

INTRODUCTION AND AIM

Pubertal gynecomastia is the transient proliferation of glandular tissue in breasts of men without any endocrin pathology.

In this study it is aimed to determine the clinical and laboratory properties of our patients who were diagnosed as pubertal gynecomastia and compare with healthy population.

MATERIAL AND METHOD

39 adolescent boys diagnosed as pubertal gynecomastia

39 healthy adolescent boys

Age
Stage of puberty

Weight (SD)

Height (SD)

Body Mass Index (SD)

LH, FSH, E₂, Total Testosterone
Estradiol/Testosterone (E₂/T) rate
TSH, fT₄
Prolactin,
AFP, β-HCG
AST, ALT
BUN, creatinin

Breast glandular tissue diameters
measured ultrasonographically in
gynecomastia group was noted.

Family history, drug usage and comorbidities were evaluated.

RESULTS

Table I: Clinical characteristics of pubertal gynecomastia cases and control group

	Gynecomastia (n=39) (mean±SD) (min-max)	Control (n=39) (mean±SD) (min-max)	p
Age (year)	13.7±1.6 (10.2-16.8)	13.6±1.9 (10.0-17.5)	0.419
Weight (Kg)	58.3±14.7 (34.5-86.5)	57.8±14.5 (32.0-84.5)	0.426
Weight SD	0.22±1.5 (-1.8-1.9)	0.28±1.21 (-1.1-1.9)	0.770
Height (cm)	162.0±11.0 (140.7-189.8)	158.9±11.1 (138.0-179.8)	0.158
Height SD	-0.00±1.24 (-2.0-2.3)	-0.14±1.11 (-1.97-1.98)	0.615
BMI (kg/m ²)	21.9±4.1 (15.6-27.0)	21.9±3.9 (15.0-28.0)	0.976
BMI SD	0.26±1.36 (-2.2-2.0)	0.38±1.19 (-1.9-1.9)	0.653
Stage of puberty (median) (min-max)	4 (2-5)	4 (2-5)	0.361

Glandular tissue diameters
Right 1.88±0.88 (0.6-4.1) cm
Left 1.95±1.02 (0.6-3.6) cm
p<0.01

Table II: Laboratory characteristics of pubertal gynecomastia cases and control group

	Gynecomastia (n=39) (mean±SD) (min-max)	Control (n=39) (mean±SD) (min-max)	P
LH (mIU/ml)	2.2±2.0 (0.5-7.8)	2.1±1.47 (0.4-5.0)	0.116
FSH (mIU/ml)	2.4±1.8 (0.1-7.7)	2.1±1.4 (0.2-4.4)	0.234
Testosterone (ng/dl)	267.2±195.2 (20.7-828.9)	223.5±210.4 (22.0-594.2)	0.389
E ₂ (pg/ml)	19.8±13.0 (5.0-42.8)	13.4±14.4 (5.0-73.6)	0.07
E ₂ /T rate	0.016±0.015 (0.002-0.068)	0.010±0.014 (0.001-0.058)	0.116
PRL (ng/ml)	11.2±5.3 (1.4-23.1)	8.3±3.0 (3.3-16.0)	0.015
TSH (uIU/ml)	2.6±1.4 (0.5-5.9)	2.6±1.2 (0.7-6.3)	0.941
fT ₄ (ng/ml)	1.1±0.1 (0.9-1.4)	1.2±0.2 (0.9-1.6)	0.350
AST (U/L)	23.8±5.0 (15.0-34.0)	23.6±8.9 (17.0-43.0)	0.723
ALT (U/L)	18.8±9.0 (7.0-45.0)	21.6±10.7 (9.0-50.0)	0.231
BUN (mg/dl)	23.1±6.0 (8.0-34.0)	23.9±5.0 (16.0-34.0)	0.671
Creatinin (mg/dl)	0.5±0.1 (0.2-0.8)	0.5±0.1 (0.4-0.9)	0.204
AFP (ng/ml)	1.5±0.9 (0.3-4.4)	1.3±1.2 (0.5-5.1)	0.303
β-HCG (mIU/ml)	0.1-0.0 (0.10-0.15)	0.1±0.1 (0.10-0.15)	0.138

GYNECOMASTIA PATIENTS

Mean compliation duration was 18.6±25.2 (1-104) weeks.

10.3% (n=4) had family history
7.7% (n=3) had drug usage
12.8% (n=5) had comorbidities.

71,7% of gynecomasty patients (n=28) were bilateral.

Table III: Laboratory features of bilateral and unilateral gynecomastia cases

	Gynecomastia patients (n=39)		P
	Bilateral (n=28) (mean±SD) (min-max)	Unilateral (n=11) (mean±SD) (min-max)	
Testosterone (ng/ml)	235.5±204.3 (21.0-828.9)	369.4±126.9 (135.2-544.8)	0.02
Estradiol (pg/ml)	14.9±10.7 (5.0-36.9)	12.9±15.2 (5.0-73.6)	0.67
E ₂ /T rate	0.011±0.016 (0.001-0.050)	0.004±0.003 (0.001-0.010)	0.01

Unilateral gynecomasty in right breast was 66.6% (n=6).

DISCUSSION

Transient pubertal gynecomastia are peak at between 13 and 14 ages and Tanner Stage III-IV.

Although the pathophysiology suggests that high estrogen/androgen rates in early stages of puberty and elevated breast tissue sensitivity to low free estrogen play a role, etiology is not fully understood and more than one factor is thought to be responsible

In most studies, there was no difference in estradiol levels and estrogen/androgen rates among those with pubertal gynecomastia and those without gynecomastia

CONCLUSION

We determined that there is no difference in E₂ levels ve E₂/T rate between gynecomastia patients and control group. Therefore, it is considered that increased estrogen sensitivity of breast tissue takes role rather than increased estrogen levels or imbalance between estrogen and testosterone.