

OBJECTIVES

To study the relation between endogenous sex hormones with different components of Met S and compare them with healthy Egyptian males.

Design : The study was conducted on 80 Egyptian males divided into 2 groups

Group 1: 40 males with Met S, (having at least 3 of the following : a- waist circumference >102 cm, b- TG>150 mg% c-low HDL<40 mg% d- high blood pressure, SBP>130 or DBP>85 e-FBG> 100mg%.

Group 2: 40 healthy males of matched age(18-40 y);

No DM,hypertension, dyslipidemia, hepatic or renal disease, current malignancy; no cerebrovascular or heart disease;NO antiandrogen treatment, None was a smoker or alcoholic.The study was approved by the Research Ethics Committee (Ain Shams) and informed consent was obtained from each participant

All subjects were submitted

Full history taking &Thorough clinical examination & anthropometric evaluation

Laboratory investigations

- FBG ,Lipid Profile ,Fasting serum Insulin,Calculation of HOMA-IR , Testosterone &Estradiol by ELISA

Results :

Table 1 : Comparison between both groups as regards different Parameters

	Males with Met S (n=40)	Males without Met S (n=40)	Student t test	
			t	P
Age (Years)	32.0 ± 5.4	30.7 ± 4.6	1.1	0.25
BMI (Kg/m ²)	32.3 ± 3.8	28.4 ± 4.0	4.4	0.0001*
Waist circumference	110.5 ± 7.0	100.7 ± 6.4	6.4	0.0001*
SBP (mmHg)	135.5 ± 12.1	117.3 ± 3.6	9.0	0.0001*
DBP (mmHg)	94.3 ± 10.6	74.9 ± 3.4	10.9	0.0001*
Total cholesterol mg/dl	275.4 ± 32.2	155.7 ± 29.9	17.1	0.0001*
HDL mg/dl	39.6 ± 7.0	50.2 ± 4.8	-7.8	0.0001*
LDL mg/dl	175.4 ± 34.9	77.8 ± 31.1	13.1	0.0001*
Triglycerides mg/dl	301.6 ± 29.9	138.3 ± 24.5	26.6	0.0001*
Fasting blood glucose mg/dl	111.1 ± 6.9	90.8 ± 9.5	10.8	0.0001*
Fasting insulin IU/ml	6.9 ± 1.6	4.1 ± 1.7	7.1	0.0001*
HOMA-IR	1.89 ± 0.48	0.93 ± 0.39	9.6	0.0001*

Table 2: comparison between males with and without metabolic syndrome regarding sex hormone levels

	Males with metabolic syndrome (n=40)	Males without metabolic syndrome (n=40)	Student t test	
			t	P
Testosterone ng/dl	2.1 ± 0.64	3.27 ± 0.58	-8.0	0.0001*
Estradiol ng/dl	20.3 ± 4.3	14.6 ± 5.6	5.0	0.0001*
T:R ratio	0.11 ± 0.05	0.25 ± 0.09	-8.32	0.0001*

Table-3 Correlation between testosterone levels and different parameters

	Testosterone	
	r	p-value
Age (Years)	0.163	0.316
BMI (Kg/m ²)	-0.422	0.007*
Waist circumference (cm)	-0.346	0.029*
SBP (mmHg)	-0.147	0.365
DBP (mmHg)	-0.067	0.682
WEIGHT	-0.382	0.015*
HEIGHT	0.267	0.096
Total cholesterol mg/dl	-0.355	0.025*
HDL mg/dl	0.364	0.021*
LDL mg/dl	-0.331	0.037*
Triglycerides mg/dl	-0.384	0.014*
Fasting blood glucose	-0.339	0.032*
Fasting insulin IU/ml	-0.475	0.002*
HOMA-IR	-0.483	0.002*

Table-4 Correlation between estradiol levels and different parameters

	Estradiol	
	R	P
Age (Years)	-0.367	0.020*
BMI (Kg/m ²)	0.056	0.731
Waist circumference	0.131	0.420
SBP (mmHg)	-0.068	0.677
DBP (mmHg)	-0.070	0.667
WEIGHT	-0.017	0.915
Total cholesterol	0.442	0.004*
HDL mg/dl	-0.081	0.618
LDL mg/dl	0.407	0.009*
Triglycerides mg/dl	0.078	0.634
Fasting blood gluc .	0.391	0.013*
Fasting insulin	0.311	0.050*
HOMA-IR	0.374	0.018*

Table 5 : ROC curve between patients and controls as regard Estradiol

Cutoff	Sens.	Spec.	PPV	NPV	Accuracy
> 16.78	92.5	82.5	84.1	91.7	83.1

Table 6 : ROC curve between patients and controls as regards Testosterone

Cutoff	Sens.	Spec.	PPV	NPV	Accuracy
<=2.37	67.5	95.0	93.1	74.5	90.2

Conclusion:

Patients with Met S had significant lower testosterone and significant higher E2. Testosterone and E2 were significantly associated with various components of the Met S.