P054 Metabolic effects in men undergoing androgen deprivation treatment for prostate cancer

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Cakici M.C.[1], Can B.[2], Kazan H.O.[1], Efiloglu O.[1], Sendogan F.[1], Ucar T.[1], Turan T.[1], Yildirim A.[1]

[1]Medeniyet University Goztepe Research and Training Hospital, Dept. of Urology, Istanbul, Turkey, [2]Medeniyet University Goztepe Research and Training Hospital, Dept. of Endocrinology, Istanbul, Turkey

Introduction & Objectives: Prostate cancer (PCa) is the most common cancer among men. Androgen deprivation therapy (ADT), which is is the mainstay treatment of advanced PCa, causes side effects such as chronic fatigue, osteoporosis, diabetic predisposition, cardiac side effects, fever pressures and decreased libido. ADT decreases insulin sensitivity while promoting dyslipidemia and sarcopenic obesity. Our aim in this study is to investigate the metabolic changes in PCa patients who use ADT.

Materials & Methods: Patients with PC diagnosis and male patients of similar age group as control group were included in the study. Body mass indexes, measurements of waist circumference, biochemical blood parameters and TANITA measurements were recorded for all patients. Patients were divided into three groups: Non-ADT group (Group 1) and ADT group (Group 2), control group (Group 3). The characteristics of each group were compared statistically.

Results: The characteristics of the patients are summarized in Table 1. BMI measurements of all 3 groups were similar ($p = 0.469$). However, measurements of waist circumference were found to be higher in patients receiving ADT ($p = 0.003$). Similarly, body fat mass and fat ratio were also significantly higher in ADT group. HDL (high density lipoprotein) value was 44.0 ± 10.1 in group 1; 45.5 ± 9.9 in group 2 and 41.9 ± 8.8 mg / dl in group 3, and the ADT group had the highest value among the 3 groups ($p = 0.017$). Other values of lipid profile and fasting blood glucose

were similar in all three groups (Table 1).

Table 1. Clinical and biochemical characteristics of patients

	PCa ADT (-) Group 1 (n=240)	PCa ADT (+) Group 2 (n=102)	Control Group 3 (n=130)	p value
Age	66.8±7.4	72.5±7.4	64.1±8.1	<0.001
BMI (kg/m2)	27.1±3.5	27.7±4.6	27.3±4.0	0.469
Waist circumference (cm)	100.5±9.2	104.4±10.7	101.1±9.6	**0.003**[¥,§]
Body Fat mass (kg)	17.2±6.2	19.3±7.8	17.4 ±7.4	**0.030**[Ω]
Fat ratio (%)	21.0±5.5	23.0±6.2	20.8±6.2	**0,006**[x,y]
Degree of obesity(%)	23.1±16.0	26.1±21.0	24.7±18.6	0,346
Lean mass (kg)	61.4±7.1	61.2±6.7	62.3±6.7	0.350
Muscle mass (kg)	58.4±6.4	58.0±6.9	58.9±7.2	0.599
Basal metabolic rate (cal)	1775.9±200.7	1762.5±225.6	1803.8±207.6	0.285
Total body water (kg)	43.7±5.1	43.0±5.9	44.4±5.0	0,109
T.Testosterone (ng/ml)	5.0±2.1	0.4±1.0	5.2±1.8	**<0,001**[†, ‡]
T. Cholesterol (mg/dL)	202.1±44.5	200.7±39.0	198.1±36.0	0,672
Non-HDL (mg/dL)	158.3±41.5	155.4±38.5	154.9±37.1	0,684
HDL (mg/dL)	44.0±10.1	45.5±9.9	41.9±8.8	**0,017** [Ψ]
LDL (mg/dL)	128.5±36.5	125.5±33.2	128.3±32.1	0.750
Triglyceride (mg/dL)	153.7±88.3	167.4±98.3	153.8±89.6	0,402
Glucose (mg/dL)	112.8±33.4	116.7±49.4	107.2±24.1	0.117

[¥] Group 2 vs Group 3 p=0,02, [§] Group 1 vs Group 2 p=0,002; [Ω] Group 1 vs Group 2 p=0.025

[x] Group 2 vs Group 3 p=0,011, [y] Group 1 vs Group 2 p=0,012; [†]Group 2 vs Group 3 p<0.001,

[‡]Group 1 vs Group 2 p<0.001; [Ψ] Group 2 vs Group 3 p=0.015,

Conclusions: While the use of ADT is manifested by an increase in fat mass and fat ratio in body composition, it negatively affects waist circumference measurements. It is associated with metabolically unfavorable body composition changes that predispose to diabetes and may increase cardiovascular risk. For this reason, it is necessary to be careful about metabolic and endocrinological diseases in long-term use.