RESULTS

The present study was conducted on 99 normal females from Qalubia governorate, their ages ranged from (1 to 15) years; they were divided into three groups. The age of first group ranged from 1 to <6 years and their number were 24 females. The age of second group ranged from (6 to <10) years and their number were 32 females. The age of third group ranged from (10 to15) years and their number were 43 girls.

The age, weight, height and time of menarche for each female in each group were recorded .Each female was subjected for uterine and ovarian ultrasound. The uterine parameters (length, width, anteroposterior diameter and volume) and ovarian volume for each side were calculated.

The results of the variables were registered and analyzed statistically in the following tables and figures.

The relationship between the uterine parameters and ages of the studied groups (table 1):

Length of uterus:

In the first group, the mean length of the uterus was about (37.7 ±7.9) mm (30-52) mm (photos: 1b, 2b). When correlate the length of the uterus with the age of this group, statistically this correlation was significant (P < 0.021). In the second group, the mean length of the uterus was about (48± 6) mm (34-52) mm (photo:

5b). When correlate the length of the uterus with the age of this group, statistically this correlation was significant (P <0.000). In the third group, the mean length of the uterus was about (53.7± 5.5) mm (41-64) mm (photos: 7b, 8b, 9b, 10b). When we correlate the length of the uterus with the age of this group, statistically this correlation was significant (P < 0.000).

Width of uterus:

In the first group, the mean width of the uterus was about (14.5 ± 3.3) mm (10.5-19.9) mm (photos: 1a, 2a). When correlate the width of the uterus with the age of this group, statistically this correlation was significant (P <0.000). In the second group, the mean width of the uterus was about (16.8± 2.6) mm (12.2-20.2) mm (photo: 5a). When correlate the width of the uterus with the age of this group, statistically this correlation was non significant (P > 0.179). In the third group, the mean width of the uterus was about (20.3± 2.4) mm (14.8-26.2) mm (photos: 7a, 8a, 9a, 10a). When we correlate the width of the uterus with the age of this group, statistically this correlation was significant (P < 0.007).

Antroposterior diameter of uterus:

In the first group, the mean antroposterior diameter of the uterus was about (5.4 ±0.6) mm (4.6-6.5) mm (photos: 1a, 2a). When correlate the antroposterior diameter of the uterus with the age of this group, statistically this correlation was significant (P <0.009).

In the second group, the mean antroposterior diameter of the uterus was about (6.8± 0.9) mm (5.1-8.1) mm (photo: 5a). When correlate

the antroposterior diameter of the uterus with the age of this group, statistically this correlation was non significant (P >0.104). In the third group, the mean Antroposterior diameter of the uterus was about (10.4± 2.1) mm (7.5-15.1) mm (photos: 7a,7b, 8a,8b, 9a, 10a). When we correlate the antroposterior diameter of the uterus with the age of this group, statistically this correlation was significant (P<0.000).

Volume of uterus (table 1) (figure 1):

In the first group, the mean volume of the uterus was about (2.5±0.5) cm^3 (1.8-3.2) cm^3. When we correlate the volume of the uterus with the age of this group, statistically this correlation was significant (P< 0.000). In the second group, the mean volume of the uterus was about (3.6 ± 0.6) cm^3 (2.2-4.5) cm^3. When we correlate the volume of the uterus with the age of this group, statistically this correlation was significant (P<0.011). In the third group, the mean volume of the uterus was about (6.5 ± 2.4) cm^3 (4.1-12.2) cm^3. When we correlate the volume of the uterus with the age of this group, statistically this correlation was significant (P<0.000).

The relationship between the uterine parameters and body weight of the studied groups (table 2) (figure 2):

In the first group, the mean body weight was about (15.7±2.6) kg (11-20) kg. Statistically, when we correlate the mean body weight of this group with the uterine parameters: uterine length (37.7±7.9) mm, uterine width (14.5±3.3) mm, uterine antroposterior diameter

(5.4±0.6) mm and uterine volume (2.5±0.5) cm^3, the results showed positive significant correlation.

In the second group, the mean body weight was about (22.6± 3.3) kg (16-28) kg, when we correlate the mean body weight of this group with the uterine length (48±6) mm, uterine antroposterior diameter (6.8±0.9) mm and uterine volume (3.6±0.6) cm^3, statistically this correlation was significant. But, the uterine width (16.8 ± 2.6) mm, was not significant with body weight of this group.

In the third group, the mean body weight was about (34.3± 4) kg (26-40) kg, when correlate the mean body weight of this group with the uterine length (53.7±5.5) mm, uterine width (20.3 ± 2.4) mm, uterine antroposterior diameter (10.4±2.1) mm and uterine volume (6.5±2.4) cm^3, statistically this correlation was significant with the body weight of this group.

The relationship between the uterine parameters and body height of the studied groups (table 3) (figure 3):

In the first group, the mean body height was about (101.8 ± 9.2) cm (83-113) cm, when we correlate the mean body height of this group with the uterine parameters: uterine length (37.7±7.9) mm, uterine width (14.5±3.3) mm, uterine antroposterior diameter (5.4±0.6) mm and uterine volume (2.5±0.5) cm^3, the results showed positive significant correlation.

In the second group, the mean body height was about (124.9±9.6) cm (112-136) cm, when correlate the mean body height of this group with the uterine length (48±6) mm, and uterine volume

(3.6±0.6) cm^3 statistically this correlation was significant. But, the uterine width (16.8 ± 2.6) mm and uterine antroposterior diameter (6.8 ±0.9) mm was not significant with the body height of this group.

In the third group the mean body height was about (147.7 ± 6.2) cm (138-159) cm. When correlate the mean body height of this group with the uterine length (53.7±5.5) mm, uterine width (20.3 ± 2.4) mm, uterine antroposterior diameter (10.4±2.1) mm and uterine volume (6.5±2.4) cm^3, statistically this correlation was significant with the body weight of this group.

Correlation between the right and left ovarian volume and the age of studied groups (table 4) (figure 4):

In the first group, the mean right ovarian volume was about (11±1.3) mm^3 (1-21) mm^3 (photos: 3, 4), while the mean left ovarian volume was about (12 ± 1.9) mm^3 (1.1-23) mm^3. The difference between the right and left ovarian volumes was non significant. In the second group, the mean right ovarian volume was about (15 ± 2.1) mm^3 (2-28) mm^3 (photo: 6), while the mean left ovarian volume was about (16 ±4.6) mm^3 (2.2-29) mm^3. The difference between the right and left ovarian volume was non significant. In the third group, the mean right ovarian volume was about (42 ±5.6) mm^3 (26-65) mm^3 (photos: 11,12), while the mean left ovarian volume was about (40±5.4) mm^3 (23-58) mm^3 (photos: 11,12). The difference between the right and left ovarian volume was non significant.

In the first group, when correlate the right and left ovarian volumes with the age of this group, the results showed significant

correlation (P<0.023). In the second group, when correlate the right and left ovarian volumes with the age of this group, the results showed non significant correlation (P<0.095). In the third group, when correlate the right and left ovarian volumes with the age of this group, the results showed significant correlation (P<0.000).

Correlation between the right and left ovarian volume and the weight of the body of studied groups (table 5) (figure 5):

In the first group, when correlate the right and left ovarian volumes with the mean body weight of this group, the results showed significant correlation (P<0.001). In the second group, when correlate the right and left ovarian volumes with the mean body weight of this group, the results showed significant correlation (P<0.000). In the third group, when correlate the right and left ovarian volumes with the mean body weight of this group, the results showed significant correlation (P<0.000).

Correlation between the right and left ovarian volume and the height of the body of studied groups (table 6) (figure 6):

In the first group, when we correlate the right and left ovarian volumes with the mean body height of this group, the results showed significant correlation (P<0.023). In the second group, when we correlate the right and left ovarian volumes with the mean body height of this group, the results showed significant correlation (P<0.010). In the third group, when we correlate the right and left ovarian volumes with the mean body height of this group, the results showed significant correlation (P<0.000).

Comparison between uterine volume and ovarian volume of studied groups (table 7) (figure 7):

In the first group, the mean uterine volume was about (2.5 ±0.5) cm^3 (1.8 -3.2) cm^3, while the mean ovarian volume was about (1.2 ±0.7) cm^3 (0.1-2.3) cm^3. This means that the ovarian volume represented ٪54 of uterine volume in this group, when we correlate the uterine volume with ovarian volume, this correlation was significant (P<0.000).

In the second group, the mean uterine volume was about (3.6 ±0.5) cm^3 (2.2 -4.5) cm^3, while the mean ovarian volume was about (1.6 ±0.8) cm^3 (0.2-2.9) cm^3. This means that the ovarian volume represented ٪52 of uterine volume in this group, when we correlate the uterine volume with ovarian volume, this correlation was significant (P<0.000).

In the third group the mean uterine volume was about (6.5 ±2.4) cm^3 (4.1 -12.2) cm^3, while the mean ovarian volume was about (4.1 ±2.4) cm^3 (2.6-6.5) cm^3. This means that ovarian volume represented ٪63 of uterine volume in this group, when we correlate the uterine volume with ovarian volume, this correlation was significant (P<0.007). This means that ovarian growth rate was more progressive in third group than first and second groups.

From the age and the body height of girl we can calculate the uterine volume and ovarian volume by using those regression equations:

Uterine volume = 4.87 +0.76 × age - 0.06 × height.

Ovarian volume = 7.04 +0.86 × age - 0.09 × height

Relationship between the age of menarche and different variables (table 8):

In this study the numbers of menstruating females were 26 females: two females were in the second group aged 9.5 years and 9.9 years and 24 females were in the third group aged (10 to 13) years. The mean age of menarche in 26 females was 12.3 years.

The mean body weight of the menstruating females was (31 ± 7.8) kg (28-34) kg. When we correlate the mean body weight of the menstruating females with the age of menarche, the result showed significant correlation ($P < 0.011$).

The mean body height of the menstruating females was (142 ± 45.2) cm (135-149) cm. When correlate the mean body height of the menstruating females with the age of menarche, the result showed significant correlation ($P< 0.004$).

The mean uterine length was (55 ± 10.6) mm (50-60) mm. When correlate the mean uterine length of the menstruating females with the age of menarche, the result showed non significant correlation ($P< 0.946$).

The mean uterine width was (18.7 ± 4.3) mm (16.5-21) mm. When we correlate the mean uterine width of the menstruating females with the age of menarche, the result showed non significant correlation ($P< 0.942$).

The mean uterine antroposterior diameter was (10.7 ± 3.1) mm (7.2-14.2) mm. When correlate the mean uterine antroposterior diameter of the menstruating females with the age of menarche, the result showed significant correlation ($P< 0.001$).

The mean uterine volume was (6 ±1.5) cm^3 (4-8) cm^3. When correlate the mean uterine volume of the menstruating females with the age of menarche, the result showed significant correlation (P< 0.023).

The mean ovarian volume was (4.2 ±1.1) cm^3 (2-6.5) cm^3. When we correlate the mean ovarian volume of the menstruating females with the age of menarche, the result showed significant correlation (P< 0.007).