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Research Article

MANAGEMENT OF GESTATIONAL DIABETESMELLITUS: A PROSPECTIVE STUDY

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ABSTRACT

One of the most common health problems of pregnancy was gestational diabetes mellitus. Gestational diabetes usually has no symptoms that is why all pregnant women have a glucose screening test between 24 and 28 weeks (second trimester) .Many women who develop gestational diabetes does not have any risk factors .This prospective observational study was conducted in the department of Obstetrics and Gynaecology AIMS, Kochi. The objective of this study was to evaluate the management pattern of gestational diabetes based upon age, weight, route of administration and based upon the therapy used. The medications were categorised on the basis of therapy like mono therapy and combinational therapy. Around 200 patients medical records were collected. The age group of 25-29(39.5%) were having highest rate of GDM and the least is falling in the group of 40-44(2.5%) .Among the sample size 95% (n=190)of GDM was diagnosed in the second trimester and 5% (n=10) in the third trimester .It is found that 85%(n=170) of the patients were on monotherapy , 10% (n=20)of the patients were on combination therapy and 5%(n=10) on diet control . There seems to be a link between the tendency to have gestational diabetes and type2 diabetes. Therefore a need for patient counselling is essential to reduce the GDM patients in future.

Keywords: Gestational diabetes mellitus (GDM), Monotherapy.

INTRODUCTION

Gestational diabetes mellitus (GDM) is defined as any degree of glucose intolerance with onset or first recognition during pregnancy. GDM is caused when insulin receptors do not function properly, due to pregnancy-related factors such as the presence of human placental lactogen that interferes with susceptible insulin receptors. GDM is diagnosed when higher than normal blood glucose levels first appear during pregnancy.Around 3-8% of pregnant women will develop GDM around 24-28thweek (second trimester) of pregnancy. It is caused due to pancreatic function is insufficient to overcome the insulin resistance associated with the pregnant stage. Among the main consequences are increased the risk of preeclampsia, macrosomia and caesarean delivery. Most women with gestational diabetes do not remain diabetic after the delivery but they have higher risk for getting it again during a future pregnancy and for develop diabetes later in life.The risk of these outcomes increase as maternal fasting plasma glucose levels increased above 75 mg/dL(4.2mmol/L) and as the 1 hour and 2 hour oral glucose tolerance tests(GTT) value increased. Over weight and obese women weight loss before pregnancy can reduce the risk of developing GDM[1-4]. To achieving and managing the glycaemic control of women during pregnancy generally requires a team approach to provide the necessary expertise like information on diet control and moderate exercise some needs hypoglycaemic agents along with insulin.There are two pharmacological options in GDM management;Insulin (and some

insulin analogue)and oral hypoglycaemic agent. IntheUnitedStates, suchoral hypoglycaemic agents have not been specifically approved for the treatment for GDM by the US Food and drug administration (FDA). Insulin therapy is generally started when glucose level exceeded 105 mg/dL(5.8mmol/L) in the fasting state and two hour after meals 120mg/dL(6.7mmol/L)[5].The present prospective study on Management of Gestational Diabetes Mellitus was undertaken in department of Obstetrics and Gynaecology in AIMS Cochin ,Kerala .Through this study helps to improve the glycaemic control by providing clinical pharmacist educating diet control apart from medications and also decrease the rate of GDM risks[6-10]

MATERIALS AND METHODS

Study design: prospective observational study to evaluate the management pattern of gestational diabetes based upon age,weight, route of administration and based upon the therapy used.

Study site: The study was carried out at Amrita institute of medical science and research centre, Kochi for data collection.

Study setting: The study was conducted in Department of Obstetrics and Gynaecology in AIMS, Kochi.

Source of data: All necessary and relaventdatas were collected from the medical report department (MRD).

Collection of data: Using data collection forms (patient profile form it included patient demography, medication information, lab investigations etc.).

Duration of the study: Around one year (1st May 2013 to 1st May 2014).

Inclusion criteria: Gestational diabetic mellitus patients (First pregnancy),Age above 18 years

Statistical data analysis: For statistical analysis used Microsoft ExcelWindows2009.

RESULTS

During study around 200 patients diagnosed with GDM were,95% (n=190)was diagnosed in the second trimester and 5% (n=10) in the third trimester.Thepercentage and corresponding number of patients whose age falls in different groups is shown in the table 1. Out of 200 GDM patients falls in the age group of 25-29(39.5%)and the least is falling in the group of 40-44(2.5%).

Figure 1 shows the details of patients acquired with different types of medications, among them 79% (n=158) patients treated with insulin preparation, 6 % (n=12) were treated with oral hypoglycaemic agent, 10 % (n=20) patients treated with both insulin and oral hypoglycaemic agent and 5% (n=10) patients were on diet control.

Table 1: Age distribution of the GDM patients

Age in years	Number of patients	Percentage(%)
20-24	40	20
25-29	79	39.5
30-34	54	27
35-39	22	11
40-44	5	2.5

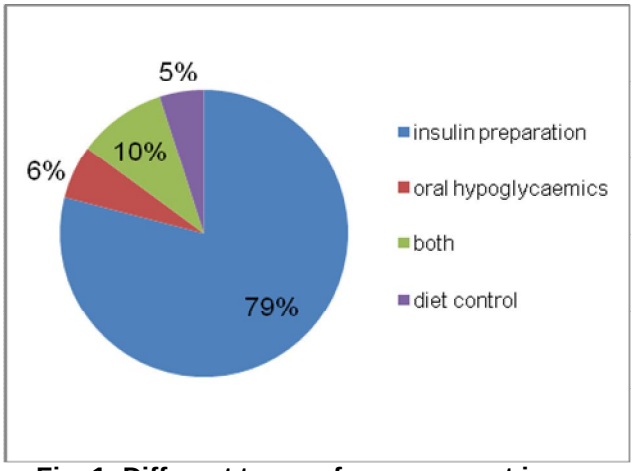

Fig. 1: Different types of management in glycemic control

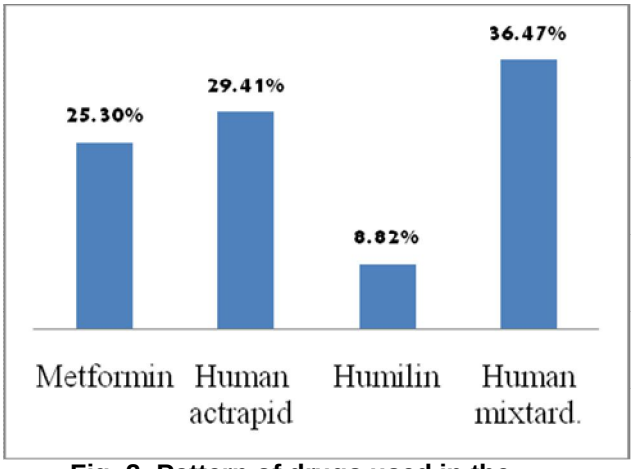

Fig. 2: Pattern of drugs used in the monotherapy of GDM

Out of 200 patients 79% (n= 170) were treated with monotherapy.Figure2, shows the percentage details of drugs using pattern in monotherpy of GDM. 150 were treated with monotherapy, among them25.30 %(n=43) were treated with metformin. 29.41 %(n=50) patients were treated with human actrapid , 8.82%(n=15) were treated with humilin and 36.47%(n=62) patients were on Human mixtard.

DISCUSSION

Nowadays, gestational diabetes remains a major issue in pregnancy.In early pregnancy a mothers diabetes can result in birth defect and an increased rate of miscarriage .Due to proper management and care there is no birth defect and miscarriage found in the study sample. The risk factors for developing GDM was overweight prior to becomepregnant, family history of diabetes and having too much amniotic fluid .The present study observed that GDM is prevalent in age group of 25-29 . Monotherapy appears to be more prevalent and this study revealed that Insulin preparation is preferred more than oral hypoglycaemic or any other medications. Among insulin preparation Human mixtard with human origin is most commonly used for the management. Oral hypoglycaemic are not preferred much because of its adverse effects. 25.30 % were found to be on metformin for their glycaemic control. Almost 100% GDM was ruled out in between 24 and 28 weeks (second trimester). Hence clinical pharmacists have a major role to educating the patients regarding controlling diet apart from medications and improving quality of life.

CONCLUSION

Gestational diabetes mellitus can be controlled on proper management. Due to proper management and care there is no birth defect and miscarriage for the GDM patients.Through screening at appropriate gestational age we can avoid unforgettable outcome. Insulin preparation are often costlier than oral hypoglycaemic but less with adverse effects.The future direction should focus on the earlier prediction and effective preventive measures before GDM development because care must be taken during pregnancy as it is the later of future. Therefore a need for patient counselling is essential to reduce the GDM patients in future.

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