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RESEARCH ARTICLE

COMPARISON OF SAFETY AND EFFICACY OF GLYCOMET AND INSULIN IN MANAGEMENT OF GESTATIONAL DIABETIS MELLITUS

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ABSTRACT

Aim: The study's objective is to analyze the safety and efficacy of glycomet vs insulin in the treatment of gestational diabetes mellitus. **Objective:** The objective is to compare safety and efficacy of glycogen and insulin. **Methodology:** The goal of this study is to see how safe and effective insulin and glycomet are in the monitoring for GDM patients. Baseline demographic data is gathered using patient case records. The obtained data is statistically reviewed and evaluated. The patient's medical record and laboratory reports are used to obtain all necessary information or data. **Results:** The demographics of the patients who matched the inclusion criteria were reviewed, and it was revealed that glycomet is a safer and more effective treatment for gestational diabetes mellitus. - Every pregnant woman, regardless of age or parity - A gestational age of 14 to 36 weeks - We used a total of 60 patients in this study, who were then divided evenly based on their age, indications, and gestation week, with a p value of 0.03. **Conclusion:** In summary, metformin has been proven to be safe and beneficial in the treatment of gestational diabetes mellitus in pregnant women, with no maternal or newborn problems when compared to insulin, and a low risk of caesarian sections. When compared to insulin, metformin was shown to be both safe and effective in reducing blood sugar levels. When insulin was used, there were a lot of caesarian sections. There is no danger of hyperglycemia when using metformin. When compared to insulin injections, metformin is easier for the patient to deliver because it is taken orally. In comparison to insulin, metformin is inexpensive, simple, fast, and convenient to use. Maternal and neonatal outcomes were nearly identical in both groups. However, one patient switched from metformin to insulin treatment.

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INTRODUCTION

- GDM (gestational diabetes mellitus) is a kind of glucose intolerance that first appears during pregnancy. GDM is a kind of carbohydrate intolerance that first appeared in pregnant women. GDM is a kind of diabetes mellitus that develops during the second or third trimester of pregnancy. It's critical to contrast it from pre-diagnosed type 1 and type 2 diabetes, as well as MODY (maturity onset diabetes of young) in pregnant women
- Insulin resistance occurs during pregnancy, starting in the first trimester and continuing into the third. During late pregnancy, insulin sensitivity drops by around half during late pregnancy.

Two reasons for insulin resistance are

- Maternal adiposity increases
- The action of the placenta's insulin desensitizing hormone.
- The placenta produces human chorionic somatotrophs (HCS), which binds and releases oestrogen, cortisol, and progesterone.
- Metformin was shown to be both safe and effective in reducing blood sugar levels. When insulin was used, there were a lot of caesarian sections. There is no danger of hyperglycemia when using metformin. When compared to insulin injections, metformin is easier for the patient to deliver because it is taken orally. In comparison to insulin, metformin is inexpensive, simple, fast, and convenient to use.

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MATERIAL AND METHODS

The study was carried out at the Durgabai Deshmukh hospital and research facility in Vidya Nagar, Hyderabad, in the Department of Obstetrics and Gynecology.

Study Timeline: This study was expected to be completed within the last 2-3 years.

The research design: Retrospective investigation

Sample size: A complete enumeration of all available subjects was carried out over a period of 2-3 years, resulting in a sample size of 60 people.

Statement of ethics: The study was carried out with the approval of the hospital's Scientific and Ethical Committees. Patient case report as a tool

Study criteria:

Inclusion criteria:

- Every pregnant woman, regardless of age or parity
- Between 14 and 36 weeks of pregnancy

Exclusion criteria

- Patients on steroids, calcium channel blockers, thiazides.
- Patients with diabetes mellitus.
- Patients with a gestational age of more than 36 weeks and fewer than 14 weeks..

Dose :

Glycomet: 250 mg of glycomet tablet orally OD

Insulin

Blood glucose (mg/dL)	Insulin (units)
61-150	1

151-200	3
201-250	5
251-300	8
300-350	10
351-400	12
>400	15

Data Collection: The patient case sheet would be used to collect all important and vital statistics.

STATISTICAL SOFTWARE: All of the traits have been summed up in a comprehensive way. Microsoft Excel was used to calculate the mean and standard deviation. In the data summaries for categorical data, numbers and percentages were used. Chi-square and z-tests were obtained. P value was less than 0.03 it was considered significant. The results were then presented using tables and graphs.

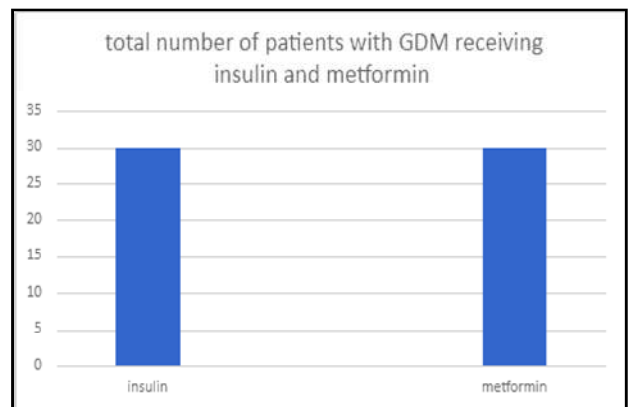
PROCEDURE

- A research paper was conducted in patients in all intensive care units with who were conceded in the Durgabai Deshmukh Hospital.

- The patient case report contained the baseline demographic characteristics.
- Patients' DataCollection Form was filled after collection of case reports.
- All the patients receiving the Metformin and Insulin was incorporated in the study.
- Retro study intensity varies.
- In women with GDM, compare the safety and efficacy between metformin and insulin.

RESULTS

Patients who met the criteria regarding inclusion were randomized in the investigation. Metformin and insulin were compared in patients with gestational diabetes mellitus.



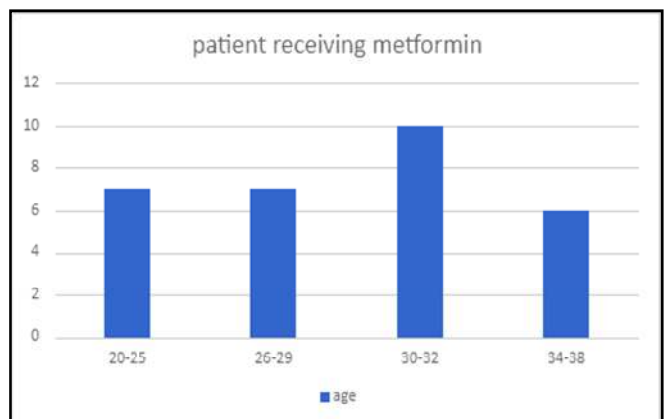
30 Women received insulin, 30 women received metformin. Total number of patients included in the study was 60 who met the inclusion criteria. Of them 30 women received metformin and 30 women received insulin and comparison was made between these groups.

Age wise distribution:

Age of patient	Metformin	Insulin	Total
22-25	7	5	12
26-29	17	11	18
30-32	10	8	18

34-38	6	6	12
Total	30	30	60

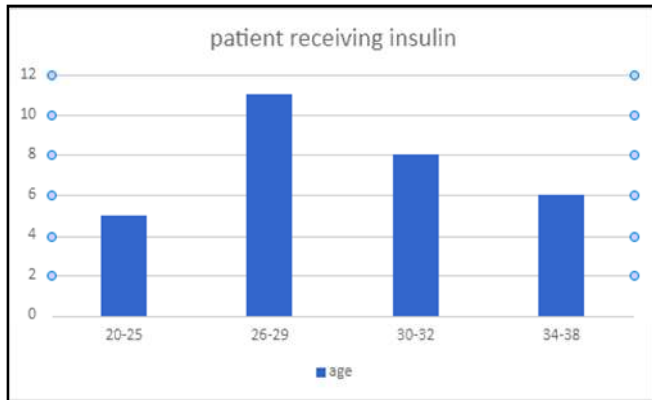
Groups that receive insulin and metformin are grouped according to the age wise distribution as shown in the table.



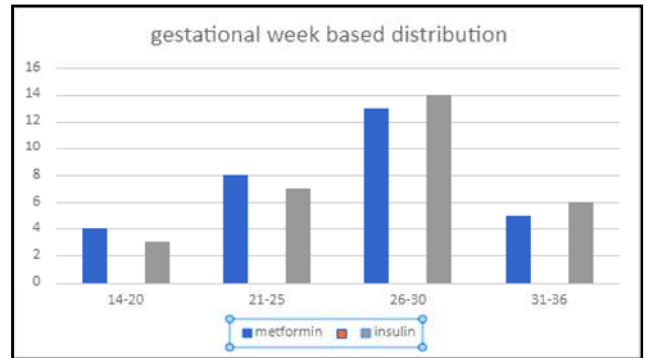
Patients receiving metformin were distributed according to the gestational week of the women under study.

Gestational week	On metformin	On insulin
14-20	4	3
21-25	8	7
26-30	13	14
31-36	5	6

Patient specific age receiving Insulin



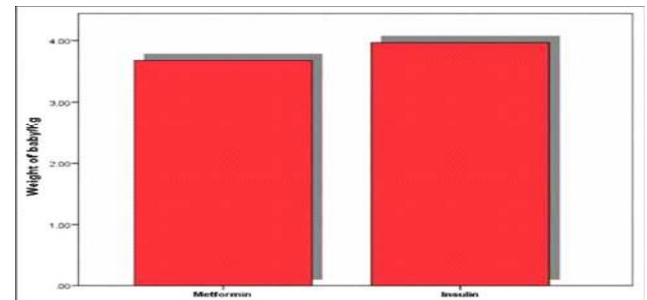
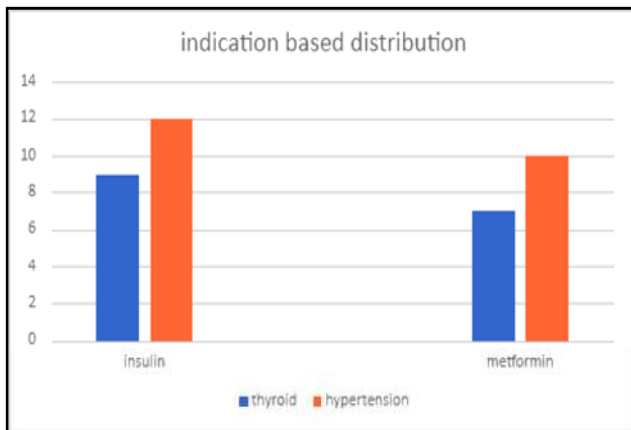
In a gestational week-based distribution, the group with a gestational week of 26- 30 is more prone to have GDM and acquire metformin (43%), 14- 20 weeks is 13%, 21-25 weeks is 26%, and 31-36 weeks is 16%.



Indication based distribution

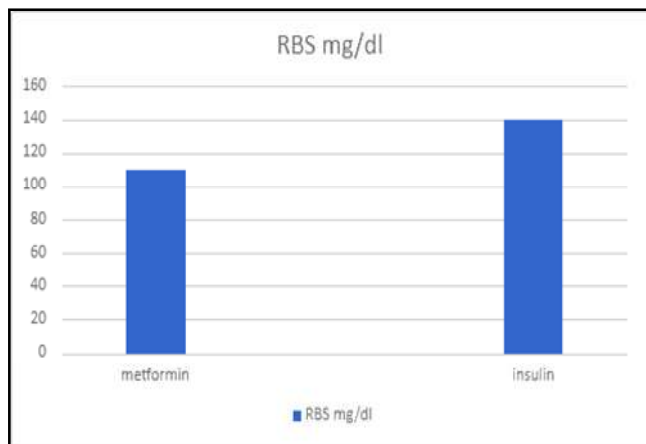
Indication	Met form in	Insulin
Thyroid	7	9
Hypertension	10	12

WEIGHT OF BABY BASED ON DRUG



Indications were almost similar in groups and did not differ significantly. Hypertension is commonly seen in both the groups and thyroid levels vary in these groups.

When contrasting the metformin and insulin categories, the insulin group should have a better birth weight than the metformin group.



Blood Sugar Levels Based on the drug .When compared to insulin, which is higher than metformin, the metformin group had a low RBC level.

DISCUSSION

Our study comprises 60 patients selected from DURGABAI DESHMUKH HOSPITAL located in Vidyanagar, Hyderabad. The selected samples were categorized based on demographic parameters like age, indication, dietary habits. Retrospective study is performed To decide the correlation of Safety And viability of glycomet and insulin in administration of GDM.

- Indications and patient attributes were similar in the two gatherings.
- Purpose of the study is to find the comparative Safety and Effective of insulin and glycomet in management of GDM.
- According to our study, metformin is found to be Safety and effective with less adverse effects and cesarean section and no birth defects or no low birth weight of the baby.
- Metformin is a insulin sensitizer that targets insulin resistance without increased production of insulin.
- Babyweight is high in insulin treated women compared to metformin.
- However, metformin is considered the second line to insulin.

WEEK BASED DISTRIBUTION

CONCLUSION

Based on the above observations by Retrospective study and according to literature it is concluded that metformin is found to be safer. In the field, it is both safe and effective in the treatment of GDM. When compared to insulin, the administration of GDM in pregnant women has no maternal or neonatal morbidity, and there is a low probability of cesarean sections. Metformin was found to be safe and effective in controlling blood sugar compared with insulin. There were high cesarean section rates recorded with insulin use. With metformin there is no risk of hyperglycemia. As metformin is given orally it is convenient for the patient to administer when compared with injection of insulin. Metformin is cheap, easy, quick and convenient to use compared to insulin. In both groups maternal and neonatal outcomes were almost equal. One patient, on the other contrary, transitioned from metformin to insulin therapy.

ETHICS AND CONSENT

Permission was obtained from the ethics committee. Upon receiving the informed consent form, all patients who meet the study criteria were included in the study. All the relevant and necessary data was collected from patient case reports.

Conflicts of Interest: None

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