

GLUCOSE LEVEL AFTER STANDARD ORAL GLUCOSE TOLERANCE TEST AS A POTENTIAL MARKER FOR THE DEVELOPMENT OF TYPE 2 DIABETES IN WOMEN WITH POLYCYSTIC OVARY SYNDROME

Bozic Antic I¹, Bjekic-Macut J², Ilic D¹, Vojnovic Milutinovic D³, Popovic B¹, Bogavac T¹, Isailovic T¹, Elezovic V¹, Ognjanovic S¹, Stanojlovic O⁴, Macut D¹

¹Clinic for Endocrinology, Diabetes and Metabolic Diseases, CCS, ²CHC Bezanijska kosa,

³Institute for Biological Investigations „Siniša Stanković“, University of Belgrade, ⁴Institute of Physiology, Faculty of Medicine, University of Belgrade, Serbia, University of Belgrade, Belgrade, Serbia

Introduction

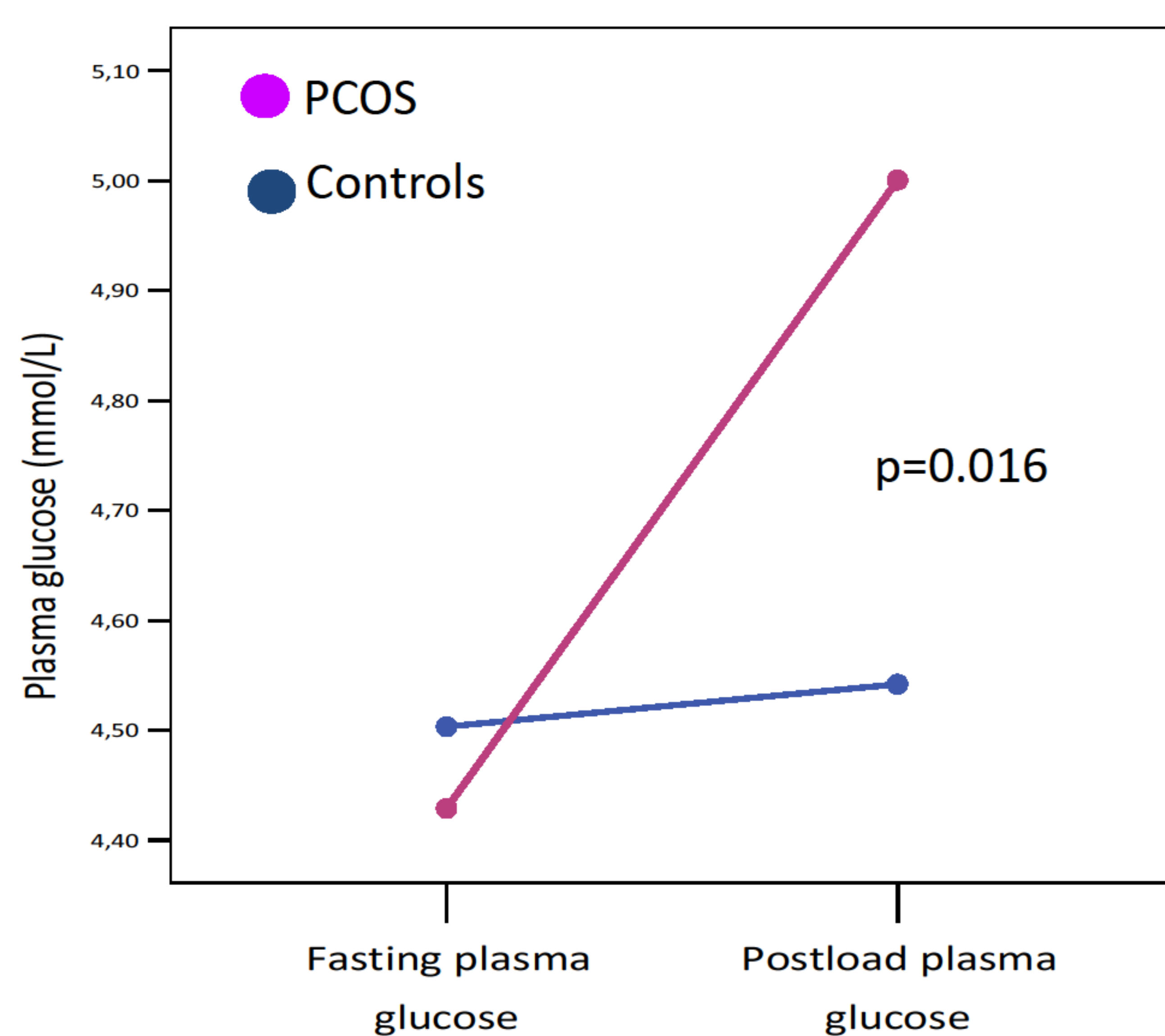
It has been shown that subjects with normal fasting glucose (NFG) and normal glucose tolerance (NGT), whose plasma glucose concentration does not return to their fasting plasma glucose (FPG) level within 2 hours following standard oral glucose tolerance test (OGTT), have higher risk of progression into type 2 diabetes (T2D) than NFG/NGT subjects whose glucose returns to FPG level after OGTT. Although the development of T2D during the life of woman with polycystic ovary syndrome (PCOS) is nowadays assumed to be higher than previously thought, the exact reason for that is still unknown.

Methods

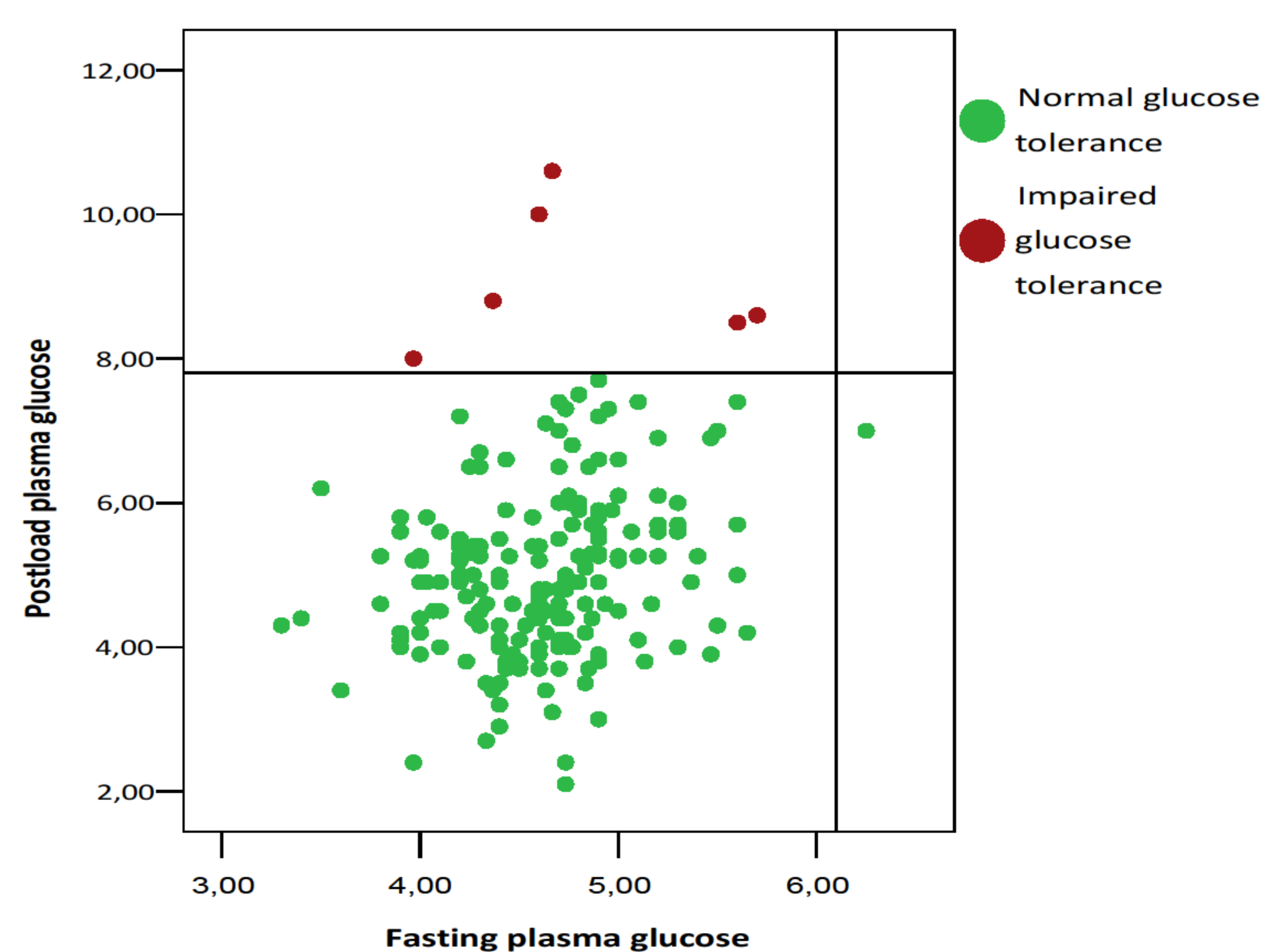
We evaluated 193 non-obese PCOS women (body mass index, BMI: 22.47±3.33 kg/m²; age: 24.93±4.59 years) diagnosed using ESHRE/ASRM criteria and 53 healthy non-obese women in control group (BMI: 24.05±3.29 kg/m²; age: 30.21±5.57 years). In follicular phase of menstrual cycle 2-hour OGTT with 75gr of glucose was performed in all subjects. IFG, IGT and T2D were defined according to International Federation for Diabetes (IFD) criteria. All analysis were adjusted for BMI and age.

Results

None of the PCOS subjects had T2D and none of the controls had either IFG or IGT. In PCOS group, IFG was diagnosed in 3/193 (1.6%) and IGT in 6/193 (3.1%). All PCOS women with IFG had NGT, while all PCOS subjects with IGT had NFG. When only NGT/NFG subjects were analyzed (184 PCOS and 53 Controls), PCOS had higher prevalence of higher postload glucose than FPG in comparison to Controls (67% vs. 50%, respectively p=0.045).



Graph 1. Plasma glucose before and after 2h-OGTT



Graph 2. Relationship of IFG and IGT in women with PCOS (all women with IGT had NFG); vertical line represents cut off value for IFG-6,1mmol/L and horizontal line represents cut off for IGT-7.8mmol/L)

Conclusion

Higher postload glucose level than fasting plasma glucose level could be a useful marker of risk for the development of T2D in women with PCOS.