Blood pressure, abdominal obesity, and IR including: fasting serum insulin, GIR and HOMA were also determined.

RESULTS: Age-adjusted prevalence of MBS was higher in women with PCOS (51.6%, 95% CI: 37.2-59.3%) as compared with women without PCOS (15.9%, 95% CI: 11.5-19.3%) ($P < 0.000$). The risk of MBS in women with PCOS was greater than that for women without PCOS of the same age group ($P<0.001$). Markers of IR (fasting serum insulin, GIR and HOMA) were abnormal in women with PCOS with MBS as compared with those without MBS ($P<0.001$). The most common abnormalities in the components of MBS in women with PCOS and MBS (after adjustment for age) were: decreased HDL-c (84.6 ± 9.3%); increased triglycerides (52.7 ± 10.2%); and increased BMI (39.6 ± 5.8%), respectively. The prevalence of MBS from lowest to highest tertile of free T level was 22.6, 34.8 and 51.1% respectively in women with PCOS and MBS. In women with PCOS, 7% exhibited all 5 components of MBS; 12.6% had 4 components, and 41.4% had 3 components.

CONCLUSION: Women with PCOS showed significantly higher prevalence of MBS (3.3-fold) as compared with age-matched control without PCOS. IR is a possible common pathogenetic factor for both PCOS and the MBS. It is suggested that more intensive screening and/or treatment of MBS among women with PCOS should be part of the therapeutic modalities of PCOS.

Supported by: None.

P-855

STUDY OF THE ASSOCIATION OF MCP-1 AND THE PATHOPHYSIOLOGY OF POLYCYSTIC OVARY SYNDROME. H. W. Hong, Q. Jie. Peking Univ. Third Hospital, Beijing, China.

OBJECTIVE: To measure serum monocyte chemoattractant protein-1 (MCP-1) levels and study its associations with pathophysiology in patients with polycystic ovary syndrome (PCOS).

DESIGN: Sixty-five PCOS women were divided to two groups: 27 body mass index [BMI]$\geq$25 kg/m^2 patients as obese group; 38 BMI$<$25 kg/m^2 as non-obese group. 20 ovulating normal women BMI$<$25 kg/m^2 were recruited as controls.

MATERIALS AND METHODS: Serum MCP-1 was assayed by enzyme-linked immunosorbent assays (ELISA) in patients. Serum prolactin(PRL), follicle stimulating hormone (FSH), luteinizing (LH),estradiol (E_2) and testosterone (T) were assayed by chemoluminescence method .Androstenedione (A) was assayed by radioimmunity method. Oral glucose tolerance test (OGTT) and insulin (INS) sensitivity were also assessed in PCOS patients.

RESULTS: 1.MCP-1 levels were found to be significantly increased in groups PCOS compared with that of controls($P=0.001$).PCOS obese group had markedly higher MCP-1 serum levels than non-obese group ($P=0.021$), and MCP-1 serum levels in PCOS non-obese group higher than controls ($P=0.018$). 2. Univariate analysis revealed that serum MCP-1 levels were significantly and positively correlated with BMI ($r=0.366$, $P=0.001$), LH ($r = 0.262$, $P=0.016$), and fasting insulin ($r=0.254$, $P=0.041$).Multiple regression analysis showed that MCP-1 levels correlate with BMI ($t=2.256$,$P=0.028$).

CONCLUSION: PCOS obese and non-obese patients had higher serum MCP-1 levels than controls. MCP-1 is correlated with BMI,LH and fasting insulin. BMI is a major determining factor of MCP-1 in patients with PCOS. MCP-1 is likely to participate in the pathophysiology of PCOS.

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P-856

ENDOMETRIAL STRIPE AND BODY MASS INDEX ARE INDEPENDENT PREDICTORS OF ENDOMETRIAL HYPERPLASIA IN PATIENTS WITH POLYCYSTIC OVARIAN SYNDROME. B. A. McCormick, R. Wilburn, M. A. Thomas, M. Aubuchon, R. Maxwell, D. B. Williams. Univ. of Cincinnati, Cincinnati, OH.

OBJECTIVE: PCOS is a known risk factor for endometrial hyperplasia. The objective of this study was to identify when these patients would benefit from endometrial biopsy (EMB) for early detection of endometrial hyperplasia. There is limited data evaluating the role of transvaginal ultrasound assessment of endometrial thickness to predict endometrial hyperplasia.

DESIGN: IRB approved retrospective chart review from January 2000 to April 2006.

MATERIALS AND METHODS: A review was performed of PCOS patients, as defined by the 2003 Rotterdam criteria, who underwent transvaginal ultrasound and EMB. The criteria for EMB consisted of either endometrial thickness of $\geq$ 9 mm, irregular bleeding, or $>$ 12 months of amenorrhea. The subjects were grouped according to EMB results of benign or hyperplasia/adenocarcinoma. Data collected included patient demographics, significant medical history, laboratory evaluation, and ultrasound measurement of endometrial stripe (ES). Data was analyzed utilizing chi square and Student's t-test. A receiver operator curve (ROC) was constructed to determine predictive values.

RESULTS: A total of 65 endometrial biopsies were evaluated from 52 patients: benign (n=45), and hyperplasia (n=20, including 1 case of adenocarcinoma). The mean patient age was 31.2 ± 5.29 y (± standard deviation (SD)). The groups did not differ with respect to: hirsutism evaluation, menstrual interval, presence of PCOS appearing ovaries, age, gravidity, parity, systolic and diastolic blood pressure, tobacco use, or testosterone, DHEAS, TSH, and prolactin values. However, a significantly thicker ES ($p=0.001$) was seen in women with hyperplasia compared to the benign group (14.06 ± 5.68 mm vs. 8.43 ± 4.03 mm, mean ± SD, respectively). Additionally, BMI was significantly greater ($p=0.01$) in those women with hyperplasia compared to those with benign pathology (44.21 ± 6.91 kg/m^2 vs 38.11 ± 7.83 kg/m^2, mean ± SD, respectively). A ROC revealed the area under the curve for ES and BMI were 0.827 and 0.710 respectively, with 1.0 representing the ideal value. Predictive values of hyperplasia were an ES of 9.36 mm (sensitivity 92.3%, specificity 62.5%) or a BMI of 32.85 kg/m^2 (sensitivity 100%, specificity 18.2%).

CONCLUSION: ES thickness and BMI were highly predictive of hyperplasia and adenocarcinoma in patients with PCOS. Based on our data it is reasonable to consider EMB in PCOS patients when ES is $\geq$ 9 mm or BMI is $\geq$ 32.9 kg/m^2.

Supported by: None

P-857

HYPERINSULINEMIA IS NOT ASSOCIATED WITH A HIGHER RESPONSE TO ACTH STIMULATION IN LEAN POLYCYSTIC OVARIAN SYNDROME PATIENTS. G. Uncu, E. S. Ozyurek, Y. Uncu, K. Ozerkan. Uludag University, Bursa, Turkey; Uludag University, istanbul, Turkey.

OBJECTIVE: To determine whether hyperinsulinemia in lean PCOS patients is associated with a higher response to ACTH stimulation

DESIGN: Controlled prospective study.

MATERIALS AND METHODS: 75 gm OGTT and ACTH stimulation tests were performed on a study group of 20 lean normoinsulinemic PCOS patients (HOMA score $\leq$ 3,77)-group I and a study group of 20 lean hyperinsulinemic PCOS patients (HOMA score $>$ 3,77). The two groups were BMI matched: Basal and ACTH stimulated (1 hour later) blood hormone levels of androstenedione, 17(OH)progesterone, free and total testosterone, (DHEA-S) and progesterone were measured; the proportional increase in the blood levels of these hormones following the ingestion of ACTH were compared in Groups I and II, using student's t test. Blood glucose and insulin levels were measured at 0, 30, 60, 90, 120 minutes following oral ingeston of glucose. Insulin response (AUC) to oral glucose ingestion was computed with the trapezouid rule and compared between the two groups. correlation analysis of the measured parameters was conducted within both groups. Statistical analysis was performed using the SPSS 11.0 package.

RESULTS: The general characteristics of both groups and groups I and II are in tables 1 and 2. The proportional increase in the blood levels of total and free testosterone, DHEA-S, androstenedione, 17(OH)-progesterone following ACTH stimulation was similar in the two groups. Only the insulin AUC values were different among the two groups. The insulin AUC values were positively correlated to the free testosterone blood levels. The insulin AUC values were significantly correlated to the HOMA scores.

Table 1:

	Mean+s.d.
Age	22,9±5
Age of menarche	13,3±1,5
BMI	23,8+3,3
LH/FSH	3±2,4
Blood Estradiol (pg/ml)	89,2±19,7
Progesterone (ng/ml)	2,4±2,37
Total Testosterone (ngml)	114,1±6,1
Free Testosterone (ng/ml)	3,8±4,7
Androstenedione (ng/ml)	2,6±1,5
17(OH) Progesterone (ng/ml)	2,6±1,2
DHEA(SO)4	290,7±31,5
Factorial Increase in 17(OH)P*	2,6±1,1
Factorial inrease in progesterone*	2,2±0,9
Factorial increase in DHEA(SO)4*	1,3±0,5
Factorial increase in Testosterone*	1,3±0,6
Factorial increase in free testosterone*	1,2±0,7

*: following the administration of ACTH

Table 2:

	Groups	
	I	II
	Value±S.D.	Value±S.D.
Age	21,3±4,3	26,2±5,8
Age of menarche	13,4±1,6	13,3±1,3
BMI	23,7±3,1	23,9±3
LH/FSH	3,2+2,6	2,3±1,6
Blood Estradiol (pg/ml)	90,7±7,8	85±20,2
Progesterone (ng/ml)	2,9+3,8	1,2+1,1
Total Testosterone (ng/ml)	108,8±5,7	123,1±7,1
Free Testosterone (ng/ml)	4,2±9,8	3,7±2,6
$DHEA(SO)_4$	310,7±32,4	233±31,3
Androstenedione (ng/ml)	1,5±0,8	3,37±2,3
17(OH) Progesterone (ng/ml)	2,1±1,2	3,1±0,5
Factorial Change in 17(OH)P¶	2,5±1,2	3±1,1
Factorial Change in progesterone¶	2,3±0,7	1,9±0,9
Factorial Change in DHEA(SO)4¶	1,3±0,3	1,39±0,56
Factorial Change in Testosterone¶	1,3±0,6	1,4±0,8
Factorial Change in free Testosterone¶	1,3+0,8	1,2+0,2
Insulin (area under the curve)€*	6818,9+5516,6	16427+315,1

*: statistically significant difference p<0,05

¶: (blood hormone level 1 hour after ACTH stimulaton/ blood hormone level just before ACTH stimulation)

€: insulin blood levels in 75 gm OGTT calculated with the trapezoid method.

Group I: HOMA Score ≤ 3,77.

Group II: HOMA Score > 3,77.

CONCLUSION: The pathogenesis and management of lean PCOS patients may be different from the obese ones. Pathogenesis of PCOS may be different in patients originating from different ethnic populations. It is difficult to draw conclusions about how this variation could contribute to infertility in this study. Further studies are needed to explore the adrenal connection of PCOS with respect to other BMI determinants like the leptin system, adiponectin or adipocytokines.

Supported by: We have not received any financial support for conducting this study.

P-858

ACARBOSE IN POLYCYSTIC OVARY SYNDROME REDUCES ARTERIAL BLOOD PRESSURE, P-SELECTIN AND IMPROVE THE LIPID PROFILE. I. A. Araujo Penna, P. R. Canella, C. S. Vieira, M. F. Silva de Sá, R. M. Reis, R. A. Ferriani. Faculty of Medicine of Ribeirão Preto, São Paulo Univ, Ribeirão Preto, Brazil; Federal Univ of Rio de Janeiro, Rio de Janeiro, Brazil.

OBJECTIVE: Polycystic ovary syndrome (PCOS) is associated with increased prevalence of cardiovascular disease (CVD). Endothelial dysfunction has been identified as an early marker of CVD and has been shown to predict future coronary artery disease, before atherosclerotic changes appear in arteries. Measurement of endothelial function might identify at-risk individuals early and be a useful means of assessing response to treatment aimed at reducing long-term morbidity and/or mortality from CVD. Acarbose, an α-Glucosidase inhibitor, promotes a reduction of insulin secretion on PCOS patients. The present study assessed the effects of low-dose acarbose on arterial blood pressure, lipid profile and plasmatic soluble p-selectin, a biochemical marker of endothelial activity, on obese patients with PCOS.

DESIGN: Prospective randomized double-blind study

MATERIALS AND METHODS: A double-blind placebo-controlled study was conducted on 30 obese hyperinsulinemic women with PCOS treated with 150 mg/day acarbose or placebo for 6 months. The inclusion criteria were: menstrual disorders (6 menstruations/ 12 months), clinical or laboratory hyperandrogenism, body mass index (BMI) (weight/height2) of 30-40 kg/m2, and insulin resistance. The patients were assigned by computed randomization in two groups of 15 patients each respectively taking 50 mg acarbose or 50 mg placebo three times a day for 6 months. The patients were submitted to clinical and anthropometric evaluation before and after treatment. The following laboratory measurements were performed before and after treatment: Total Cholesterol, vldl-cholesterol, ldl-cholesterol, hdl-cholesterol, triglycerides and P-selectin. The Bayesian methodology using non-informative Prioris was used for statistical analysis.

RESULTS: The patients in the acarbose group showed a reduction of BMI (35.87 $\pm$ 2.60 kg/m2 vs 33.10 $\pm$ 2.94 kg/m2) and an increased chance of menstrual regularity. Comparing the values pre and post treatment, respectively in acarbose and placebo groups, soluble p-selectin ranged from 99.3$\pm$10.0 to 91.3$\pm$9.6 ng/ml (CI95 -9.57 to -6.36) and from 97.6$\pm$8.8 to 99.4$\pm$8.4 ng/ml (CI95 0.29 to 3.42); diastolic arterial pressure ranged from 86.2$\pm$8.0 to 78.1$\pm$7.5 mmHg (CI95 -13.01 to -3.22) and from 84.3$\pm$11.1 to 85.4$\pm$9.3 mmHg (CI95-3.53 to 5.61); systolic arterial pressure ranged from 121.5$\pm$11.4 to 113.1$\pm$9.5 mmHg (CI95 -15.03 to -1.87) and from 126.4$\pm$9.3 to 127.9$\pm$8.0 mmHg (CI95 -4.63 to 7.56); triglycerides ranged from 155.10$\pm$81.70 to 136.20$\pm$83.40 mg/dL (CI95-34,65 to -2,83) and from 108.00$\pm$41.60 to 116.00$\pm$40.70 mg/dL (CI95-4,78 to 20,67); vldl-cholesterol ranged from 31.31$\pm$15.56 to 26.85$\pm$16.55 mg/dL (CI95 -8.9 to -0.10) and from 21.07$\pm$8.23 to 22.86$\pm$8.14 mg/dL (CI95-2.27 to 5.94).

CONCLUSION: A low dose of acarbose administered to obese patients with PCOS promotes a reduction in BMI with decrease of the blood arterial pressure; improve the lipid profile and a significant reduction of p-selectin, a marker of endothelial activity. These may have implications in prevention of cardiovascular disease in patients with PCOS.

Supported by: None

P-859

EFFECT OF PIOGLITAZONE ON OVULATION AND HORMONAL PARAMETERS IN WOMEN WITH POLYCYSTIC OVARY SYNDROME. R. S. Lucidi, R. Berria, C. A. Witz, C. A. Easton, R. A. Defronzo, R. G. Brzyski. Tripler Army Medical Center, Honolulu, HI; MetroHealth Medical Center, Cleveland, OH; Univ. of Texas HSC at San Antonio, San Antonio, TX.

OBJECTIVE: Women with PCOS face varying degrees of hirsuitism, obesity, irregular menses, and infertility. Insulin resistance and the resultant hyperinsulinemia are key features in the pathogenesis of PCOS (1-3). Insulin sensitizers have been shown to regulate menstrual cycles and improve rates of ovulation. Metformin (4,5) and troglitazone (6) are the agents that have been most extensively studied. However, troglitazone has been removed from the market due to hepatic toxicity. Pioglitazone, a thiazolidinedione in the same class as troglitazone, has also been demonstrated to improve metabolic and androgen parameters and menstrual frequency in PCOS(7,8). However, the effect of pioglitazone on ovarian function and ovulation has not been evaluated. The aim of this study was to confirm the effect of pioglitazone on metabolic and androgen parameters and to assess its effect on ovarian morphology and ovulatory frequency.

DESIGN: Prospective observational study.

MATERIALS AND METHODS: Twenty five non-pregnant women, age 18 to 39 years, with established PCOS by the 1990 NIH Criteria were treated with pioglitazone 45mg/day for four months. Measurements of hormonal and metabolic parameters were obtained prior to and following treatment. Insulin resistance was determined by hyperinsulinemic-euglycemic clamp prior to and following treatment. Subjects had weekly ultrasounds and serum progesterone measurements to assess ovarian morphology, follicular development and ovulation. Ovulation was defined as documented follicular development and collapse with serum progesterone greater than 3 ng/ml with subsequent menses. Subjects were instructed to use nonhormonal methods of contraception