Original article

Frequency and severity of lower urinary tract symptomatology related to prostate disease in a mexican population

Frecuencia y severidad de sintomatología del tracto urinario inferior relacionados con enfermedad prostática en una población mexicana

Manuel Pérez-Chan,[1] Monserrat Iveth Hernández-Hernández,[1] Sandra Paola de la Cruz-Solís,[1] Sergio Quiroz-Gómez,[1*] Karla del Socorro Celorio-Méndez, [1] Crystell Guadalupe Guzmán-Priego.[1]

Abstract

Objective: To evaluate the frequency and severity of prostate symptoms in men aged 40-70 years in Tabasco, Mexico, where the lack of local data limits prevention strategies and early detection of pathologies such as prostate cancer and benign prostatic hyperplasia (BPH).

Methods: Descriptive, cross-sectional study (February-August 2024) of 383 randomly selected men. The International Prostate Symptom Scale (IPSS) and a socio-demographic questionnaire were used. Data were analyzed with SPSS v25 using descriptive statistics and Spearman correlation.

Results: 79.1 % of participants reported at least one lower urinary tract symptom (LUTS) in the last month, with nocturia (26.4 %) and urinary frequency (46 %) being the most common. Symptoms were mild in 54 %, moderate in 31.2 % and severe in 7 %. Age showed a positive correlation with symptom severity (0.186, p<0.001), whereas medical history (hypertension: 20.9 %, diabetes: 16.7 %) showed a negative correlation (-0.265, p<0.001). 44.9 % had no relevant medical history.

Conclusions: The high prevalence of LUTS in Tabasco highlights the need for educational campaigns and free screening to reduce underdiagnosis and associated mortality. The association with age and comorbidities reinforces the importance of addressing these factors in public health strategies.

Keywords:
Lower Urinary Tract Symptoms, Prevalence, Prostatic Hyperplasia, Prostatic Neoplasms

***Corresponding author:**
Sergio Quiroz- Gómez. Dirección: División Académica de Ciencias de la Salud, Universidad Juárez Autónoma de Tabasco. ZIP 86150 Villahermosa, Tabasco, México Teléfono: (993) 358150 Correo electrónico: sergio.quiroz@ujat.mx

Citation: Pérez-Chan M., Hernández-Hernández M. I., de la Cruz-Solís S. P., Quiroz-Gómez S., Celorio-Méndez K. S., Guzmán-Priego C. G. *Frequency and severity of lower urinary tract symptomatology related to prostate disease in a mexican population. Rev Mex Urol. 2024;85(3)* 1-11

[1.] Universidad Juárez Autónoma de Tabasco, Tabasco, México.

Accepted: July, 25, 2025
Received: May, 8, 2025

Resumen

Objetivo: Evaluar la frecuencia y severidad de la sintomatología prostática en hombres de 40 a 70 años en Tabasco, México, donde la falta de datos locales limita estrategias de prevención y detección temprana de patologías como cáncer de próstata e hiperplasia prostática benigna (HPB).

Métodos: Estudio observacional, descriptivo y transversal (febrero-agosto 2024) en 383 hombres seleccionados aleatoriamente. Se aplicó la Escala Internacional de Síntomas Prostáticos (IPSS) y un cuestionario sociodemográfico. Los datos se analizaron con SPSS v25 mediante estadística descriptiva y correlación de Spearman.

Resultados: El 79.1 % de los participantes reportó al menos un síntoma del tracto urinario inferior (STUI) en el último mes, siendo nicturia (26.4 %) y frecuencia urinaria (46 %) los más prevalentes. El 54 % presentó sintomatología leve, 31.2 % moderada y 7 % severa. La edad mostró correlación positiva con la severidad de síntomas (0.186, $p<0.001$), mientras que los antecedentes patológicos (hipertensión: 20.9 %, diabetes: 16.7 %) correlacionaron negativamente (−0.265, $p<0.001$). El 44.9 % no tenía antecedentes médicos relevantes.

Conclusión: La alta prevalencia de STUI en Tabasco resalta la necesidad de campañas educativas y tamizajes gratuitos para reducir el subdiagnóstico y la mortalidad asociada. La correlación con edad y comorbilidades refuerza la importancia de abordar estos factores en estrategias de salud pública.

Palabras clave:
Síntomas del Tracto Urinario Inferior, Prevalencia, Hiperplasia Prostática, Neoplasias Prostáticas

Introduction

Prostatic symptoms represent a frequent indication for consultation in both Family Medicine and Urology.[1–5] Prostate cancer and benign prostatic hyperplasia (BPH) have been shown to generate lower urinary tract symptoms (LUTS), including frequency, urgency, nocturia and weak stream, which have been demonstrated to have a detrimental effect on sleep, productivity and psychosocial well-being.[6–8] On a global scale, prostate cancer is the second most prevalent neoplasm and the fifth most common cause of oncologic death in men; in 2022, 1.4 million cases and more than 400,000 deaths were estimated.[9] BPH, in turn, has a prevalence of approximately 50 % among males aged 60 years and over 90 % among those aged 85 and above.[10,11] In conjunction with cancer, it accounts for healthcare expenditures in excess of US$16 billion per annum in upper-middle-income countries.[11–13]

In Mexico, the mortality rate from prostate cancer increased to 9.3 per 100,000 inhabitants, with the most significant increase observed in the southeast region. Notwithstanding, Tabasco

is in need of population-based studies on the frequency and severity of LUTS,[14–16] which are necessary for effective planning of screening campaigns with prostate-specific antigen (PSA) and digital rectal examination, and for effective allocation of resources to first-level urological care. Concurrently, cultural barriers, encompassing fear, stigma and ignorance, impede male participation in screening programmes, thereby perpetuating underdiagnosis and delays in therapeutic intervention.[17–20]

The possession of robust local data will facilitate the estimation of the hidden demand for services, the sustainment of health education policies, and the establishment of baselines for the evaluation of future interventions.

The objective of the present study is to ascertain the frequency and severity of prostatic symptomatology in males aged ≥40 years residing in Tabasco, Mexico. The findings will provide evidence to strengthen clinical and public health strategies to improve male urological health.

Methods

Study design and population

Observational, descriptive and cross-sectional study conducted in February-August 2024, including the population group of men aged 40 to 70 years living in the municipalities of Tabasco state, taking as reference that this population sector consisted of 357,414 habitants according to data from National Institute of Statistics and Geography (INEGI) in the year 2020.

Simple random sampling was used to obtain a representative sample of this population. Participants were recruited outside of a clinical setting, through community outreach activities in different locations in the state including men who decided to participate in the project and gave their consent for the use of the information provided, meeting the criterion of being between 40 and 70 of age according to life expectancy. The sample size was calculated using the finite population formula, with a 95 % confidence level and 5 % (0.05) margin of error, resulting in a total of 383 men.

Guiding instrument

To measure the presence of prostatic symptomatology, the International Prostate Symptom Scale (IPSS) was used with a Cronbach's alpha of 0.71 designed by the American Urological Association (AUA) and adapted in the Official Mexican Standard: NOM-048-SSA2-2017 For the prevention, detection, diagnosis, treatment, epidemiological surveillance and health promotion of benign prostatic hyperplasia (prostate enlargement) and prostate cancer (malignant tumor of the prostate), published in the Official Journal of the Federation.[6, 31] The instrument is based on the application of 8 items, 7 of them aimed at defining the presence of irritative or obstructive urinary symptoms, with 6 possible answers, which can receive a score from 0 to 5 points, depending on the intensity of the LUTS manifested by the patient. The last item is responsible for measuring the quality of life according to the urinary symptoms presented by the person.

Once the responses to the items ranging from 0 to 35 points were added up, severity was classified as: normal=0, mild=1-7, moderate=8-19 and severe=20-35. The questionnaire was applied in two parts. The first part was

oriented to the collection of sociodemographic details and pathological antecedents that could be related to the presence of the symptomatology and the second to the resolution of the IPSS questionnaire.

Data collection procedure and statistical analysis

Data collection was carried out through surveys of research participants, designed with Microsoft Forms software. In this way, the researchers accessed and managed the data in a systematized way, also allowing several participants to respond simultaneously. It was estimated that participants would complete the form according to the instructions, however, most of the surveys were conducted in person to assist those who needed help in understanding a question and to comply with the sample.

The data were organized and analyzed in a database created with IBM Statistical Package for the Social Sciences (SPSS), version 25. The analysis was carried out using descriptive statistics: frequencies and percentages, and the Kolmogorov-Smirnov test was applied to evaluate the normality of the data distribution.

Ethical considerations

Prior to the resolution of the surveys, informed consent was requested from the participants following all the guidelines of the Declaration of Helsinki, the guidelines of good clinical practice and under the provisions of the Mexican Official Standard NOM-012-SSA3-2012. In addition, the approval of the Ethics Committee of the Juárez Autonomous University of Tabasco, Academic Division of Health Sciences (registration number JI-LCT-171), was obtained for the execution of the research.

Results

A total of 383 men aged 40-70 years, all of whom had resided in various municipalities in Tabasco, were surveyed. Table 1 presents the sociodemographic data of the participants. The mean age was 52 years (range 40-70, SD=8.38). In terms of age groups, the largest proportion of participants, 24.5 % (n=94) were between 40 and 45 years old. This was followed by the 46-50 age group with accounted for 20.1 % (n=77), while the 66-77 age group had the smallest percentage, at 10.7 % (n=41).

Table 1. Socio-demographic details of participants

Socio-demographic variables		*F*	%
Age	40-45	94	24.5
	46-50	77	20.1
	51-55	72	18.8
	56-60	60	15.7
	61-65	39	10.2
	66-70	41	10.7
	Mean ± SD	52 ± 8.38	
Pathologic antecedents	Diabetes	64	16.7
	Arterial hypertension	80	20.9
	Obesity	53	13.8
	Renal disease	14	3.7
	None	172	44.9

With regard to pathological history, 44.9 % (*n*=172) of the men interviewed, that is, less than half, had no pathological antecedents. A total of 20.9 % (*n*=80) reported hypertension, followed by diabetes mellitus at 16.7 % (*n*=64). Additionally, 13.8 % (*n*=53) had obesity and, finally, 3.7 % (*n*=14) reported kidney disease.

With reference to the findings of the prostatic symptomatology variable, it was found that 79.1 % (*n*=303) of the participants presented at least one lower urinary tract symptom in the last month. Additionally, nocturia and urinary frequency were identified as the most common symptoms. Nicturia refers to the number of times a person wakes up to urinate during the night; 26.4 % (*n*=80) of participants reported waking up twice during the night, while 24.5 % (*n*=94) reported waking up only once. Regarding urinary frequency, which indicates the need to urinate again within two hours after having just urinated, it was evident that 46 % (*n*=176) of the individuals, less than half, never experienced the need to urinate again within two hours. Meanwhile, 20.6 % (*n*=79) and 18 % (*n*=69) informed experiencing this need less than half of the time and once every five occasions, respectively, as shown in Table 2.

Table 2. Variables frequency in less tan two hours, nocturia and prostatic symptomatology

Characteristic	*f*	%
Prostatic symptomatology		
Nicturia	303	79.1
Frequency in less than two hours	207	54
Intermittency	179	46.7
Incomplete Emptying	161	42
Urgency	151	39.4
Straining	147	38.4
Weak stream	133	34.7
Frequency: During the last month, how often did you have to urinate again within two hours after you had finished urinating?		
Not at all	176	46.0
Once every five	69	18.0
Less than half the time	79	20.6
Half the time	29	7.6
More than half of the time	9	2.3
Almost always	21	5.5
Nocturia: During the last month, how many times did you usually get up to urinate from the time you went to bed at night until you got up in the morning?		
None	80	20.9
1 time	94	24.5
2 times	101	26.4
3 times	65	17.0
4 times	22	5.7
5 or more times	21	5.5

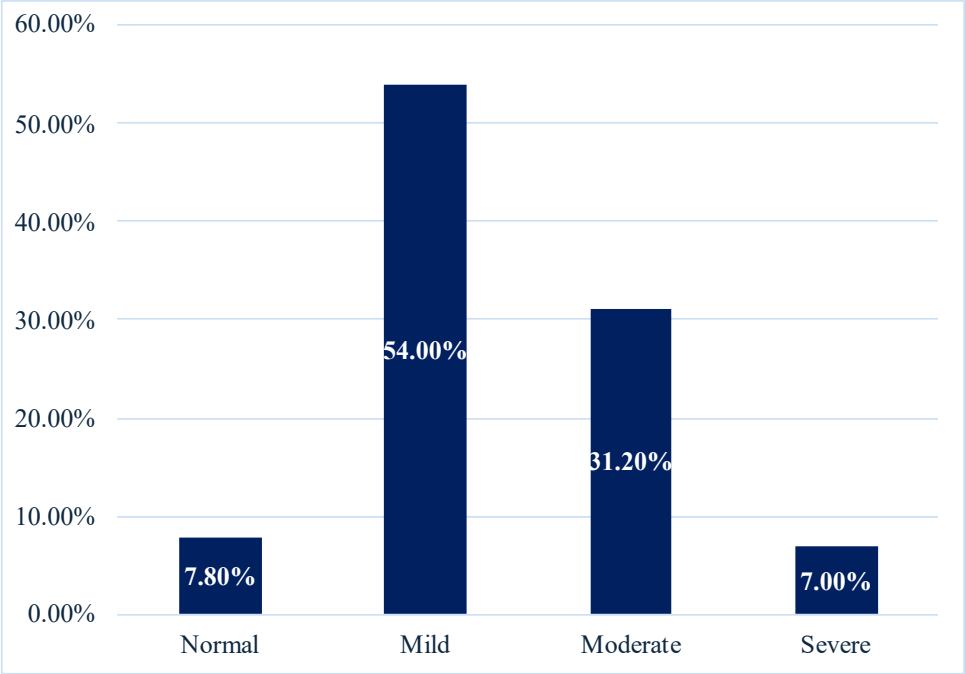
In the Table 3, presents the quality of life of the male participants based on the urinary symptoms they reported. In this context, 29.8 % (*n*=114) expressed satisfaction with their current situation. Meanwhile, 21.1 % (*n*=81) reported feeling indifferent, and 18 % (*n*=69) indicated dissatisfaction, stating that their quality of life had been adversely affected.

Table 3. Quality of life of participants according to urinary symptoms

	f	%
Delighted	40	10.4
Pleased	114	29.8
Rather satisfied	79	20.6
Indifferent	81	21.1
Rather dissatisfied	26	6.8
Unhappy	35	9.1
Terrible	8	2.1
Total	383	100.0

Based on the scores derived from the sum of the responses to the survey items, the severity of prostatic symptoms was assessed. It was observed that 54.0 % (*n*=207), or more than half of the participants, presented with mild prostatic symptoms. On the other hand, 31.2 % (*n*=119) exhibited moderate symptoms. Additionally, 7.8 % (*n*=30) reported no urinary symptom, and 7.0 % (*n*=27) displayed severe symptoms, as illustrated in Figure 1.

Figure 1. Severity of symptomatology



Discussion

This study provides a community estimate of lower urinary tract symptoms (LUTS) in males ≥ 40 years. The overall frequency of 71 % and the predominance of mild-moderate cases (IPSS < 20 in 85 %) are in the high range reported in Latin America (65-78 %). Hospital studies report proportions > 80 %, but with referral bias when recruiting symptomatic patients. Our stratified community sampling reduces this bias and provides a baseline that can be generalized to the male population of Tabasco.[21–25]

Among the most commonly reported symptoms, nicturia was prominent, reflecting the significant impact these urinary disorders can have on night-time rest, daily activities, and overall quality of life. The high burden of mild-moderate LUTS implies an opportunity for early intervention before they progress to urinary retention or obstructive renal failure. Systematic implementation of IPSS in primary care, recommended by NOM-048-SSA2-2017, could favor timely detection and stratified referral. At the population level, the observed magnitude justifies health education campaigns aimed at eliminating stigmas of digital rectal examination and measurement of prostate-specific antigen (PSA).[26–30]

The primary strengths of the study are the community design, which incorporates both urban and rural areas, the sample size, which has been calculated to ensure an absolute error of 5 %, and the utilisation of a validated instrument (IPSS). The limitations of the study include the cross-sectional design, which precludes the establishment of causality; the absence of clinical markers (PSA, ultrasound) to discriminate etiology (BPH vs. cancer); and the self-assessment of symptoms, which is susceptible to under-reporting. It is recommended that future longitudinal cohorts undertake a quantitative analysis of the incidence, progression and cost-effectiveness of community screening programmes.

Conclusion

The high frequency of LUTS in Tabasco demonstrates the need to integrate prostate screening and education strategies at the primary care level, with special emphasis on men ≥ 40 years of age. These findings constitute indispensable local evidence to guide urological health policies and evaluate future interventions in southeastern Mexico.

CRediT Taxonomy

1. **Manuel Pérez-Chan:** Conceptualization, Project administration,Writing: review and editing
2. **Monserrat Iveth Hernández-Hernández:** Conceptualization, Methodology, Formal analysis, Investigation, Data curation, Writing: original draft, Writing: review and edition, Visualization.
3. **Sandra Paola de la Cruz-Solís:** Conceptualization, Methodology, Formal analysis, Investigation, Data curation, Writing: original draft, Writing: review and edition, Visualization.
4. **Sergio Quiroz-Gómez:** Conceptualization, Project administration, Formal analysis, Data curation
5. **Karla del Socorro Celorio-Méndez:** Writing: review and editing
6. **Crystell Guadalupe Guzmán-Priego:** Supervision, Validation

Conflict of interest

None of the authors have any conflicts of interest or financial ties to disclose.

Source of funding

This research did not receive any specific grant from funding agencies in the public, commercial or not-for-profit sectors.

Ethical approval

Approval from the Research Ethics Committee of Universidad Juárez Autónoma de Tabasco, División Académica de Ciencias de la Salud (registration number JI-LCT-171; Date of issue: May 27, 2024. All procedures performed in this study involving human participants were in accordance with the 1964 Helsinki declaration and its later amendments on comparable ethical standards.

References

1. **Chiang HM, Susaeta R, Finsterbusch C.** Síntomas urinarios bajos, prostatismo, hiperplasia prostática, uropatía obstructiva baja, ¿todo una misma cosa? *Revista Médica Clínica Las Condes*. 2014;25(1): 149–157. https://doi.org/10.1016/S0716-8640(14)70021-5.
2. **Bergengren O, Pekala KR, Matsoukas K, Fainberg J, Mungovan SF, Bratt O, et al.** 2022 Update on Prostate Cancer Epidemiology and Risk Factors-A Systematic Review. *European Urology*. 2023;84(2): 191–206. https://doi.org/10.1016/j.eururo.2023.04.021.
3. **Luque Zurita D, Pérez Valverde Á, Universidad Nacional de San Agustín, Arequipa – Perú, Lizárraga Vargas L, Ministerio Público, Arequipa – Perú, Campos Beltrán S, et al.** EPIDEMIOLOGIA DE LA HIPERPLASIA PROSTATICA BENIGNA (BPH). *Revista de Postgrado SCIENTIARVM*. 2015;7(1): 27–34. https://doi.org/10.26696/sci.epg.0127.
4. **Ng M, Leslie SW, Baradhi KM.** Benign Prostatic Hyperplasia. In: *StatPearls*. StatPearls Publishing; 2025. http://www.ncbi.nlm.nih.gov/books/NBK558920/
5. **Wang YB, Yang L, Deng YQ, Yan SY, Luo LS, Chen P, et al.** Causal relationship between obesity, lifestyle factors and risk of benign prostatic hyperplasia: a univariable and multivariable Mendelian randomization study. *Journal of Translational Medicine*. 2022;20(1): 495. https://doi.org/10.1186/s12967-022-03722-y.
6. **Robles-Rodríguez A, Garibay-Huarte TR, Acosta Arreguín E, Morales López S.** La próstata: generalidades y patologías más frecuentes. Revista de la Facultad de Medicina. 2019;62(4):41–54.
7. **Franco JV, Jung JH, Imamura M, Borofsky M, Omar MI, Escobar Liquitay CM, et al.** Minimally invasive treatments for lower urinary tract symptoms in men with benign prostatic hyperplasia: a network meta-analysis. *The Cochrane Database of Systematic Reviews*. 2021;7(7): CD013656. https://doi.org/10.1002/14651858.CD013656.pub2.
8. **Merriel SWD, Pocock L, Gilbert E, Creavin S, Walter FM, Spencer A, et al.** Systematic review and meta-analysis of the diagnostic accuracy of prostate-specific antigen (PSA) for the detection of prostate cancer in symptomatic patients. *BMC Medicine*. 2022;20(1): 54. https://doi.org/10.1186/s12916-021-02230-y.
9. **Awedew AF, Han H, Abbasi B, Abbasi-Kangevari M, Ahmed MB, Almidani O, et al.** The global, regional, and national burden of benign prostatic hyperplasia in 204 countries and territories from 2000 to 2019: a systematic analysis for the Global Burden of Disease Study 2019. *The Lancet Healthy Longevity*. 2022;3(11): e754–e776. https://doi.org/10.1016/S2666-7568(22)00213-6.
10. **Marzo Castillejo M, Peña López F, Alonso Coello P, Mascort Roca JJ.** Actualización en prevención y tratamiento del cáncer de próstata.

Atencion Primaria. 2002;30(1): 57–63. https://doi.org/10.1016/S0212-6567(02)78963-4.

11. **Guzman-Esquivel J, Solórzano HPG, Enciso ID.** Epidemiología del cáncer de próstata: análisis comparativo de los principales cánceres urológicos. *Revista Mexicana de Urología*. 2025;85(1): 1–10. https://doi.org/10.48193/cpthsn35.
12. **Zhang AY, Xu X.** Prevalence, Burden, and Treatment of Lower Urinary Tract Symptoms in Men Aged 50 and Older: A Systematic Review of the Literature. *SAGE open nursing*. 2018;4: 2377960818811773. https://doi.org/10.1177/2377960818811773.
13. **Welliver C, Feinstein L, Ward JB, Kirkali Z, Martinez-Miller E, Matlaga BR, et al.** Evolution of healthcare costs for lower urinary tract symptoms associated with benign prostatic hyperplasia. *International Urology and Nephrology*. 2022;54(11): 2797–2803. https://doi.org/10.1007/s11255-022-03296-0.
14. **Oraá-Tabernero N, Cruzado JA.** Ansiedad y depresión en hombres con cáncer de próstata en función del tipo de tratamiento y su relación con la calidad de vida y la información recibida. *Psicooncología*. 2019;16(2): 329–344. https://doi.org/10.5209/psic.65594.
15. **Sánchez KS, Sánchez MC, Acuña VR, Chan MP.** Prevalencia de factores de riesgo y sintomatología prostática en indígenas de Tabasco. *Revista Cuidarte*. 2021;12(2). https://doi.org/10.15649/cuidarte.1264.
16. **Reyes-Vallejo AGML.** Evolución en el tratamiento médico de los síntomas del tracto urinario bajo en hombres. *Revista Mexicana de Urología*. 2015;75(1). https://doi.org/10.48193/revistamexicanadeurologa.v75i1.236.
17. **Torres-Sánchez LE, Espinoza-Giacinto R, Rojas-Martínez R, Escamilla-Nuñez C, Vázquez-Salas RA, Campuzano JC, et al.** Prostate cancer mortality according to marginalization status in Mexican states from 1980 to 2013. *Salud Pública de México*. 2016;58(2): 179–186.
18. **Martin RM, Turner EL, Young GJ, Metcalfe C, Walsh EI, Lane JA, et al.** Prostate-Specific Antigen Screening and 15-Year Prostate Cancer Mortality: A Secondary Analysis of the CAP Randomized Clinical Trial. *JAMA*. 2024;331(17): 1460–1470. https://doi.org/10.1001/jama.2024.4011.
19. **Ángeles-Garay U, Sandoval-Sánchez JJ, Sánchez-Martínez LC, Acosta-Cazares B, Ruíz-Betancourt BS, Ángeles-Garay U, et al.** Conducta sexual y otros factores de riesgo para cáncer de próstata. *Revista mexicana de urología*. 2019;79(5).
20. **Larkin D, Birtle AJ, Bradley L, Dey P, Martin CR, Pilkington M, et al.** A systematic review of disease related stigmatization in patients living with prostate cancer. *PLOS ONE*. 2022;17(2): e0261557. https://doi.org/10.1371/journal.pone.0261557.
21. **Williams D, Ryce A.** *Minimally-Invasive Treatments for Lower Urinary Tract Symptoms in People with Benign Prostatic Hyperplasia: A Review of Clinical Effectiveness*. Ottawa (ON): Canadian Agency for Drugs and Technologies in Health; 2019.
22. **Silva V, Grande AJ, Peccin MS.** Physical activity for lower urinary tract symptoms secondary to benign prostatic obstruction. *The Cochrane Database of Systematic Reviews*. 2019;4(4): CD012044. https://doi.org/10.1002/14651858.CD012044.pub2.
23. **Silva-Araujo HD, Barreto-Gutiérrez M, Flores-Fernández OC, Rodríguez-Fernández MV.** Rol de la laparoscopía en el tratamiento de la hiperplasia prostática benigna: experiencia LATAM. *Revista Mexicana de Urología*.

2022;82(3): 1–8. https://doi.org/10.48193/revistamexicanadeurologa.v82i3.876.

24. **Chamorro Jimenez L, Lanazca DelaCruz C, Figueroa Gamarra L.** Percepción del tamizaje de cáncer de próstata en Huánuco, Perú. 2018. *Revista Peruana de investigación en salud*. 2019;3(4): 158–166.
25. **Molina-Barrera ÁM, Ramos-Ulloa JG, Becerra-Méndez LM, García-Valencia J, Varela-Ramírez R, Silva-Chacón D.** Predictors of biochemical recurrence after radical prostatectomy at an oncology reference center in Colombia. *Archivos Espanoles De Urologia*. 2021;74(7): 656–663.
26. **Chandrasekar T, Herrera-Caceres JO, Klotz L.** Active surveillance in intermediate risk prostate cancer. *Archivos Espanoles De Urologia*. 2019;72(2): 157–166.
27. **Irwin DE, Milsom I, Kopp Z, Abrams P, Artibani W, Herschorn S.** Prevalence, severity, and symptom bother of lower urinary tract symptoms among men in the EPIC study: impact of overactive bladder. *European Urology*. 2009;56(1): 14–20. https://doi.org/10.1016/j.eururo.2009.02.026.
28. **Secretaria de Salud.** *NORMA Oficial Mexicana NOM-048-SSA2-2017, Para la prevención, detección, diagnóstico, tratamiento, vigilancia epidemiológica y promoción de la salud sobre el crecimiento prostático benigno (hiperplasia de la próstata) y cáncer de próstata (tumor maligno de la próstata)*. 2017.
29. **Fu X, Wang Y, Lu Y, Liu J, Li H.** Association between metabolic syndrome and benign prostatic hyperplasia: The underlying molecular connection. *Life Sciences*. 2024;358: 123192. https://doi.org/10.1016/j.lfs.2024.123192.
30. **Leslie SW, Sajjad H, Singh S.** Nocturia. In: *StatPearls*. Treasure Island (FL): StatPearls Publishing; 2024.