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ORIGINAL ARTICLE

Comparison of pathological data between prostate biopsy and radical prostatectomy specimen in patients with low to very low risk prostate cancer☆

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Prostate cancer;
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Abstract

Objective: To analyze the correlation between pathological data found in radical prostatectomy and previously performed biopsy in patients at low risk prostate cancer.

Material and methods: A descriptive, cross-sectional study was conducted to assess the characteristics of radical prostatectomies performed in our center from January 2012 to November 2014. The inclusion criteria were patients with low-risk disease (cT1c–T2a, PSA $\leq$ 10 ng/ml and Gleason score $\leq$ 6). We excluded patients who had fewer than 8 cores in the biopsy, an unspecified number of affected cores, rectal examinations not reported in the medical history or biopsies performed in another center.

Results: Of the 184 patients who underwent prostatectomy during this period, 87 met the inclusion criteria, and 26 of these had <3 affected cores and PSA density $\leq$.15 (very low risk). In the entire sample, the percentage of undergrading (Gleason score $\geq$7) and extracapsular invasion (pT3) was 18.4% (95% CI 10.3–27.6) and 10.35% (95% CI 4.6–17.2), respectively. The percentage of positive margins was 21.8% (95% CI 12.6–29.9). In the very low-risk group, we found no cases of extracapsular invasion and only 1 case of undergrading (Gleason 7 [3 + 4]), representing 3.8% of the total (95% CI 0–12.5). Predictors of no correlation (stage $\geq$ pT3a or undergrading) were the initial risk group, volume, PSA density and affected cores.

Conclusions: Prostate volume, PSA density, the number of affected cores and the patient's initial risk group influence the poor pathological prognosis in the radical prostatectomy specimen (extracapsular invasion and Gleason score $\geq$ 7).

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PALABRAS CLAVE
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Comparación de datos anatomopatológicos entre biopsia de próstata y pieza de prostatectomía radical en pacientes con cáncer de bajo y muy bajo riesgo

Resumen

Objetivo: Analizar la correlación entre los datos anatomopatológicos encontrados en prostatectomía radical y la biopsia previa realizada en pacientes con cáncer de próstata de bajo riesgo.

Material y métodos: Se ha realizado un estudio descriptivo transversal para valorar las características de las prostatectomías radicales realizadas en nuestro centro desde enero de 2012 a noviembre de 2014. Los criterios de inclusión fueron pacientes con enfermedad de bajo riesgo (cT1c-T2a, PSA $\leq$ 10 ng/ml y Gleason $\leq$ 6). Fueron excluidos aquellos con menos de 8 cilindros en la biopsia, número de cilindros afectos no especificados, tacto rectal no recogido en historia clínica o biopsia realizada en otro centro.

Resultados: De las 184 prostatectomías realizadas en este periodo, 87 pacientes cumplían con los criterios de inclusión y 26 de estos presentaban < 3 cilindros afectados y un PSAd $\leq$ 0,15 (muy bajo riesgo). Encontramos en la muestra total un porcentaje de infragradación (Gleason $\geq$7) del 18,4% (IC 95%: 10,3–27,6%) y de afectación extracapsular (pT3) del 10,35% (IC 95%: 4,6–17,2%). El porcentaje de márgenes positivos fue del 21,8% (IC 95%: 12,6-29,9%). En el grupo de muy bajo riesgo no encontramos ningún caso de afectación extracapsular y un solo caso de infragradación (Gleason 7 [3 + 4]) representando un 3,8% del total (IC 95%: 0-12,5%). Resultaron ser variables predictoras de no correlación (estadio $\geq$ pT3a o infragradación) el grupo de riesgo inicial, volumen, PSA densidad y cilindros afectados.

Conclusiones: El volumen prostático, el valor del PSA densidad, el número de cilindros afectados y el grupo de riesgo inicial del paciente influyen en la aparición de datos de mal pronóstico anatomopatológico en la pieza de prostatectomía radical (afectación extracapsular y Gleason $\geq$ 7).

Introduction

The incidence of prostate cancer in North America is estimated at 85.6 cases per 100,000 men, with a mortality rate of 9.9 cases per 100,000 in 2008. In Europe, the incidence is 59.3, with a mortality of 12 cases per 100,000 men according to data from GLOBOCAN 2008. A rising trend is observed in incidence worldwide and a decrease in mortality at the expense of more developed regions.[1] In Spain, the prostate cancer registry conducted in 2010 shows an incidence of 82.27 per 100,000 men, 56.5% of them having Gleason $\leq$6.[2]

Although the increasingly widespread opportunistic screening seems to increase survival, it leads to an increase in the diagnosis of prostate tumors considered low risk. This called overdiagnosis carries a worrying overtreatment with it. Patients with low-risk tumor or elderly at the time of diagnosis (low life expectancy) in which tumor treatment will not increase survival suffer the consequences of treatment.[3,4]

Active surveillance is proposed as an option to reduce this overtreatment due to the overdiagnosis that widespread PSA involves.[5] This modality consists in monitoring patients until data of disease progression are detected, raising then the treatment. One of the critical points of this approach is the difficulty in differentiating clinically insignificant tumors only with analytical (PSA, PSAd), clinical (DRE), or histological data (affected cylinders and Gleason score). We analyzed different criteria in different geographical areas with varying results. We intend to provide the literature with our data.

Material and methods

We analyzed retro and prospectively 184 radical prostatectomies performed in our center from January 2012 to November 2014. We selected those who met low-risk criteria of the classification of the National Comprehensive Cancer Network (NCCN)[6] according to clinical and histological prostate biopsy data (stage cT1c-T2a, PSA $\leq$ 10 ng/ml, and Gleason $\leq$ 6). We excluded from the analysis those patients with less than 8 cylinders taken at biopsy or where the number of affected cylinders, prostate volume, or DRE were not collected in the clinical history. Patients diagnosed in other centers were not considered for analysis either. Prostate volume was measured by means of abdominal or transrectal ultrasound before the intervention. In patients who met the inclusion criteria, we checked the radical prostatectomy specimen looking for undergrading data (Gleason $\geq$ 7) and extracapsular involvement. We also analyzed the percentage of positive margins without differentiating their location or extension. Then we differentiated the total sample of another group who had <3 affected cylinders in the biopsy, digital rectal examination was negative (cT1c), and PSAd $\leq$ 0.15 (very low risk as classified by the NCCN),[6] we analyzed the same pathological data in this group.

The qualitative variables according to study groups (low/very low and correlation/no correlation) were analyzed by means of the Chi-square test or Fisher's exact test when necessary. Quantitative variables are expressed as mean and standard deviation and for comparison by groups,