Introduction: The prevalence of type 2 diabetes has drastically increased worldwide. Progression from normal glucose tolerance to type 2 diabetes in adults involves an intermediate stage of impaired glucose tolerance, known as prediabetes. This stage has been extensively studied in adults, but studies in children are rare. The aim of the present study was 1) to compare the frequency of cardiovascular risk factors in obese prediabetic and non-diabetic children and 2) analyse the relationship between impaired glucose tolerance and other cardiovascular risk factors in obese prediabetic children.

Methods: Subjects included 75 obese children and adolescents with normal glucose and 14 with impaired glucose tolerance, as assessed by a 2 h glucose tolerance test. Subjects were recruited from the Maria Pia Pediatric Hospital. Anthropometric measures, BMI, blood pressure, insulin, total and HDL cholesterol, triglycerides, levels of physical activity and maturation were measured according to pre-established international procedures. All subjects were taking no medications that can alter glucose metabolism and to be otherwise healthy. Written informed consents were obtained from the parents.

Results: Prediabetic children and adolescent have higher mean values for weight, height ($p<0.05$) and tend to present higher mean values for all cardiovascular risk factors. They also tend to be more maturated and to present lower levels of physical activity, when comparing to normal ones. There was a linear relationship between glucose levels and weight ($B=0.086\ p<0.05$) and height ($B=0.145\ p<0.05$) for prediabetic subjects.

Conclusion: Prediabetic subjects presented higher levels for all cardiovascular risk factors when comparing to normal ones and there is a relationship between abnormal glucose levels, weight and height in this sample of prediabetic children and adolescents.

Keywords: Cardiovascular, Children, Diabetes