POST LOAD INSULIN VS. FASTING LEVELS IN PREDICTION OF TYPE 2 DIABETES IN WOMEN WITH PCOS

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Introduction and the aim of this study

Women with polycystic ovary syndrome (PCOS) are at increased risk of developing insulin resistance (IR) and T2DM. In this study, we attempted to detect IR parameters that could be the best predictor T2DM in PCOS comparing to controls.

Description of methods/design:

- In 130 women with PCOS (BMI=29.7±0.66 kg/m^2; age: 25.6±0.59 yrs) and
- 41 controls (age and BMI matched) (BMI=28.5±1.35kg/m^2; age: 26.5±0.89yrs).
- OGTT and IVGTT (minimal model analyses) were performed.
- All women has normal fasting glucose, but 16 PCOS women had post load glucose level (120min) over 7,8mmol/l.

Results:

After excluding PCOS women with IGT,
there was no difference between fasting glucose, but glucose at 2hr (OGTT) were still higher in PCOS (P<0.05).
Fasting insulin was significantly higher in PCOS
(PCOS vs. control)(17.02±1.07 vs.12.54±1.72) as well as
Insulin at 120min of OGTT (86.85±7.18vs.56.31±10.57).
There was no statistically significant difference between areas under insulin curve between 2 groups
(PCOS vs. control)(10417.12±733.14 vs.8098.36±1098.2).
Minimal model confirmed no difference in IV glucose tolerance (Kg) between PCOS and controls and in acute insulin response (AIR).
Si parameter of insulin sensitivity was significantly lower in PCOS
(PCOS vs. control)((2.46±0.18vs.3.59±0.39).
Disposition index (DI) were significantly higher in controls
(PCOS vs. control)((166.57±13.9vs.220.89±33.47).

Additional analyses of 2 PCOS subgroups with normal (NGT) and impaired glucose tolerance (IGT) showed:
significant lower Si in IGT subgroup, not different AIR, lower DI.
The best correlation with Si (from minimal model) showed OGIS (0.490, p< 0.01) (glucose 0,90 i 120 min and insulin at 0 and 90 min), weaker correlation showed HOMA index (0.271; p<0.01) and fasting insulin (-0.247, p<0.01).

Conclusion

These insulin sensitivity indexes could be potentially used to identify subgroups of insulin resistant PCOS women with increased risk of T2DM. Our result suggests that indexes included basal and post load glucose and insulin constitute a more sensitive tool for screening metabolic abnormalities in PCOS.

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