Original Article

A survey on prostate symptoms and quality of life in men with comorbidities at the Public Hospital SS. Antonio e Biagio e Cesare Arrigo of Alessandria

Un'indagine sui sintomi prostatici e qualità di vita nella popolazione maschile con patologie concomitanti afferenti all'Azienda Ospedaliera Universitaria di Alessandria

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Key words: prostate, urinary tract, LUTS.

ABSTRACT

Background: Benign Prostatic Hyperplasia (BPH) is a pathological condition characterized by an increase in the size of the prostate gland which can lead to Lower Urinary Tract Symptoms (LUTS) that affect the quality of life.
Methods: the International Prostatic Symptoms Score (IPSS) questionnaire was used to assess the symptoms of benign prostatic hyperplasia in male individuals with comorbidities, patients over 30 years of age who had not been diagnosed with urological or prostatic disease.
Results: a total of 102 IPSS questionnaires were analyzed. According to age, 62.1% of patients reported mild symptoms, 34% had moderate symptoms, and 3.9% had severe symptoms, consistent with increasing age. Among patients who completed the questionnaire, a higher percentage (67%) had voiding dysfunction during the filling phase.
Conclusions: in agreement with the literature, the IPSS questionnaire can be used as a screening model for the early detection and management of LUTS. As demonstrated by our results, symptoms worsen with age, therefore early detection may reduce the risk of complications and anticipate a visit to a specialist.

Background: l'iperplasia prostatica benigna è una condizione patologica caratterizzata da un aumento dimensionale della prostata che comporta sintomi delle basse vie urinarie (LUTS, *Lower Urinary Tract Syntoms*) che interferiscono sulla qualità di vita dei soggetti di sesso maschile.
Materiali e Metodi: è stato utilizzato il questionario *International Prostatic Symptoms Score* (IPSS), su pazienti con un'età maggiore di 30 anni che non abbiano avuto una patologia urologica o prostatica diagnosticata per indagare i sintomi da iperplasia prostatica benigna in pazienti con patologie concomitanti.
Risultati: sono stati analizzati 102 questionari IPSS. Il 62.1% dei pazienti presentava una sintomatologia lieve, il 34% presentava una sintomatologia moderata e il 3.9% presentava una sintomatologia grave, in concordanza con un aumento dell'età. Tra i pazienti a cui è stato somministrato il questionario è risultata una percentuale maggiore (67%) di disturbi minzionali della fase di riempimento.
Conclusioni: in accordo con la letteratura, il questionario IPSS può essere un modello di *screening* per identificare e trattare precocemente i sintomi delle basse vie urinarie. Come dimostrato dai nostri risultati i sintomi peggiorano con l'aumentare dell'età, quindi individuarli in una fase precoce può ridurre il rischio di complicanze e anticipare una visita con lo specialista di riferimento.

Introduction

The prostate, which may be found near the base of the bladder and encircles the proximal end of the urethra, is the biggest male accessory sex gland in the human reproductive system.[1] Benign Prostatic Hyperplasia (BPH) with Lower Urinary Tract Symptoms (LUTS) is the most commonly diagnosed urological condition among men aged 45 to 74 years, with an overall prevalence ranging from 8% to 80% between the fourth and the ninth decades of life.[2] Urinary symptoms associated with an enlarged prostate have been recognized as the fourth most common complaint among men over the age of 50.[3] In Italy, prostate cancer is currently the most frequent neoplasm among men, accounting for more than 20% of all tumors diagnosed after the age of 50.[4]

BPH is associated with a range of LUTS, which include a variety of urinary problems such as storage disorders, voiding, and post-voiding symptoms that indicate lower urinary tract dysfunction.[5] LUTS can be divided into filling (irritative), voiding (obstructive), and post-voiding symptoms. Symptoms associated

with the filling phase include urgency, nocturia, and increased frequency. In contrast, symptoms related to the voiding phase include incomplete emptying of the bladder, difficulty initiating urination and weakness or interruption of flow during urination.[6] Prostate disease can occur in any age group, but the prevalence increases progressively with age.[7] Additionally, other associated factors are unhealthy lifestyle (such as physical inactivity, smoking habits, and alcohol consumption),[8,9] obesity,[8] and the presence of comorbidities (non-communicable diseases such as diabetes mellitus, hypertension and hyperlipidemia).[10]

Pathologies that cause prostatic symptoms can significantly reduce a patient's Quality of Life (QoL), by interfering with daily activities, altering sleep patterns, reducing social and emotional well-being and work productivity.[11]

However, the European Association of Urology (EAU) guidelines recommend using a validated symptom score questionnaire to qualify a patient's LUTS and to identify which type of symptoms are predominant.[12] One of the most widely used symptom questionnaires is the International Prostatic Symptoms Score (IPSS)[13] which is designed to quantify patient-reported symptoms, the nature and severity of which may lead to the suspicion of prostate disease. It includes seven micturition-related symptoms and an eighth QoL indicator assessed separately. The IPSS was designed to be quickly and easily self-administered by the patient, and is used to classify patients into three symptom groups.

Identifying and quantifying the severity of voiding disorders, which patients sometimes underestimate, can help to anticipate the need for urological visits and management, reducing the risk of disease progression and poor treatment response. Furthermore, the urological examination, when combined with the specific serum Prostate-Specific Antigen (PSA) dosage, can raise suspicion of prostate cancer, which if diagnosed early, can lead to a complete recovery of the patient.

The aim of the study was to investigate the symptoms of benign prostatic hyperplasia in patients with concurrent diseases at the SS Antonio e Biagio e C. Arrigo Hospital (AOAL), using the IPSS questionnaire.

Materials and Methods

Study Design

This is an observational, cross-sectional, monocentric study aimed at improving clinical practice to enhance clinical practice within healthcare and strictly adheres to the non-profit trial guidelines outlined in D.M. 12-17-2004, with a complete absence of commercial or industrial interests. (No-Profit trial).

Patients

Patients aged >30 years were eligible for inclusion in this study. This age criterion was established based on findings in the existing literature, which indicates that BPH with LUTS predominantly affects men between the ages of 45 and 74. This condition occurring in individuals under 30 years of age is exceedingly rare. Additional contributing factors to the development of BPH include lifestyle choices, obesity, and the presence of concurrent medical conditions.[2] Furthermore, subjects with at least one medically diagnosed condition other than a urological issue were included from the many AOAL outpatient activities, such as the Gardella Outpatient Clinic, the Onco-Hematological Day Hospital, the Diabetology Outpatient Clinic, the Ghilini Outpatient Clinic and the Santa Caterina Outpatient clinic. This comprehensive approach aimed to include a diverse patient population for a more robust analysis.

Project communication

The Alessandria Hospital hosted a specialized event as part of "*Ospedale Incontra - Filo Diretto*," dedicated to raising awareness about prostate cancer, in line with the H-Open Weekend initiative. Esteemed urologists Armando Serao and Andrea Di Stasio shared valuable insights with both the participants and the broader audience, focusing on the crucial subject of preventing prostate cancer. This informative session was broadcast live on the hospital's official Facebook and YouTube platforms, making it accessible to a broader audience. During the event, the urologists also introduced the Prostate Cancer Unit, as for the specialized care available. Furthermore, they actively responded to inquiries posed through Instagram Stories, addressing the question, "Is a high PSA level indicative of prostate cancer?".

The event held significant importance, being part of the initiatives promoted by the ONDA Foundation, the National Observatory on Women's and Gender Health. In accordance with their directives, urology departments within hospitals awarded the "Bollino Azzurro" for the biennium 2022-2023 were encouraged to organize awareness campaigns and provide specialized information services to the male population. Due to the ongoing COVID-19 emergency, we were unable to offer free examinations due to concerns about logistics and safety. In response to this situation, the Hospital's Communication Office took the initiative to conduct this event, which included the administration of a questionnaire addressing prostate-related symptoms. This aspect was emphasized during the live broadcast.

Instruments

The International Prostate Symptoms Score (IPSS) questionnaire[13] was used, to assess the severity of symptoms. The IPSS consists of 7 questions on urinary symptoms, with a score from 0 to 5; the total score therefore ranges from 0 to 35 (asymptomatic to very symptomatic).

Symptoms are classified as:
- mild (symptom score ≤7);
- moderate (symptom score range 8-19);
- mevere (symptom score range 20-35).

Question 8 refers to the patient's perceived quality of life. The International Scientific Committee (ISC), sponsored by the World Health Organization and the International Union Against Cancer (IUAC), recommends the use of a single question to assess quality of life. The answers to this question range from "good" to "very bad" or 0 to 6, respectively.

Data collection

Following the occasion of H-Open Weekend dedicated to prostate cancer, a webinar episode featuring healthcare professionals was streamed with the aim of discussing prostate cancer prevention. During this event, a questionnaire concerning prostate symptoms was introduced, which was subsequently made available to patients in the weeks that followed. The principal investigator provided a detailed explanation of the protocol to the patients and addressed any inquiries they had. Patients who met the inclusion criteria, specifi-

cally those with concurrent medical conditions unrelated to urology, and who visited the hospital for other symptoms or appointments, were encouraged to complete the questionnaire and return it. After obtaining their informed consent, the questionnaires were reproduced in hardcopy, and the collected data was then entered into the online computerized platform known as "Electronic Data Capture" (REDCap), which is routinely used at our institution (AOAL). All information stored within the database specifically established for this study is anonymized and cannot be linked to individual patients. The researcher at the center assigns a unique identification code to each participant using a coding procedure. This code enables the study's staff to identify the patient using a separate list, which will not be utilized during the subsequent statistical analysis.

Ethical approval

The study was approved by the Intercompany Ethics Committee and data collection started only after all participants had signed the written informed consent form, whilst, all data was anonymized before analysis.

Results

A total of 103 patients were enrolled in the study, and 102 questionnaires were included in the analysis. Only one questionnaire was excluded due to incomplete responses. All patients, at the time of questionnaire completion, reported having at least one comorbidity. The mean age of the patients who successfully completed the questionnaire was 61.9 years as detailed in Table 1, which also presents the demographic data of the study participants.

IPSS Score

Based on the IPSS score (Table 2), 61.8% of patients had mild symptoms, 34.3% had moderate symptoms, and 3.9% had severe symptoms.

The mean age of patients who presented mild symptoms was 60.2 years, those who presented moderate symptoms was 64.2 years, while the mean age of patients who had severe symptoms was 69.3, as presented in Table 2.

Frequency of symptoms

Table 3 shows the symptoms with their respective frequencies. Symptoms of nocturia, frequency, and weak urinary stream were the most commonly reported. Thus, reporting a higher percentage of voiding disturbances during the filling phase, as shown in Table 4.

Five patients (4.9%) reported no symptoms for each question of the questionnaire, with an average age of 67.2 years.

Eighty-one percent of patients reported a quality of life ranging from "good" to "fairly satisfied" as shown in Table 5. Only 2% of patients reported a "terrible" quality of life, indicating severe symptom experiences.

Discussion

The aim of this study was to investigate prostate symptoms and quality of life in patients with extraneous urological comorbidities. We used the IPSS questionnaire to quantify patient-reported symptoms.

The data obtained from this study reveal that 62.1% of patients presented mild symptoms, while only 3.9% of enrolled patients presented severe symptoms. This suggests that more than half of the

Table 1. Demographic data of the patients who joined the study.

	Participants=102
Mean age	61,9
≤50 years, n	8
>50 years, n	94
Caucasian race, n	102

Table 2. IPSS distribution and mean age for every score range.

IPSS score	N partecipants (%)	Mean age
Mild (0-7)	63 (61,8)	60,2
Moderate (8-19)	35 (34,3)	64,2
Severe (20-35)	4 (3,9)	69,3

IPSS, International Prostatic Symptoms Score.

Table 3. Frequency of every symptom.

	Freq. absolute	Freq. %
Incomplete emptying	42	41
Frequency	80	78
Intermittency	40	39
Urgency	43	42
Weak stream	58	57
Straining	23	23
Nocturia	84	82

Table 4. Symptom frequency divided by type of disturbance.

Voiding symptoms	Freq. %	Storage symptoms	Freq. %
Incomplete emptying	41	Frequency	78
Intermittency	39	Urgency	42
Weak stream	57	Nocturia	82
Straining	23		
Mean	40	Mean	67

Table 5. Index of participants' perceived quality of life.

Quality of life	Freq. absolute	Freq. %
Good	34	33
Pleased	23	23
Mostly satisfied	26	25
So So	12	12
Mostly dissatisfied	5	5
Unhappy	0	0
Terrible	2	2

patients in our sample experienced symptoms that had not been brought to the attention of their clinicians.

Certain prostate conditions can have serious consequences if not addressed promptly and adequately from a medical point of view.[14] The consequences may include life-threatening complications such as obstructive nephropathy, sepsis and acute urinary retention.[15]

Notably, some of these conditions, such as prostate and bladder cancer are most treatable in their early stages, when LUTS alone may serve as an indicator of a potential diagnosis.[15] Men suffering from prostate disease seek medical attention at various stages of symptom progression.[16]

It is well documented that several individual, social and economic factors, interacting with one other, influence and sometimes delay the decision to seek medical assistance. These factors include cultural beliefs and practices, the perception of symptoms as a normal age-related issues, literacy levels,[17] discomfort in discussing the topic with others, including healthcare professionals,[18] limited financial resources and difficulties accessing medical care, and inadequate health information.[19]

The use of a simple and short, self-administered questionnaire would appear to be effective in early screening for detecting patients with symptoms.

The presence of one or more symptoms may indicate the occurrence of impaired bladder compliance, reduced intra-bladder resistance, increased bladder flow, or a combination of these issues. Prostate diseases can affect individuals of any age group, but their prevalence progressively increases with age,[7] as evidenced by the results of our study.

Patients commonly reported experiencing LUTS such as nocturia and increased frequency, aligning with the findings of a previous study.[20]

Our study has several limitations, primarily stemming from the relatively small sample size. This limitation was a result of patient enrollment coinciding with an event sponsored by the Hospital of Alessandria. A larger sample size would have provided more robust and statistically significant results. It's worth noting that the presence of concurrent medical conditions, as highlighted in literature,[10] can be a relevant factor associated with BPH. Our failure to record these comorbidities hindered our ability to conduct further correlation analyses.

Consequently, the implementation of an early symptom assessment questionnaire during the screening phase could offer benefits to both patients and healthcare providers. Such a tool would enable patients to recognize asymptomatic symptoms and prompt clinicians to identify cases that might otherwise present themselves at the hospital during advanced stages, compelling the need for immediate medical attention.

Moreover, the findings of our study have the potential to guide health professionals in developing health education initiatives aimed at preventing this type of disease. Patients can be informed in a timely manner about their susceptibility and encouraged to undergo regular checkups and screening examinations.

Conclusions

Micturition symptoms have been recognized as the fourth most common complaint among men over the age of 50. Therefore, the use of a simple and straightforward questionnaire can prove effective as a screening tool for male LUTS. This approach enables early diagnosis and treatment of urological diseases.

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