**Analytical Determinations**

All biochemical parameters were determined in duplicate using standard procedures. The diabetic condition or otherwise of parents was reconfirmed by determining FBG levels. Parents who had FBG ≥6.9 mmol/L were labeled as diabetic. Serum glucose levels were determined by the glucose oxidase method using a commercial reagent kit (RANDOX Laboratories, Crumlin, UK). Fasting lipid profile was obtained by measuring serum triglycerides (TG) by the GPO-PAP method (RANDOX), HDL- and LDL-cholesterol by a direct quantitative method (Roche Diagnostics GmbH, Mannheim, Germany) and cholesterol by an enzymatic method (RANDOX). The estimations were made with a HumaStar 180 chemistry analyzer (Human, Wiesbaden, Germany). HbA1-c was estimated by affinity liquid chromatography with a D-SI Glycomat (Provalis Diagnostics, Deeside, UK).

**Hormone Assays**

Serum insulin and leptin concentrations were determined by ELISA using commercial kits (insulin: Monobind Inc, Lake Forest, CA, USA; leptin: Diagnostic System Laboratories, Inc, Webster, TX, USA) with an automated EIA analyzer (Bio-Rad Laboratories, Hercules, CA, USA). Peripheral C-peptide levels were measured with a specific immunoradiometric assay (IRMA; Immunotech a.s., Prague, Czech Republic) using an automatic gamma counter (Perkin Elmer, Turku, Finland).

**Insulin resistance index**

Fasting glucose and fasting insulin levels were used to measure homeostasis model assessment of insulin resistance (HOMA-IR) index by the formula:

\[
\text{HOMA-IR} = \frac{\text{Fasting insulin (µIU/ml)} \times \text{Fasting glucose (mmol/l)}}{22.5.}
\]

**Statistical Analysis**

The significance of differences among the three groups was analyzed by one-way ANOVA followed by Scheffe’s multiple comparisons. The Pearson test was used to calculate correlation between variables of interest. P value <0.05 was considered statistically significant. All calculations were carried out with the SPSS version 12 (SPSS, Inc, Chicago, IL, USA).

**RESULTS**

**Body Weight, BMI and Blood Pressure**

The body weight (BW) of offspring of BDP was significantly higher (P=0.015) than those of NDP but there was no significant difference in the BW of offspring of ODP and the control (NDP) group. However, the mean BMI of both groups of offspring of diabetic parents was significantly greater than that of offspring of NDP (Tables 1 and 3). The proportion of overweight offspring was 4%, 34% and 45% in NDP, ODP and BDP groups, respectively. Although no significant difference was observed in the systolic BP of offspring of ODP and NDP, the mean systolic BP was slightly but significantly higher in offspring of BDP as compared to that of the ODP (P=0.002) and NDP (P=0.034) (Tables 1 and 3). In 21% of the offspring of BDP the systolic and diastolic BP were above the normal range of 130/80 mm Hg.

**Glucose, 2-h OGTT and Hb A1-c**

Although the mean fasting glucose levels and the following OGTT were in the normal range of subjects, the mean FBG levels were significantly higher in the ODP and BDP offspring than in the NDP group (Tables 2 and 3). Blood glucose concentrations following fasting were >5.6 and <6.9 mmol/L in 2% of offspring of NDP, 34% of ODP and 37% of BDP, respectively. Blood glucose levels at 2-h following oral glucose administration (2h-OGTT) were also significantly higher (P=0.001) in offspring of diabetic parents compared to those of NDP (Tables 2 and 3). In the present study, 24% offspring of BDP and 20% offspring of NDP had impaired glucose tolerance.

**Table 1. Physical characteristics of offspring of non-diabetic (NDP), one diabetic (ODP) and both diabetic (BDP) parents. Data are expressed as means ± SEM**

<table>
<thead>
<tr>
<th></th>
<th>NDP (n=50)</th>
<th>ODP (n=50)</th>
<th>BDP (n=30)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Body weight (kg)</td>
<td>62.1±1.7</td>
<td>66.8±2.7</td>
<td>74.3±4.3\textsuperscript{a}</td>
</tr>
<tr>
<td>BMI (kg/m\textsuperscript{2})</td>
<td>21.4±0.5</td>
<td>24.7±0.9\textsuperscript{a}</td>
<td>27.4±1.7\textsuperscript{a}</td>
</tr>
<tr>
<td>Systolic BP (mmHg)</td>
<td>110.4±1.2</td>
<td>107.4±1.6</td>
<td>118.6±3.8\textsuperscript{ab}</td>
</tr>
<tr>
<td>Diastolic BP (mmHg)</td>
<td>71.8±1.3</td>
<td>70.1±1.3</td>
<td>73.5±2.0</td>
</tr>
<tr>
<td>Acanthosis nigricans (%)</td>
<td>0</td>
<td>0</td>
<td>31</td>
</tr>
</tbody>
</table>

\textsuperscript{ab}Statistically significant difference (P<0.05; Scheffe’s multiple comparison test): \textsuperscript{a}: Compared to NDP group, \textsuperscript{b}: Compared to ODP group.