the other two groups (Table 4). Acanthosis nigricans, a dermatological finding, was observed in 31% of offspring of BDP while none of the subjects in the other two groups had this finding (Table 1).

**DISCUSSION**

Relatively few studies have been carried out in children regarding the impact of FH of T2DM on carbohydrate and lipid metabolism.\textsuperscript{11,20,21} The present study in male offspring of diabetic parents (ODP and BDP) suggests the presence of certain risk factors of the disease at an early age. Some of the previous reports showing that offspring (both sexes) of diabetic mothers are overweight\textsuperscript{27} are consistent with our findings, demonstrating that 35% male offspring of ODP and 45% of BDP are overweight. In the present study, higher BMI in offspring of BDP and ODP compared to the control group may be due to relatively higher levels of insulin. Our clinical observations emphasize the genetic factors underlying a predisposition to metabolic dysfunction. Recently, a common variant in the FTO (fat, mass and obesity) gene has been identified that predisposes to diabetes through an effect on the BMI.\textsuperscript{28} It was shown that the risk of high BMI and hence of a predisposition to diabetes was additive and that individuals homozygous for this particular SNP (allele A) had a higher BMI as compared to heterozygote individuals.

Approximately 36% of the offspring of diabetic parents included in the present study had impaired fasting glucose.\textsuperscript{22} A moderately high glycemia may therefore serve as a preclinical sign of disturbed glucose metabolism and insulin resistance.

In the present study, mean serum insulin levels were higher in offspring of BDP as compared to those of ODP, and a significantly positive correlation (Table 4) between age and serum concentrations of insulin was found only in offspring of BDP, presumably indicating a progressive increase in insulin levels with age. Also, mean serum C-peptide levels were discernibly but not significantly higher in the BDP group than those of the ODP group. In contrast to our findings, a previous study in prepubertal offspring with FH of T2DM failed to demonstrate a significant difference in the fasting glucose and insulin levels and in insulin resistance, when compared with controls.\textsuperscript{20}

Hyperinsulinemia in the offspring with BDP is consistent with previous findings, indicating that hyperinsulinemia in the offspring with a FH of T2DM may be associated with obesity.\textsuperscript{5,29} However, hyperinsulinemia may also be independently associated with a family history of T2DM, irrespective of obesity.\textsuperscript{17,18} Insulin resistance estimated by HOMA, which has been shown to correlate well with clamp methods,\textsuperscript{30} was significantly higher in offspring of diabetic parents than in offspring of non-diabetic parents. It has been suggested that increased ferritin concentration in offspring of T2DM parents may further contribute to hepatic insulin resistance in these subjects.\textsuperscript{5} In our study, a positive correlation between age and HOMA-IR (Table 4) was found in the offspring of BDP, but no such correlation was observed in NDP and ODP study groups, presumably due to progressive development of hepatic insulin resistance in these subjects.

A large number of subjects in our study with BDP had acanthosis nigricans (Table 1), which has been shown to be associated with hyperinsulinemia and IR in previous studies.\textsuperscript{31,32} In a study conducted in New Mexico, acanthosis nigricans was detected in 21% of children with a FH of T2DM and the prevalence of acanthosis nigricans was shown to be even higher in children with a higher BMI in the same study.\textsuperscript{33}