ABSTRACT
Objectives: The study aims to assess the frequency of impaired glucose tolerance (IGT) in women with polycystic ovarian disease (PCOD).

Design Descriptive study.

Place & Duration
Department of Obstetrics and Gynaecology, Unit-II, Services Hospital, Lahore, for a period of one year, from 01.07.2001 - 30.06.2002

Patients And Methods
The study included 50 patients of polycystic ovarian disease, diagnosed by ultrasonography. These patients were advised 75g oral glucose tolerance test.

Results
The frequency of impaired glucose tolerance in diagnosed patients of polycystic ovarian disease was 20%. PCOD patients with abnormalities in glucose metabolism had a greater body mass index, higher fasting glucose and 2 hours post-load glucose levels than those with normal glucose tolerance.

Conclusion
Frequency of impaired glucose tolerance in diagnosed patients of polycystic ovarian disease is 20%.

KEY WORDS: Polycystic ovarian disease Insulin resistance, Impaired glucose tolerance

INTRODUCTION
Stein and Leventhal originally described polycystic ovarian disease, in 1905 as a syndrome comprising of menstrual irregularities, hirsutism and obesity in association with enlarged polycystic ovaries. In the past decade it became apparent that the syndrome is also associated with metabolic disturbances.

Burghen et al' first reported in 1980 that women with PCOD have higher basal and glucose stimulated insulin levels than weight matched controls. Subsequently a number of studies worldwide demonstrated that hyperinsulinemia and insulin resistance are common features of a large number of patients affected by PCOD, eventually causing glucose intolerance along with problems we commonly see in adult onset diabetes²³. In addition to hyperinsulinemia and insulin resistance, altered first phase insulin secretion impaired glucose tolerance, dyslipidemia, hypertension and impaired fibrinolysis have also been described in PCOD⁴. These metabolic disturbances, place women with PCOD at higher risk of the development of cardiovascular disease and diabetes. There is evidence of association of IGT and NIDDM in females with PCOD, but prospective long term studies of glucose metabolism in large groups with PCOD are lacking⁵ CentOS.

PATIENTS AND METHODS
The study was carried out in the outpatient department of Obstetrics and Gynaecology, Unit-II, Postgraduate
Frequency Of Impaired Glucose Tolerance In Polycystic Ovarian Disease

Medical Institute/Services Hospital, Lahore. from 01.07.2001 to 30.06.2002. The study included 50 patients of polycystic ovarian disease. Patients with polycystic ovarian disease, who were known diabetics taking oral hypoglycemics and asymptomatic patients with PCOD were excluded.

All patients selected were advised 75g oral glucose tolerance test. Those patients having whole blood sugar fasting value < 6.7mmol/L (120mg) and two hours whole blood glucose value 6.7-9.9mmol/L (120-180mg) were labeled as having impaired glucose tolerance test.

Computer programme SPSS version 10.0 was used for data analysis. Data entry sheet was created in SPSS and after feeding all variables data was analyzed to determine the frequency of impaired glucose tolerance in patients having polycystic ovarian disease.

RESULTS

Body mass index was calculated in all the patients irrespective of risk factors. Out of these, 32% had BMI more than 30 Kg/m² (Table 1). 34 patients (68%) had family history of diabetes. The frequency of impaired glucose tolerance in this study was 20%, while 3 (6%) were diagnosed as having diabetes for the first time. Out of ten patients who had glucose intolerance, eight had a BMI greater than or equal to 30Kg/m². Out of ten patients who had glucose intolerance, 9 patients (90%) had NIDDM in their parents or siblings.

<table>
<thead>
<tr>
<th>BMI (Kg/cm²)</th>
<th>Number</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>15-25</td>
<td>3</td>
<td>6.0</td>
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<tr>
<td>26-29</td>
<td>31</td>
<td>62.0</td>
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<tr>
<td>≥ 30</td>
<td>16</td>
<td>32.0</td>
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DISCUSSION

Results regarding frequency of impaired glucose tolerance in PCOD patients coincided with studies conducted in Ramathibodi Hospital Mahidol University, Bangkok, which was done on Asian women, which showed IGT in 20% women and Queen Elizabeth Hospital, South Australia, which showed a prevalence of impaired glucose tolerance of 19.4% in PCOD women. There are certain risk factors associated with IGT in PCOD women. These include family history of diabetes mellitus and obesity determined by BMI. BMI is a significant predictor of adverse change in glycaemic control.

In this study 10 (20%) patients of 50 patients were found to have IGT after OGTT 8 (80%) of these 10 glucose intolerant women had BMI of > 30 Kg/m². This showed obesity is a significant risk factor for impaired glucose metabolism as it does in other studies showing substantial rate of conversion from normoglycaemia to IGT in PCOD confirming our observations.

Another observation in the current study was that women with IGT had higher prevalence of first-degree relatives with diabetes. 9 out of 10 patients had diabetes in one of the parent or sibling. Similar results were obtained in a study conducted in USA where patients with IGT had higher BMI, and 2.6 fold, higher prevalence of first-degree relatives with NIDDM. Women with PCOD are high-risk population for complications like IGT, NIDDM, lipid abnormalities in pregnancy and later adult life. Women with PCOD particularly obese and with diabetes in first degree relatives should have periodic OGTT for early detection of deterioration.

CONCLUSION

- The frequency of impaired glucose tolerance in diagnosed patients of polycystic ovarian disease was 20%.
- The PCOD patients with abnormalities in glucose metabolism had a greater body mass index, higher fasting glucose and 2 hours post-load glucose levels than those with normal glucose tolerance
- Prevalence of glucose intolerance increased with BMI in PCO patients.

REFERENCES


9. Ehrmann DA, Barnes RB, Rosenfield RL, Cavaghan MK, Imperial J. Prevalence of impaired glucose tolerance and diabetes in women with polycystic ovary syndrome.