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ORIGINAL ARTICLE

Relationship Between Pre- and Post-Orchidectomy Serum Dihydrotestosterone and Prostate Cancer Severity in a Cohort of Nigerian Patients

Relation Entre Les Niveaux Sériques De Dihydrotestostérone Avant Et Après Orchidectomie Et La Sévérité Du Cancer De La Prostate Dans Une Cohorte De Patients Nigériens.

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ABSTRACT

INTRODUCTION: Prostate cancer (PCa) is the commonest urologic cancer worldwide and the leading cause of male cancer deaths in Nigeria. In Nigeria, orchidectomy remains the primary androgen deprivation therapy. Dihydrotestosterone (DHT) is the active prostatic androgen, but its relationship with PCa severity has not been extensively studied in Africa.

OBJECTIVES: This study assessed the relationship between serum levels of DHT (pre- and post-orchidectomy) and serum prostate specific antigen (PSA), as well as Gleason scores.

METHODS: Patients undergoing orchidectomy for histologically confirmed prostate adenocarcinoma were studied. Serum PSA and DHT levels were assessed before orchidectomy, and 6 weeks afterwards. This was correlated with their Gleason scores. Data was analyzed using the IBM SPSS Statistics version 20. $P < 0.05$ was considered significant.

RESULTS: Fifty-three patients completed the study. The mean age was 69.3 ± 6.9 years. Pre- and post-orchidectomy serum PSA ranged from 11.30 to 562.00 ng/ml and 0.01ng/mL to 245.00 ng/mL respectively. Pre- and post-orchidectomy DHT ranged from 6.91ng/mL to 4,996.38 ng/mL and 6.56 ng/mL to 2,575.03 ng/mL respectively. Up to 40% still had normal DHT post-orchidectomy.

There was a positive but statistically insignificant correlation between pre-orchidectomy serum PSA and DHT ($r = 0.089$, $p = 0.527$). There was however a direct and significant relationship between pre-orchidectomy serum DHT and Gleason scores ($p = 0.042$).

CONCLUSION: This study showed a relationship between pre-orchidectomy serum DHT and Gleason scores. Assessing DHT in patients with high Gleason scores could influence hormonal manipulation. **WAJM 2024; 41 (9): 966-971**

KEYWORDS: Prostate, Cancer, Dihydrotestosterone, Orchidectomy

RÉSUMÉ

INTRODUCTION: Le Cancer De La Prostate (PCa) Est Le Cancer Urologique Le Plus Courant Dans Le Monde Et La Principale Cause De Décès Par Cancer Chez Les Hommes Au Nigeria. Au Nigeria, L'orchidectomie Reste La Principale Thérapie De Privation Androgénique. La Dihydrotestostérone (DHT) Est L'androgène Prostatique Actif, Mais Sa Relation Avec La Sévérité De La PCa N'a Pas Été Beaucoup Étudiée En Afrique.

OBJECTIFS: Cette Étude A Évalué La Relation Entre Les Niveaux Sériques De DHT (Avant Et Après Orchidectomie) Et L'antigène Spécifique De La Prostate (PSA), Ainsi Que Les Scores De Gleason.

MÉTHODES: Les Patients Subissant Une Orchidectomie Pour Un Adénocarcinome Prostatique Confirmé Histologiquement Ont Été Étudiés. Les Niveaux Sériques De PSA Et De DHT Ont Été Évalués Avant L'orchidectomie Et 6 Semaines Après. Cela A Été Corrélié Avec Leurs Scores De Gleason. Les Données Ont Été Analysées En Utilisant IBM SPSS Statistics Version 20. $P < 0,05$ A Été Considéré Comme Significatif.

RÉSULTATS: Cinquante-Trois Patients Ont Complété L'étude. L'âge Moyen Était De $69,3 \pm 6,9$ Ans. Les Niveaux Sériques De PSA Avant Et Après Orchidectomie Allaient De 11,30 À 562,00 Ng/ml Et De 0,01 Ng/ml À 245,00 Ng/ml Respectivement. Les Niveaux De DHT Avant Et Après Orchidectomie Allaient De 6,91 Ng/ml À 4,996,38 Ng/ml Et De 6,56 Ng/ml À 2,575,03 Ng/ml Respectivement. Jusqu'à 40 % Avaient Encore Des Niveaux Normaux De DHT Après L'orchidectomie.

Il Y Avait Une Corrélation Positive Mais Statistiquement Non Significative Entre Le PSA Sérique Avant L'orchidectomie Et La DHT ($r = 0,089$, $p = 0,527$). Il Y Avait Cependant Une Relation Directe Et Significative Entre La DHT Sérique Avant L'orchidectomie Et Les Scores De Gleason ($p = 0,042$).

CONCLUSION: Cette Étude A Montré Une Relation Entre La DHT Sérique Avant L'orchidectomie Et Les Scores De Gleason. L'évaluation De La DHT Chez Les Patients Ayant Des Scores De Gleason Élevés Pourrait Influencer La Manipulation Hormonale.

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MOTS CLÉS: Prostate, Cancer, Dihydrotestostérone, Orchidectomie.

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Abbreviations: Pca: Prostate cancer; DHT: Dihydrotestosterone; GS: Gleason scores; LHRH: luteinizing hormone releasing hormone; PSA: prostate-specific antigen; LHRH: luteinizing hormone releasing hormone; ELISA: Enzyme-linked immune-sorbent assay; SPSS: Statistical Product and Service Solutions; USA: United States of America