Amenorrhoeic Nigra areas (AN) is a common disease that affects 9.1% of women with only 2% of non-PKD women. The prevalence of AN is 4.2% among women with PCOD and 16.8% of those with PCOD and AN

Introduction

Amenorrhoeic Nigra areas (AN) could be a warning sign for the presence of PCOD. A correlation between PCOD and amenorrhoeic Nigra areas has been observed. These findings suggest that it is possible to use amenorrhoeic Nigra areas as a predictor of PCOD. The results showed that 57.9% of women with AN and PCOD showed signs of hyperandrogenism with not a single case in the control group. In the same study, 20% of women with AN showed signs of PCOD compared to 5% in the control group. 85.7% of the patients with AN showed signs of PCOD compared to 19% in the control group. 42.3% of women with PCOD showed signs of hyperandrogenism with not a single case in the control group. The study was done on 15 females with the presence of AN and PCOD. The study was done on 15 females with the presence of AN and PCOD. The results showed that AN and PCOD are associated with the presence of hyperandrogenism and the presence of polycystic ovarian disease. The results were obtained from 20 control females with the presence of PCOD and AN. The study was done on 15 females at different times during the menstrual cycle. The results showed that AN and PCOD are associated with the presence of hyperandrogenism and the presence of polycystic ovarian disease.

ABSTRACT

Mohamed Abdel-Hady and Fatma Shalaby

OVARIAN DISORDER

HYPER-INSULINEMIA AND POLYCYSTIC ACNEMIOSIS NIGRAE: ASSOCIATION WITH

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The aim of this work was to evaluate the association between acne, hyper-androgenemia, obesity, and the presence of PCOD.

Subjects and Methods
This work has been done during the period from Jan. 1996 till Sept. 1997 at the ultrasound unit of the 6 October Insurance Hospital. The subjects of this study included 35 females, all of them were having acne, hyper-androgenemia, obesity, and the presence of PCOD. For every subject, measuring blood glucose fasting, and 1-h postprandial and HbA1c was done, as well as the determination of total and free testosterone, total and free estradiol, and prolactin. The Insulin Glucose Index (IGI), which is more than 3, the patient was considered insulin resistant.
Acne \textit{Nigeriana}

To evaluate the presence of polycystic ovarian disease, patients with enlarged ovaries with multiple subcapsular follicles giving the ovary the picture of cart-wheel appearance were considered positive for polycystic ovarian disease (PCOD).

Out of the 35 patients with PCOD, 20 patients had hyperinsulinemia (57.14%) and not a single case of hyperandrogenemia was found in the control group. There were also 15 AN patients having PCOD, while only one case (4.28%) was found in the control group. Thirty patients were overweight (85.71%), while only 4 patients in the control group were obese. As for the hyperandrogenemia, 26 patients in the AN have elevated (T) levels (74.28%), while not a single patient in the control group showed signs of elevated (T) level to suggest hyperandrogenemia.

The results were subjected to statistical analysis using the Statistical Package for the Social Sciences (SPSS) V 5.0 program.

**RESULTS**

In this work, 35 patients with benign Acne \textit{Nigeriana} (AN), and 20 controls were evaluated as regards the presence of PCOD, hyperinsulinemia.

<table>
<thead>
<tr>
<th>Table 1: Represents the number and % of positive cases of every factor studied in the control and patients groups</th>
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<tbody>
<tr>
<td><strong>Patients with positive findings of Hyperandrogenemia</strong></td>
</tr>
<tr>
<td>No. of cases</td>
</tr>
<tr>
<td>---------------------------------------------------------------</td>
</tr>
<tr>
<td>Patients with positive findings of PCOD</td>
</tr>
<tr>
<td>Patients with positive findings of Hyperandrogenemia</td>
</tr>
</tbody>
</table>

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**Table 2:** Relationship between PCOD, obesity, and hyperandrogenemia in the patients with acanthosis nigricans with or without hyperinsulinemia

<table>
<thead>
<tr>
<th></th>
<th>AN</th>
<th>PCOD</th>
<th>Obesity</th>
<th>Hyperandrogenemia</th>
</tr>
</thead>
<tbody>
<tr>
<td>+ve</td>
<td>15</td>
<td>65%</td>
<td>7 (35%)</td>
<td>3 (15%)</td>
</tr>
<tr>
<td>-ve</td>
<td>20</td>
<td>13.3%</td>
<td>3 (15%)</td>
<td>11 (55%)</td>
</tr>
</tbody>
</table>

Evaluation of the 20 patients with AN and PCOD (Table 2) showed that 13 patients had PCOD (65%), 17 patients were overweight (85%), and 16 patients had hyperandrogenemia (80%).

**DISCUSSION**

The association of AN and insulin resistance is generally accepted. Barbieri et al. (11) considered AN as a dermatological manifestation of severe cases of insulin resistance. The presence of AN in patients with PCOD and obesity is a necessary but not the only factor leading to the development of AN in patients with PCOD (12).

In our study, 20 patients (57.14%) out of 35 patients with AN were having positive hypoglycemia. These results are comparable to that of Take et al. (13), who have evaluated insulin resistance in 25 patients with PCOD. The authors found that patients with insulin resistance and AN had a decreased hypoglycemic response to exogenous insulin.

Matsuda et al. (14) evaluated 25 patients with PCOD and found that patients with AN and PCOD presented a significantly greater mean glucose response area irrespective of the presence of obesity. They concluded that patients with AN had a much higher percentage of glucose production than non-diabetic controls.
CONCLUSION

Group 1 patients were found in our small study to have higher PCD scores than patients with AN, but not higher than normal controls. The association between PCD and AN was also significant in Group 2 patients. These findings suggest that the association between PCD and AN may be due to shared underlying factors, such as eating disorders or other psychiatric conditions.

The possibility of genetic factors in the association between PCD and AN cannot be ruled out. Further research is needed to better understand the underlying mechanisms and to identify potential targets for intervention.

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References

