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Vitamin D Receptors Gene Polymorphisms and their Association with Serum Vitamin D level among Sudanese Patients with Benign Prostatic Hyperplasia

Yousif Abdelhameed Mohammed[1]*, Ameer Mohamed Dafalla[1], Dafalla Abuidris[1], A. D.Abakar[2], AdilMergani[1], Abuagla M. Dafalla[2], Amira S Kalafalla[2], GadAllah Modawe[3] and Mutaz. I. Hassan[4]

1. National Cancer Institute, University of Gezira, Wad Medani, **SUSAN**
2. Faculty of Medical Laboratory Science, University of Gezira, Wad Medani, **SUSAN**
3. Faculty of Medicine and Health Sciences, Omdurman Islamic University, Omdurman, **SUDAN**
4. Faculty of Medical Laboratory Science, Shendi University, **SUDAN**

Email: mutazhassan79@gmail.com

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ABSTRACT

Benign prostatic hyperplasia (BPH) is a non-malignant enlargement of the prostate and it is a not unusual reason of lower urinary tract symptoms (LUTS) among older men. BPH have a massive effect on health of older men and their health-care. Human VDR is a nuclear receptor gene located in the long arm of chromosome 12, and consists of 11exons and 11 introns. The most frequently studied single nucleotide polymorphisms are BsmI (rs1544410), TaqI (rs731236), FokI (rs2228570), and ApaI (rs7975232) as defined by using the endonucleases BsmI, TaqI, FokI, and ApaI. There was no previous study in Sudan regarding to association between vitamin D level and VDR polymorphism with Benign Prostatic Hyperplasia (BPH).This is case control study aimed to Assess Vitamin D Receptors Gene Polymorphisms and Their Association with Serum Vitamin D level among Sudanese Benign Prostatic Hyperplasia attending Gezira Hospital for Renal Disease and Surgery (GHRDS). Fifty patients with BPH were included in the study based on their histopathology result with age means (65.84±9.51) years and 40 healthy control group, vitamin D level was measured by immunoassay using cobase 411 ROCHE instrument and VDR was detected by using polymerase chain reaction with confronting two-pair primers technique, ApaI and TaqI SNP failed to find any associated with Benign Prostatic Hyperplasia but FokI and BsmI find association, all study single nucleated polymorphisms of VDR gene showed significant association with prostate cancer risk except ApaI SNP, vitamin D Levels were decreased among BPH patients (29.50±11.52) when compeer with control group (30.45±10.35) without significant differences p. value (0.207).Oral supplementation is recommended for individuals with low level of vitamin D, also Screening BsmI (A/G) allel in Benign Prostatic Hyperplasia.

Keywords: Benign prostatic hyperplasia, Vitamin D Receptor, Polymorphism, Sudanese.