# SUMMARY

Polycystic ovary syndrome is a heterogeneous disorder which has eluded definitive description because of the varied combination of clinical, biochemical and ultrasonographic features which may occur.

The criteria for PCOS which likely identifies the core group of patients arose from the proceedings of a 1990 NIH conference, which noted the features of the disorder to be clinical and/ or biochemical hyperandrogenism with chronic anovulation, after the exclusion of related disorders such as hyperprolactinemia, thyroid disorders, and NCAH. The Rotterdam 2003 conference criteria expanded the 1990 NIH criteria for PCOS by creating 2 new phenotypes for PCOS, one including women with polycystic ovaries and signs of androgen excess, but no signs of ovulatory dysfunction and another including women with polycystic ovaries and ovulatory dysfunction, but no signs of androgen excess ***(The Rotterdam ESHRE/ASRM, 2004).***

There is no doubt that three dimensional ultrasound is a new imaging modality that allows true volumetric calculation and quantitative assessment of the vascularity within a defined volume of tissue.

**In this study** eighty women presented to the Gynecological Outpatient Clinic at Banha University Hospital, were recruited,based on clinical data and ultrasound findings, the women were divided into two groups:

- Group I(study): 40 women diagnosed as polycystic ovarian syndrome, by having two of the following criteria; first, a previous history of anovulatory cycles and/or oligomenorrhea; secondly clinical or biochemical evident of hyperandrogenism and finally; the presence of polycystic ovaries by 2-D transvaginal-ultrasound ***(The Rotterdam ESHRE/ASRM, 2004).***

- Group II(control):40 women ,they all had regular spontaneous menstrual cycles ranging from 21-35 days with a baseline transvaginal scan showing normal ovaries.

Comparison between both groups regarding patients characteristics(age- BMI)and ultrasound measurements using 2 D ultrasound for calculation of AFC and RI of the stromal vessels using pulsed –wave Doppler then 3 D ultrasound was done to measure total ovarian volume and stromal volume. Using the histogram facility of VOCAL™ software, three vascular indices were generated: vascularization index (VI), flow index (FI) and vascularization flow index (VFI).

In the comparison between PCOS and control group in our study, there was a high statistical significant difference ($P < 0.001$) as regards BMI,AFC, total ovarian volume, stromal volume, VI and VFI , no statistical significant difference ($P > 0.05$) was found between 2 groups as regarding ovarian stromal RI and FI .