. 5)*	Uses focused ultrasound waves to generate intense heat for thermal ablation	Ploussard et al., *Eur Urol* (2024) — The HIFI Trial[9]

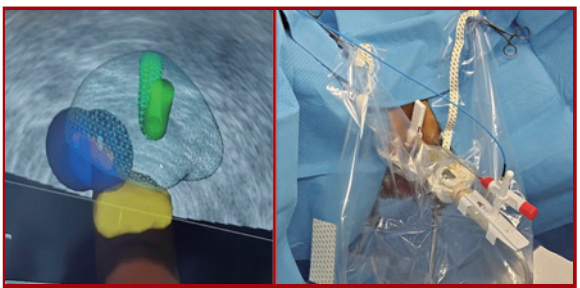

Fig. 2: Microwave ablation. (Left) Software fusion of transrectal ultrasound and magnetic resonance imaging, depicting the locations of the urethra (green), rectal spacer (yellow), rectum (brown), microwave ablation zones (blue), and the lesion (orange). (Right) Set up with the microwave ablation needle in situ (Clinical photos from personal collection)

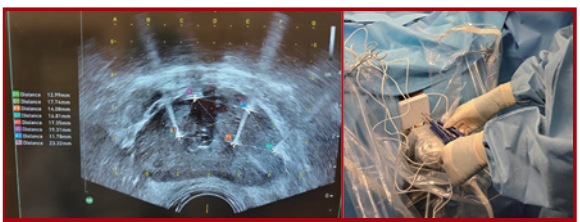

Fig. 3: Irreversible electroporation. (Left) Transrectal ultrasound image showing the placement of five IRE electrodes around the prostate cancer lesion. (Right) Precise positioning of the probes on using a brachytherapy grid (Clinical photos from personal collection)

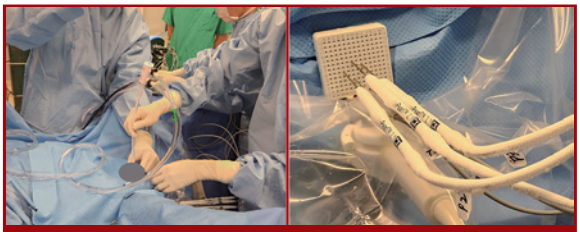

Fig. 4: Cryoablation. (Left) Insertion of a urethral warmer to protect the urethra from freezing. (Right) Set up with the cryoablation needles in situ. One can observe the ice crystals forming on the probes and the tubing (Clinical photos from personal collection)

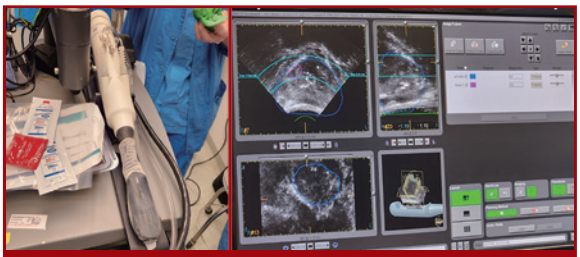

Fig. 5: High-Intensity Focused Ultrasound. (Left) The HIFU probe, to be inserted into the rectum. (Right) A HIFU software interface depicting an axial ultrasonic view of the prostate, and the ablation zone (Clinical photos from personal collection)

EFFICACY: ROBUST ONCOLOGICAL CONTROL

A recent Hong Kong-based study led by Yee et al. from the CUHK group followed 102 patients with predominantly intermediate-risk prostate cancer[16]. They were treated with either HIFU, cryotherapy, or targeted microwave ablation. The choice of modality was tailored to tumour location (e.g., HIFU for posterior tumours, cryotherapy or TMA for anterior tumours). With a median follow-up of 12 months, the clinically significant recurrence (ISUP Grade Group ≥ 2) rate was 11.1 %, and only 5.9 % of the entire cohort required salvage radical treatment[16].

The multi-centre study by Stabile et al. provides evidence regarding longer-term oncological control specifically with HIFU[17]. In this study, a large cohort of 1,032 men (80.3 % with Gleason score ≥ 3 + 4) treated with focal or hemi-gland ablation HIFU, the radical treatment-free survival rates were 91 % at five years and 81 % at eight years. This indicates that the majority of appropriately selected patients can avoid radical therapies in the medium-to-long-term following focal HIFU[17].

SAFETY PROFILE: MINIMISING TREATMENT MORBIDITY

The safety profile of focal therapy is its most compelling advantage when compared to radical prostatectomy or radiotherapy. A 2021 review found that when compared to whole-gland therapy, focal therapy provides superior preservation of erectile function and urinary continence.[10-11] Overall complication rates are significantly lower. Common peri-procedural issues are generally mild and transient, including haematuria, dysuria, urinary tract infection (UTI), and acute urinary retention (each occurring in up to 17 % of cases)[12]. Major complications are rare, and vary according to the energy modality chosen. Urinary incontinence occurs in < 1 - 2 % of cases; recto-urethral fistula in < 0.5 - 1 % of cases; erectile dysfunction in up to 46% of cases, heavily dependent on baseline erectile function, and the extent of ablation near the neurovascular bundles on either side of the prostate.[10-18]

CONCLUSION AND FUTURE DIRECTIONS

Focal therapy is a significant step forward in the evolution of personalised medicine for localised prostate cancer. While not universally applicable for all patients - particularly those with high-risk or multifocal disease, it offers a compelling middle ground for the carefully selected patient with a relatively small, MRI-visible index lesion. Its foundational promise is the preservation of quality of life, with demonstrated superior outcomes in urinary continence and erectile function compared to radical whole-gland treatments. However, a central issue is the current paucity of large-scale randomised controlled trials directly comparing focal therapy to radical prostatectomy or radiotherapy. Consequently, as noted by guidelines such as those from the EAU[3], most focal therapy modalities remain investigational and are recommended only within the context of clinical trials. This landscape underscores the critical need for standardised definitions and protocols to facilitate its application.

The future of focal therapy depends on generating high quality evidence to evaluate its safety and efficacy. Princess Margaret Hospital and Prince of Wales Hospital are actively recruiting patients in a multi-centre prospective trial to evaluate microwave ablation. Our goal is to systematically address the pros and cons of microwave ablation through rigorous research. We hope to see focal therapy solidify its role as a safe and effective modality in the urologist's armamentarium in treating prostate cancer.

References

1. Centre of Health Protection, Department of Health, The Government of the Hong Kong Special Administrative Region Obtainable at: https://www.chp.gov.hk/en/healthtopics/content/25/5781.html
2. Cancer Online Resouce Hub, The Government of the Hong Kong Special Administrative Region Obtainable at: https://www.cancer.gov.hk/en/hong_kong_cancer/common_cancers_in_hong_kong/prostate_cancer.html
3. EAU Guidelines. Edn. presented at the EAU Annual Congress Madrid 2025. ISBN 978-94-92671-29-5.
4. Hamdy FC, Donovan JL, Lane JA, Metcalfe C, Davis M, Turner EL, Martin RM, Young GJ, Walsh EI, Bryant RJ, Bollina P, Doble A, Doherty A, Gillatt D, Gnanapragasam V, Hughes O, Kockelbergh R, Kynaston H, Paul A, Paez E, Powell P, Rosario DJ, Rowe E, Mason M, Catto JWF, Peters TJ, Oxley J, Williams NJ, Staffurth J, Neal DE; ProtecT Study Group. Fifteen-Year Outcomes after Monitoring, Surgery, or Radiotherapy for Prostate Cancer. N Engl J Med. 2023 Apr 27;388(17):1547-1558. doi: 10.1056/NEJMoa2214122. Epub 2023 Mar 11. PMID: 36912538.
5. Ramsay C, Pickard R, Robertson C, Close A, Vale L, Armstrong N, Barocas DA, Eden CG, Fraser C, Gurung T, Jenkinson D, Jia X, Lam TB, Mowatt G, Neal DE, Robinson MC, Royle J, Rushton SP, Sharma P, Shirley MD, Soomro N. Systematic review and economic modelling of the relative clinical benefit and cost-effectiveness of laparoscopic surgery and robotic surgery for removal of the prostate in men with localised prostate cancer. Health Technol Assess. 2012;16(41):1-313. doi: 10.3310/hta16410. PMID: 23127367; PMCID: PMC4780976.
6. Lindenberg MMA, Retèl VVP, Kieffer JJM, Wijburg CC, Fossion LLMCL, van der Poel HHG, van Harten WWH. Long-term functional outcomes after robot-assisted prostatectomy compared to laparoscopic prostatectomy: Results from a national retrospective cluster study. Eur J Surg Oncol. 2021 Oct;47(10):2658-2666. doi: 10.1016/j.ejso.2021.06.006. Epub 2021 Jun 8. PMID: 34140189.

7. Bolla M, Neven A, Maingon P, Carrie C, Boladeras A, Andreopoulos D, Engelen A, Sundar S, van der Steen-Banasik EM, Armstrong J, Peignaux-Casasnovas K, Boustani J, Herrera FG, Pieters BR, Slot A, Bahl A, Scrase CD, Azria D, Jansa J, O'Sullivan JM, Van Den Bergh ACM, Collette L; EORTC Radiation Oncology Group. Short Androgen Suppression and Radiation Dose Escalation in Prostate Cancer: 12-Year Results of EORTC Trial 22991 in Patients With Localized Intermediate-Risk Disease. J Clin Oncol. 2021 Sep 20;39(27):3022-3033. doi: 10.1200/JCO.21.00855. Epub 2021 Jul 26. PMID: 34310202.
8. Tracey AT, Nogueira LM, Alvim RG, Coleman JA, Murray KS. Focal therapy for primary and salvage prostate cancer treatment: a narrative review. Transl Androl Urol. 2021 Jul;10(7):3144-3154. doi: 10.21037/tau-20-1212. PMID: 34430417; PMCID: PMC8350247.
9. Ploussard G, Coloby P, Chevallier T, Occéan BV, Houédé N, Villers A, Rischmann P; HIFI group. Whole-gland or Subtotal High-intensity Focused Ultrasound Versus Radical Prostatectomy: The Prospective, Noninferiority, Nonrandomized HIFI Trial. Eur Urol. 2025 May;87(5):526-533. doi: 10.1016/j.eururo.2024.11.006. Epub 2024 Dec 4. PMID: 39632125.
10. Borges RC, Tourinho-Barbosa RR, Glina S, Macek P, Mombet A, Sanchez-Salas R, Cathelineau X. Impact of Focal Versus Whole Gland Ablation for Prostate Cancer on Sexual Function and Urinary Continence. J Urol. 2021 Jan;205(1):129-136. doi: 10.1097/JU.0000000000001327. Epub 2020 Aug 17. PMID: 33119421.
11. Fallara G, Capogrosso P, Maggio P, Taborelli A, Montorsi F, Dehò F, Salonia A. Erectile function after focal therapy for localized prostate cancer: a systematic review. Int J Impot Res. 2021 May;33(4):418-427. doi: 10.1038/s41443-020-00357-9. Epub 2020 Sep 30. PMID: 32999435.
12. Rakauskas A, Marra G, Heidegger I, Kasivisvanathan V, Kretschmer A, Zattoni F, Preisser F, Tilki D, Tsaur I, van den Bergh R, Kesch C, Ceci F, Fankhauser C, Gandaglia G, Valerio M. Focal Therapy for Prostate Cancer: Complications and Their Treatment. Front Surg. 2021 Jul 12;8:696242. doi: 10.3389/fsurg.2021.696242. PMID: 34322516; PMCID: PMC8311122.
13. Delongchamps NB, Peltier A, Potiron E, Bladou F, Anract J, Diamand R, Robert G, Messas A, Van Velthoven R. Targeted microwave ablation of localised prostate cancer: Initial results of VIOLETTE trial. BJUI Compass. 2024 Oct 30;5(12):1307-1313. doi: 10.1002/bco2.444. PMID: 39744070; PMCID: PMC11685167.
14. Chiu PK, Chan CH, Yee CH, Lau SY, Teoh JY, Wong HF, Lo KL, Yuen TY, Hung HY, Cho CC, Ng CF. Transperineal Targeted Microwave Ablation (TMA) of localized prostate cancer guided by MRI-Ultrasound fusion and organ-based tracking: a pilot study. Prostate Cancer Prostatic Dis. 2023 Dec;26(4):736-742. doi: 10.1038/s41391-022-00577-8. Epub 2022 Jul 14. PMID: 35835844.
15. George AK, Miocinovic R, Patel AR, Lomas DJ, Correa AF, Chen DYT, Rastinehad AR, Schwartz MJ, Sidana A, Stensland KD, Helfand BT, Gahan JC, Meng X, Yu A, Brisbane WG, Vourganti S, Barqawi AB, Uchio EM, Wysock JS, Polascik TJ, McClure TD, Fainberg J, Coleman JA. Irreversible Electroporation for Prostate Tissue Ablation in Patients with Intermediate-risk Prostate Cancer: Results from the PRESERVE Trial. Eur Urol. 2025 Jul 19:S0302-2838(25)00346-X. doi: 10.1016/j.eururo.2025.06.003. Epub ahead of print. PMID: 40685282.
16. Yee CH, Chiu PKF, Liu AQ, Wong HF, Chan WHC, Lo KL, Chan CK, Chan R, Cho CM, Hung HY, Teoh JYC, Ng CF. Multimodality focal therapy for prostate cancer: outcome of the à la carte approach in clinical practice. Prostate International, Volume 13, Issue 4, 2025, Pages 201-206, ISSN 2287-8882. https://doi.org/10.1016/j.prnil.2025.03.006.
17. Stabile A, Orczyk C, Hosking-Jervis F, Giganti F, Arya M, Hindley RG, Dickinson L, Allen C, Punwani S, Jameson C, Freeman A, McCartan N, Montorsi F, Briganti A, Ahmed HU, Emberton M, Moore CM. Medium-term oncological outcomes in a large cohort of men treated with either focal or hemi-ablation using high-intensity focused ultrasonography for primary localized prostate cancer. BJU Int. 2019 Sep;124(3):431-440. doi: 10.1111/bju.14710. Epub 2019 Mar 18. PMID: 30753756.
18. Shoji S, Naruse J, Ohno S, Aoki M, Takahashi K, Yuzuriha S, Kuroda S, Umemoto T, Nakajima N, Hasegawa M, Kawamura Y, Kajiwara H, Hashida K, Uemura K, Hasebe T, Tajiri T. Focal therapy using high-intensity focused ultrasound with intraoperative prostate compression for patients with localized prostate cancer: a multi-center prospective study with 7 year experience. Prostate Cancer Prostatic Dis. 2025 Sep;28(3):782-788. doi: 10.1038/s41391-024-00921-0. Epub 2024 Nov 23. PMID: 39580599; PMCID: PMC12399414.

Rezūm and UroLift: Popular Alternative Treatments to TURP

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ABSTRACT

Transurethral resection of prostate (TURP) has been considered as the gold standard for patients suffering from refractory lower urinary tract symptoms (LUTS) despite medications and catheter dependent patients. However, TURP carries a 10 % morbidity rate[1], especially negatively impacting the sexual function of patients receiving the surgery. It also carries higher surgical and anaesthetic risks for frail elderly patients. Many forms of minimally invasive surgical therapies (MIST) have been developed in recent years, with convective water vapour energy ablation (The Rezūm system) and prostatic urethral lift (UroLift System) being the two most commonly used and readily available "game changers".

INTRODUCTION

Benign prostate hyperplasia (BPH) is a highly prevalent condition. Previous studies showed that > 40 % of men in their 50s would have histological BPH, and > 15 % of them would have suffered from moderate to severe LUTS[2]. Absolute indications for BPH surgery include refractory retention of urine and obstructive uropathy. Other indications include patients with LUTS refractory to medical treatment and those with BPH complications, for example, haematuria, urinary tract infection and bladder stones. Conventionally, TURP has been widely considered to be the gold standard for BPH surgery. However, TURP carries a relatively high rate of sexual function complications, which could cause distress to sexually active patients. Frail elderly patients with multiple medical comorbidities are also not always ideal candidates for TURP due to surgical and anaesthetic risks. Rezūm and Urolift are two of the most readily available MIST procedures that can be done under local anaesthesia or even in office settings.

TRANSURETHRAL RESECTION OF THE PROSTATE

Introduced by Maximilian Stern a century ago in 1926, TURP remains the gold standard for patients suffering from male LUTS with absolute indications for surgery, non-responders to medical treatment or those who do not want medical treatment but request active treatment. Conventional monopolar TURP is performed using an electrical wire-loop, removing prostate tissue from the bladder neck to the verumontanum down to the prostatic capsule, with glycine as the non-ionic irrigation fluid. On the other hand, bipolar TURP utilises the plasma-kinetic principle which converts the conductive medium, saline, into a plasma field for tissue vaporisation. When compared to M-TURP, B-TURP is associated with less bleeding, fewer transfusions, and lower risk of TUR syndrome[3]. In the Hong Kong public sector, B-TURP is considered the standard of care for many years, and has been the first line surgical treatment to be offered to patients till this day. TURP carries a considerable morbidity rate, especially affecting the sexual function of patients. Studies showed that patients have a ~ 60 % chance of developing retrograde ejaculation and ~ 5% chance of newly developed erectile dysfunction after TURP[4,5]. Other morbidities include anaesthetic risk, bleeding, transurethral resection (TUR) syndrome, urinary incontinence and urethral stricture. Some sexually active patients would become hesitant for surgery due to the potential complications, and some became dissatisfied with their sexual functions after TURP. In some cases, patients who are indicated for BPH surgery are of advanced age, or have multiple medical comorbidities. These frail patients may experience higher surgical and anesthetic risks when undergoing TURP.

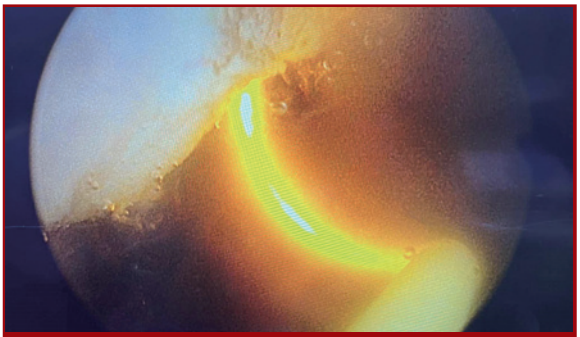

Fig. 1: Bipolar TURP (Personal collection of Dr A Fan)

CONVECTIVE WATER VAPOUR ENERGY (WAVE) ABLATION: THE REZŪM SYSTEM

The Rezūm system uses radiofrequency power to create thermal energy in the form of water vapour up to 103 °C. The steam is injected into the prostate and latent heat created from water vapour condensing in the prostatic tissue causes cell necrosis. Usually, one to three injections are needed for each lateral lobe and one to two injections for the median lobe. This procedure can

be done in an office-based setting under local anaesthesia with or without sedation. Each injection lasts nine seconds, and the whole procedure typically lasts 10-15 minutes. Treated patients need to be catheterised for 3-7 days, depending on prostate size, number of treatment cycles and whether the patient had refractory retention (on a Foley's catheter) before the operation[6,7,8]. RCT comparing Rezūm against sham treatment showed that WAVE therapy significantly improved LUTS symptoms in terms of IPSS and maximal flow rate (Qmax)[9]. Rezūm is also shown to provide sustainable improvements for 12 months to lower urinary tract symptoms and urinary flow while preserving erectile and ejaculatory functions in the same study. Safety profile was favourable with adverse events (20 % dysuria, 10 % haematuria) documented to be mild-to-moderate and resolving rapidly[6]. It is however, important to note that there was no relevant impact on post-void residual (PVR) observed in the RCT[9]. There are also no completed head to head RCTs comparing WAVE therapy against a reference technique (e.g. TURP). Cochrane review reported that the certainty of evidence for WAVE therapy ranged from moderate to very low due to study limitations[10]. Rezūm has now been widely accepted as an alternative treatment option to TURP in Hong Kong. It is also supported by the American Urology Association guideline for treating small to moderate sized prostates. The European Association of Urology guidelines, however, did not give a definite recommendation concerning Rezūm due to the lack of RCT comparing with TURP.

Fig. 2: The Rezūm device (Personal collection of Dr A Fan)

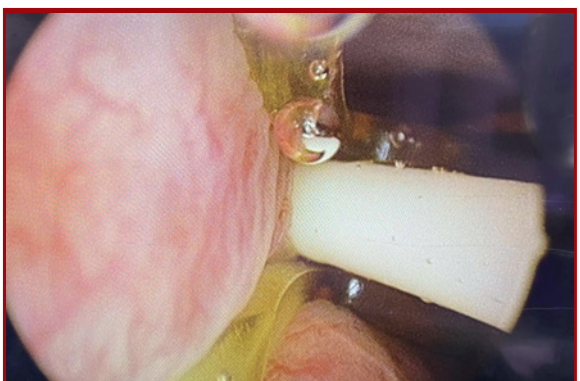
Fig. 3: Rezūm steam injection (Personal collection of Dr A Fan)

PROSTATIC URETHRAL LIFT (PUL): UROLIFT SYSTEM

Prostatic urethral lift is a minimally invasive surgery where small permanent suture-based implants are delivered under cystoscopic guidance into the lateral lobes of the prostate. The encroaching lateral lobes are compressed and retracted, resulting in a patent continuous anterior channel through the prostatic fossa. It is also an office-based procedure that can be performed under local anaesthesia. As opposed to Rezūm, a PUL procedure does not require routine catheterisation after the operation, and only about 30 % patients need to go home with a Foley's catheter[11]. The implant is composed of nitinol, polyester suture and stainless steel. The most common complications reported post-operatively included haematuria, dysuria and pelvic pain. Most symptoms were mild-to-moderate in severity and resolved within two to four weeks after the procedure. In a non-inferior RCT comparing PUL against TURP, PUL resulted in superior quality of recovery and ejaculatory function preservation[12]. A retrospective observational study also demonstrated for patients in retention, 69 % were catheter free after five days, 83% after one month and 89% by study end at two years[11]. There are however, limited data on treating patients with an obstructed middle lobe, and the effectiveness in large prostate glands has not been shown yet. The EAU guideline currently recommends offering PUL to men with LUTS interested in preserving ejaculatory function, with prostates < 70 mL and no middle lobe. And also to those indicated for BPH surgery but cannot go under anaesthesia. The limitations of Urolift includes lack of data to support its effectiveness for larger prostates, risk of placement of Urolift device across the bladder mucosa (requiring revision surgery), rare complication of bleeding in the pelvis requiring embolisation, and status of small permanent metallic implants, which may affect quality of future MRI prostate imaging[13,14]. Furthermore, in non head-to-head comparison between Rezūm and Urolift, Urolift was shown to have a higher surgical retreatment rate than Rezūm (13 % vs 4 %)[15,16].

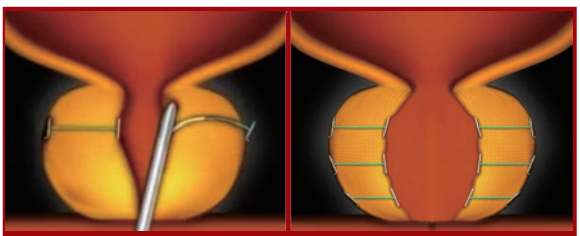
Fig. 4: Placement of Urolift implants (Excerpted from UroLift website, www.urolift.com)

CONCLUSION

While conventional TURP remains the gold standard of BPH surgery, it is not without significant risks and complications. The choice of surgical technique should depend on the prostate size, co-morbidities of the patient, ability to undergo anaesthesia, patients' preferences and their willingness to accept surgery-associated specific side-effects. Rezūm provides

improvement in lower urinary tract symptoms, preserves sexual function, and is associated with low surgical retreatment rates. Urolift is one of the surgical options supported by the EAU guideline for small to medium size prostates. That said, long-term studies are needed to evaluate the duration of its effect in comparison to other techniques, especially for large prostate glands and those with an obstructed middle lobe.

References

1. Reich, O., et al. Morbidity, mortality and early outcome of transurethral resection of the prostate: a prospective multicenter evaluation of 10,654 patients. J Urol, 2008. 180: 246. https://pubmed.ncbi.nlm.nih.gov/18499179
2. Jacobsen, S.J., et al. Treatment for benign prostatic hyperplasia among community dwelling men: the Olmsted County study of urinary symptoms and health status. J Urol, 1999. 162: 1301. https://pubmed.ncbi.nlm.nih.gov/10492184
3. Cornu, J.N., et al. A Systematic Review and Meta-analysis of Functional Outcomes and Complications Following Transurethral Procedures for Lower Urinary Tract Symptoms Resulting from Benign Prostatic Obstruction: An Update. Eur Urol, 2015. 67: 1066. https://pubmed.ncbi.nlm.nih.gov/24972732
4. Porto, J.G. et al, Evaluating transurethral resection of the prostate over twenty years: a systematic review and meta-analysis of randomized clinical trials. World J Urol. 2024 Nov 15;42(1):639. doi: 10.1007/s00345-024-05332-3. https://pmc.ncbi.nlm.nih.gov/articles/PMC11568034/
5. El-Assmy, A., et al. Erectile and ejaculatory functions changes following bipolar versus monopolar transurethral resection of the prostate: a prospective randomized study. Int Urol Nephrol, 2018. 50: 1569. https://pubmed.ncbi.nlm.nih.gov/30083842
6. McVary KT, et al. Minimally invasive prostate convective water vapor energy (WAVE) ablation: A multicenter, randomized, controlled study for treatment of lower urinary tract symptoms secondary to benign prostatic hyperplasia. J Urol. 2016 May;195(5):1529-38. https://pubmed.ncbi.nlm.nih.gov/26614889/
7. McVary KT, et al. Rezūm water vapor thermal therapy for lower urinary tract symptoms associated with benign prostatic hyperplasia: 4-year results from randomized controlled study. Urology. 2019 Apr;126:171-9. https://pubmed.ncbi.nlm.nih.gov/30677455/
8. Bassily, D. et al. Rezūm for retention-retrospective review of water vaporization therapy in the management of urinary retention in men with benign prostatic hyperplasia. 2021 Oct;81(14):1049-1054. doi: 10.1002/pros.24201. Epub 2021 Jul 20. https://pubmed.ncbi.nlm.nih.gov/34287992/
9. McVary, K.T., et al. Erectile and Ejaculatory Function Preserved With Convective Water Vapor Energy Treatment of Lower Urinary Tract Symptoms Secondary to Benign Prostatic Hyperplasia: Randomized Controlled Study. J Sex Med, 2016. 13: 924. https://pubmed.ncbi.nlm.nih.gov/27129767
10. Kang, T.W., et al. Convective radiofrequency water vapour thermal therapy for lower urinary tract symptoms in men with benign prostatic hyperplasia. Cochrane Database Syst Rev, 2020. 3: CD013251. https://pubmed.ncbi.nlm.nih.gov/32212174
11. Eure, G., et al. Real-World Evidence of Prostatic Urethral Lift Confirms Pivotal Clinical Study Results: 2-Year Outcomes of a Retrospective Multicenter Study. J Endourol, 2019. 33: 576. https://pubmed.ncbi.nlm.nih.gov/31115257
12. Sonksen, J., et al. Prospective, Randomized, Multinational Study of Prostatic Urethral Lift Versus Transurethral Resection of the Prostate: 12-month Results from the BPH6 Study. Eur Urol, 2015. 68: 643. https://pubmed.ncbi.nlm.nih.gov/25937539
13. Juliebø-Jones, P. et al, Complications and device failures associated with urolift: Findings from the MAUDE database. 2023 Jun 8;90(4):636–641. doi: 10.1177/03915603231180016. https://pmc.ncbi.nlm.nih.gov/articles/PMC10623594/
14. Benidir, T. et al. Impact of Prostate Urethral Lift Device on Prostate Magnetic Resonance Image Quality. J Urol . 2023 Jan 11:101097JU0000000000003156. doi: 10.1097/JU.0000000000003156. https://pubmed.ncbi.nlm.nih.gov/36630568/
15. Roehrborn, C.G., et al. Five year results of the prospective randomized controlled prostatic urethral L.I.F.T. study. Can J Urol, 2017. 24: 8802. https://pubmed.ncbi.nlm.nih.gov/28646935
16. Roehrborn, C.G., et al. Convective Thermal Therapy: Durable 2-Year Results of Randomized Controlled and Prospective Crossover Studies for Treatment of Lower Urinary Tract Symptoms Due to Benign Prostatic Hyperplasia. J Urol, 2017. 197: 1507. https://pubmed.ncbi.nlm.nih.gov/27993667

Radiology Quiz

Dr Natalie MOK

MBBS, FRCR

Dr Natalie MOK

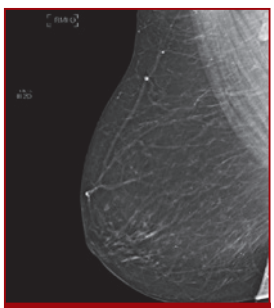

Fig. 1: Mammogram in 2023

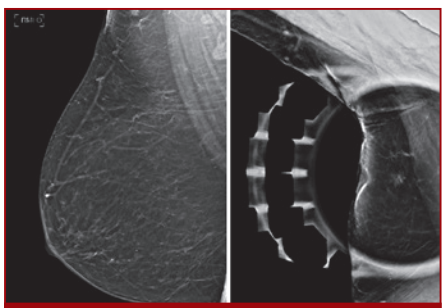

Fig. 2 and 3: Mammogram in 2025

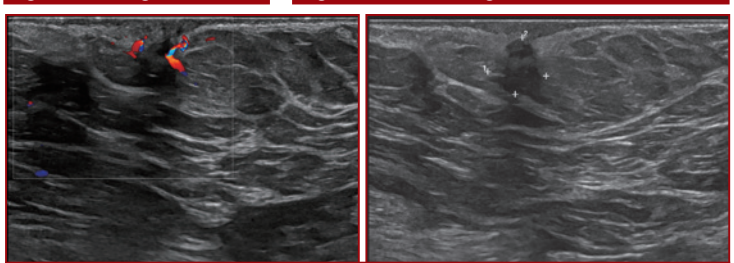

Fig. 4 and 5: Selected USG breast images from 2025

Questions

An adult patient on surveillance mammogram and USG following left breast BCT.

1. What are the abnormalities on the R mammogram and subsequent USG?
2. How would you grade the lesion?

(See P. 31 for answers)

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1	★HKMA CME Portal (Online) HKMA-KWC CME Online Lecture Series on Common Medical Conditions for GP in 2026 Topic: Diabetes Mellitus 2	★In-person / HKMA CME Portal (Online) HKMA-HKSH CME Programme 2026 Topic: Updates of the Radiotherapy for Prostate Cancer 3	★HKMA CME Portal (Online) Topic: Modulating the Gut Microbiome for Colorectal Cancer Prevention - From Diagnostics to Therapeutics 4	★Certificate Course on Mental Health 2026 – Empowering Professionals to Support Mental Well-being (Video Lectures) 5	★In-person Topic: Allergic Rhinitis Post-COVID Era: ENT Prospective 6	7
8	9	★HKMA CME Portal (Online) Topic: Update of eHealth+ and connectivity through HKMA CMS 5.0 10	★The Hong Kong Neurosurgical Society Monthly Academic Meeting – To be confirmed 11	★In-person Topic: Reducing The Burden of MAFLD and Management Strategy ★Certificate Course on Mental Health 2026 – Empowering Professionals to Support Mental Well-being (Video Lectures) 12	13	14
15	16	17	18	19	20	21
22	23	24	25	★FMSHK Executive Committee Meeting ★FMSHK Council Meeting 26	27	28

Date / Time	Function	Enquiry / Remarks
2 MON 2:00 PM	**HKMA CME Portal (Online)** **HKMA-KWC CME Online Lecture Series on Common Medical Conditions for GP in 2026** **Topic: Diabetes Mellitus** Organiser: The Hong Kong Medical Association Speaker: Dr June Kam-yin LI	HKMA CME Dept. Tel: 2527 8452 1 CME Point
3 TUE 2:00 PM	**In-person / HKMA CME Portal (Online)** **HKMA-HKSH CME Programme 2026** **Topic: Updates of the Radiotherapy for Prostate Cancer** Organisers: The Hong Kong Medical Association and Hong Kong Sanatorium & Hospital Speaker: Dr Darren Ming-chun POON Venue: The HKMA Wanchai Premises, 5/F, Duke of Windsor Social Service Building, 15 Hennessy Road, Wanchai, Hong Kong	HKMA CME Dept. Tel: 2527 8452 1 CME Point
4 WED 2:00 PM	**HKMA CME Portal (Online)** **Topic: Modulating the Gut Microbiome for Colorectal Cancer Prevention - From Diagnostics to Therapeutics** Organiser: The Hong Kong Medical Association Speaker: Dr Eugene Yu-hang YEUNG	HKMA CME Dept. Tel: 2527 8452 1 CME Point
5 THU 7:00 PM	**Certificate Course on Mental Health 2026 – Empowering Professionals to Support Mental Well-being (Video Lectures)** Organisers: The Federation of Medical Societies of Hong Kong & The Hong Kong College of Psychiatrists Speaker: Dr Chi-wing LOK	Ms ToTo CHAN Tel: 2821 3512
6 FRI 2:00 PM	**In-person** **Topic: Allergic Rhinitis Post-COVID Era: ENT Prospective** Organiser: The Hong Kong Medical Association Speaker: Dr Jonathan Kai-yum LAU Venue: The HKMA Wanchai Premises, 5/F., Duke of Windsor Social Service Building, 15 Hennessy Road, Wanchai, Hong Kong	HKMA CME Dept. Tel: 2527 8452 1 CME Point
10 TUE 2:00 PM	**HKMA CME Portal (Online)** **Topic: Update of eHealth+ and connectivity through HKMA CMS 5.0** Organisers: The Hong Kong Medical Association and Hospital Authority Speaker: Mr Hudson King-chung CHAN	HKMA CME Dept. Tel: 2527 8452 1 CME Point
11 WED 7:30 AM	**The Hong Kong Neurosurgical Society Monthly Academic Meeting – To be confirmed** Organiser: Hong Kong Neurosurgical Society Speaker(s): Dr Bill Ka-biu WONG Chairman: Dr Samuel Siu-kei LAM Venue: Seminar Room, G/F, Block A, Queen Elizabeth Hospital; or via Zoom meeting	CME Accreditation College: 1.5 points College of Surgeons of Hong Kong Dr Jason CHOW Tel: 2595 6456 Fax. No.: 2965 4061
12 THU 2:00 PM	**In-person** **Topic: Reducing The Burden of MAFLD and Management Strategy** Organiser: The Hong Kong Medical Association Speaker: Dr Heyson Chi-hey CHAN Venue: Crystal Ballroom A&B, 2/F, The Cityview, 23 Waterloo Road, Kowloon	HKMA CME Dept. Tel: 2527 8452 1 CME Point
7:00 PM	**Certificate Course on Mental Health 2026 – Empowering Professionals to Support Mental Well-being (Video Lectures)** Organisers: The Federation of Medical Societies of Hong Kong & The Hong Kong College of Psychiatrists Speaker: Dr Kwong-sun LIU	Ms ToTo CHAN Tel: 2821 3512
26 THU 7:00 PM	**FMSHK Executive Committee Meeting** Organiser: The Federation of Medical Societies of Hong Kong Venue: Council Chamber, 4/F, Duke of Windsor Social Service Building, 15 Hennessy Road, Wanchai, Hong Kong	Ms Nancy CHAN Tel: 2527 8898
8:00 PM	**FMSHK Council Meeting** Organiser: The Federation of Medical Societies of Hong Kong Venue: Council Chamber, 4/F, Duke of Windsor Social Service Building, 15 Hennessy Road, Wanchai, Hong Kong	Ms Nancy CHAN Tel: 2527 8898

Answers to Radiology Quiz

Answers:

1. A new 8mm spiculated high-density mass is seen within the R axillary accessory breast, which corresponds to a hypervascular lesion with skin extension on subsequent ultrasound.

2. BIRADS 5

   The final pathology is invasive carcinoma of no special type in the right accessory breast. Note that breast cancer in the accessory breast is rare but possible, and most commonly occurs in the axilla, which should always be a review area for radiologists.

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eHealth
香港特別行政區政府 HKSARGOVT

立即申請「醫健通+連通支援計劃」
Apply eHealth+ Connectivity Support Scheme Now

好處 Benefits

連通醫健通 提升診治效率！
Connect with eHealth to enhance clinical efficiency!

醫護機構

- 取得病人授權後查閱健康紀錄，提升診治效率及服務質量。
- 方便參與公私營協作計劃及將相關醫療紀錄存入醫健通，促進跨界別及跨專業醫護合作。

Healthcare Providers (HCPs)

- Access patients' health records with authorisation, enhancing clinical efficiency and service quality.
- Facilitate participation in Public-Private Partnership programmes and deposit of relevant medical records into eHealth, fostering cross-sectoral and multi-disciplinary healthcare collaboration.

病人

- 建立終身及全面的電子健康紀錄，方便管理個人健康和醫護服務。
- 協助醫護制定適切的治療方案，提供更精確的診斷，以及節省護理成本。

Patients

- Build lifelong and comprehensive electronic health records (eHRs) to support management of personal health and healthcare services.
- Enable formulation of personalised treatment plans by HCPs, enabling more accurate diagnoses and reduce care costs.

醫健通+連通支援計劃，支援私營機構連通醫健通！
eHealth+ Connectivity Support Scheme
to support private healthcare providers to connect with eHealth!

- 協助私營醫護機構採用已連通醫健通的臨床醫療管理系統，並在獲得病人授權後存放電子健康紀錄。
- To empower private HCPs in adopting electronic medical record systems that are connected to eHealth for depositing eHRs of patients with authorisation.

掃描了解更多 Scan for Details

申請醫健通+連通支援計劃
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截止日期：2026年3月31日
Deadline: 31 March 2026

INTUITIVE

AT THE POINT OF POSSIBILITY™

The point where possibility is within reach.