



## ORIGINAL ARTICLE

# The impact of transrectal prostate biopsy on erectile function<sup>☆</sup>



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### KEYWORDS

Erectile dysfunction;  
Prostate biopsy

### Abstract

**Objective:** To assess erectile function at different periods of time in patients who undergo transrectal prostate biopsy (TRPB).

**Material and methods:** A total of 364 patients underwent TRPB. All of the patients were assessed using the International Index of Erectile Function-5 (IIEF-5). All patients with a positive result for cancer or with previous erectile dysfunction in the initial assessment were excluded. Ninety-three patients were included and were assessed before the biopsy and at 4, 12 and 24 weeks after the TRPB, using the IIEF-5 and assessing erectile function across these time periods. **Results:** We assessed 93 patients. During the first prebiopsy assessment, 100% of the patients scored  $\geq 22$  points. In the first postbiopsy evaluation at 4 weeks, 66.6% scored  $\geq 22$  points, and 33.3% had erectile dysfunction, thereby indicating a statistically significant reduction in the IIEF-5 score ( $p = .001$ ).

In the second postbiopsy evaluation, only 9.1% patients still had mild to moderate erectile dysfunction ( $p = .04$ ). By the end, 92.48% of the patients scored  $\geq 22$  points, and 7.52% still had mild erectile dysfunction, without presenting a significant difference ( $p = .1$ ).

**Conclusions:** After a TRPB, the drop in IIEF-5 scores and the presence of erectile dysfunction are temporary and transient, with greater impairment during the first month following the procedure and improvement starting after the first month, with almost total recovery at 6 months.

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**PALABRAS CLAVE**Disfunción eréctil;  
Biopsia de próstata**Impacto de la biopsia transrectal de próstata en la función eréctil****Resumen**

**Objetivo:** Evaluar la función eréctil en distintos periodos de tiempo en pacientes que se sometieron a biopsia transrectal de próstata.

**Material y métodos:** Trescientos sesenta y cuatro pacientes se sometieron a BTRP. Todos los pacientes se evaluaron utilizando el Índice Internacional de Función Eréctil (IIEF-5); se excluyó a todos los pacientes con resultado positivo para cáncer y con disfunción eréctil o previa en la evaluación inicial. Se incluyó a 93 pacientes, los cuales se evaluaron antes de la biopsia y a las 4, 12 y 24 semanas posteriores a la BTRP, utilizando el IIEF-5 y evaluando la función eréctil a través de estos periodos.

**Resultados:** Se evaluó a 93 pacientes; durante la primera evaluación prebiopsia el 100% presentó  $\geq 22$  y en la primera evaluación posbiopsia a las 4 semanas el 66,6% tuvo  $\geq 22$  puntos y el 33.3% presentó disfunción eréctil, identificando una reducción estadísticamente significativa en las puntuaciones del IIEF-5 ( $p=0,001$ ).

En la segunda evaluación posbiopsia solo el 9,1% de los pacientes persistió con disfunción eréctil, leve y moderada ( $p=0,04$ ); al finalizar, el 92,48% de los pacientes tenían  $\geq 22$  puntos y el 7,52% persistió con disfunción eréctil leve sin presentar una diferencia significativa. ( $p=0,1$ ).

**Conclusiones:** Después de la BTRP, la disminución en las puntuaciones de IIEF-5 y la presencia de disfunción eréctil son temporales y transitorias, con una mayor afectación durante el primer mes posterior al procedimiento, mostrando una mejoría a partir del primer mes, y una recuperación casi total a 6 meses.

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**Introduction**

Prostate biopsy guided by ultrasound (TRUS biopsy) has become the gold standard in diagnosing carcinoma of the prostate since the method's introduction in 1989 by Hodge et al.<sup>1</sup> Millions of men throughout the world undergo a TRPB, with nearly a million biopsy procedures being done yearly in the United States.<sup>2,3</sup> Amongst the men who undergo a TRPB, almost 50% of them will be diagnosed with carcinoma of the prostate (CaP).<sup>4</sup>

TRUS biopsy is not a complication-free procedure since 1.0–6.9% of men who undergo the procedure can present adverse effects such as haematuria, hematospermia, dysuria, fever, and septicemia in 0.5–5% of cases.<sup>5,6</sup> Regardless, it is still considered a relatively safe procedure.

As a complication of biopsy, erectile dysfunction (ED) has been observed and has been described since the year 2001.<sup>7</sup> The repercussion of TRPB over erectile function is not described as one of the main side effects; however, few studies have demonstrated the relationship that exists between ED and TRPB. This has led to several theories and hypotheses being made on ED's origin, but the exact mechanism is still unknown. The majority of studies carried out on the subject are in small-scale, retrospective, and show heterogeneous results. It is because of this that in our present study we decided to evaluate the erectile function of men before and after a TRPB was done, all of whom did not previously suffer from erectile dysfunction.

**Objective**

To evaluate erectile function across different time periods in male patients who undergo a transrectal prostate biopsy.

**Material and methods**

After institution approval was granted, 364 patients underwent a TRUS biopsy done by different urologists trained on how to do the procedure. There was identification of 93 men that met the inclusion criteria: presence of specific prostate antigen  $>3$  ng/mL, abnormal rectal exam, knowing how to read and write, having enough comprehension to fill out the IIEF-5 questionnaire, and a negative PCa result in the TRUS biopsy. All men with a previous ED and/or PCa diagnosis, a previous TRUS biopsy, or a second neoplasm were excluded, as well as patients with: bone pains, disease opposing TRPB, history of cardiovascular disease (acute myocardial infarction, stroke, chronic obstructive pulmonary disease), terminal chronic kidney disease, major depression disorder, intake of antidepressants within the last three months, and intake of phosphodiesterase inhibitors (tadalafil, vardenafil, sildenafil). The patients who met the criteria underwent the biopsy. The main point of evaluation was erectile function, studied with the International Index of Erectile Function (IIEF-5). The IIEF's score range is from 5 to 25 points. We grouped the patients into four categories according to the severity of ED: severe (5–7 points), moderate (8–16 points), mild (17–21 points), and no ED (22–25 points). The questionnaire (IIEF-5) was answered before the procedure (biopsy) and later on three different occasions at 4 weeks, 12 weeks, and 6 months after the biopsy. The questionnaires were answered during the follow-ups of the patients. All patients who had a positive PCa diagnosis post-biopsy were excluded. The biopsy was conducted in a systematic manner in all patients. All patients had rectal preparation one day prior to the procedure and the administration of antibiotics was done according to the AUA's Best Practice Statement 2014. The ultrasound equipment used was an Aloka®  $\alpha 6$

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