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A STUDY OF DRUG UTILIZATION AND COMPARATIVE PHARMACOECONOMIC ANALYSIS OF ANTIDIABETIC DRUGS IN A TERTIARY CARE HOSPITAL

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ABSTRACT

Background: *Diabetes Mellitus is a chronic metabolic disorder that is one of the major causes of morbidity and requires lifelong treatment.*

Aim and Objectives: *This study was conducted to determine prescribing pattern and frequency of single and combination antidiabetic drugs prescribed for type 2 DM and to compare their percentage cost variation.*

Materials and Methods: *This was a prospective observational study carried out among in-patients of the general medicine department of a tertiary care hospital for a period of 6 months.*

Results: *A total of 246 subjects were analyzed showing the main age group was between 60-70 years (28.9%). Polypharmacy was evident in the study as 178 (72.4%) prescriptions had greater than 5 drugs. Metformin 500mg in 38 (33.04%), Metformin 500mg + Glimepiride 2mg in 36 (25.35%) subjects and Insulin soluble 30% + Isophane 70% were the most prescribed single, combination, and insulin preparation respectively. The highest percentage cost difference was seen with Vildagliptin 50 mg (72.88%) out of 15 single antidiabetic drugs, Metformin 500mg + Dapagliflozin 10mg (79.93%) out of 20 combination antidiabetic drugs and Insulin soluble 30% + Isophane 70% (28.28%) out of 6 insulin preparations.*

Conclusion: *Oral dosage form was the most prescribed and there is inclination towards prescribing combination therapy. The study concluded that inclusion of generic drugs to the therapy will be economical for the patient, as it can reduce the wider price variation of antidiabetic drugs by different brands available in the hospital pharmacy.*

KEYWORDS: *Type 2 Diabetes mellitus, Anti-diabetic drugs, Drug utilization study, Polypharmacy, Comparative Pharmacoeconomics analysis, Cost analysis.*

INTRODUCTION

Diabetes mellitus (DM) is a group of metabolic disorders characterized by hyperglycaemia and abnormalities in carbohydrate, fat, and protein metabolism.[1] It may result in chronic microvascular, macrovascular, and neuropathic complications.[1] It is an important public health problem in developing countries.[1] As per World Health Organization (WHO), around 31.7 million individuals in India were affected by diabetes during the year 2000 which may further rise to 79.4 million by the year 2030.[2] The prevalence of type 2 diabetes mellitus is major among Indian individuals.[2] Diabetes mellitus (DM) is a chronic disorder emerging as a major health problem which increases the rate of morbidity and mortality. Poor management of this disorder leads to several complications.[2] Management of type-2 DM requires both pharmacological and non-pharmacological interventions.[2]

Drug utilization study of antidiabetic agents is of paramount importance to promote rational drug use in diabetes and make available valuable information for the healthcare team. This study is therefore aimed at determining the pattern of drug prescription among type-2 diabetic patients to evaluate the degree of physician's compliance to current evidence and clinical guidelines and analyze the prescription according to WHO core drug prescribing indicators.[2]

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Pharmacotherapy for a chronic disease like diabetes has substantial economic implications for patients, especially in a developing country like India.[3] Only efficacy may not justify a drug choice for long-term therapy as the cost factor is equally important.[3] Similarly, an apparently costlier drug or therapeutic regimen may also turn out to be a good choice when seen in the context of efficacy and tolerability.[3] So, it is important to scientifically evaluate the cost of practiced antidiabetic agents in the management of type 2 diabetes mellitus.[3]

Rational prescribing indicates that "patients receive medications appropriate to their clinical needs, in doses that meet their own individual requirements, for an adequate period, and at the lowest cost to them and their community." It is demonstrated by drug utilization studies. Drug utilization as defined by WHO is, prescribing, dispensing, ingesting, marketing, distribution and use of drugs in society, with special emphasis on the resulting medical, social and economic consequences.[17] These studies are important as they help to scrutinize newer drugs in the market, analyze the wide variation in the patterns of drug prescribing and consumption, address the concerns about delayed ADRs, and examine the increasing costs of drug/therapy.

A pharmacoeconomic study thus becomes necessary to throw light on the current approaches to the rational use of anti-diabetic drugs in type 2 diabetes mellitus patients visiting the medicine in-patient department and to calculate the economic burden of different anti-diabetic therapies prescribed to patients with type 2 diabetes mellitus. Knowledge of costs related to diabetes helps to improve understanding, addressing health care and prevention issues associated with diabetes.

There are many antidiabetic drugs available for the treatment of type 2 diabetes mellitus and hence to manage diabetes mellitus effectively, the illumination of current knowledge about the pattern of antidiabetic drug utilization is important. As numerous brands are available for each of the individual antidiabetic drugs, a study was planned to evaluate cost variation among different brands of the same active antidiabetic drug. Therefore, the present study was planned to evaluate the drug utilization of antidiabetic drugs and conduct a comparative pharmacoeconomic analysis of the antidiabetic drugs in in-patients of a tertiary care hospital.

METHODOLOGY

The study was conducted as a prospective observational study on in-patients of the general medicine department in a tertiary care hospital from between December 2021 to May 2022, that focused on the evaluation of drug utilization and comparative pharmacoeconomic analysis of anti-diabetic drugs in type 2 Diabetes Mellitus patients. A total of 246 diabetic patients were included with a confidence level of 95% with a margin of error ± 5%.

By using the equation of estimation of single proportion, the sample size (n) was determined.

$$n = \frac{Z^2_{1\,\alpha/2}\ P(1-P)}{d^2}$$

were, α = Level of significance, d = Precision and P = Anticipated proportion.

In our study 95% confidence interval is considered and the expected error is 5%.

Hence,

$$n = \frac{(1.96)^2\ 0.8\ (1-0.8)}{(0.05)^2} = 246$$

Thus, a sample size of 246 is used in our study.

Ethical Approval

Ethical committee of the institution approved the study and official consent was given for the purpose of performing the study. It was certified by the Institutional Ethics Committee and the proposal of the study was approved by them as per letter no: KAS:ADM: IEC: 062:22 on 30th March 2022.

A data collection form was prepared and validated to collect the information required for the study. The following information was gathered: Patient demographics, patient admission reasons, past medical conditions, past medication details, provisional diagnosis, vital parameters, lab reports, pharmacotherapy, discharge medication, antidiabetic drug details, and pharmacy bill details.

Patient's case report was initially analyzed and then the subjects for our study was selected according to the inclusion and exclusion criteria in a consecutive manner until the target sample was completed. We collected information from diabetic patients who are aged 18 years and above from inpatient department and were prescribed at least one oral hypoglycaemic agent or insulin. While those without antidiabetic medication therapy and those with incomplete data or records, gestational diabetes, malignancy, any major surgical interventions in the previous 3 months, and psychiatric disorders were excluded from this analysis. Then the required details were recorded on the data collection form. After that according to the patient MRD No. the billing details were collected from the pharmacy.

The filed patient profile form was analyzed for various parameters and the required demographic details of the patient were entered in the data collection form then the DUE of antidiabetic drugs was performed. The data included the total number of drugs in one

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prescription, number of antidiabetic drugs prescribed in patient, total number of single antidiabetic drugs prescribed, types of single antidiabetic drugs prescribed, number of combination drugs prescribed, types of antidiabetic drugs combinations prescribed, number of insulin preparations prescribed and the types of insulin preparations prescribed.
Based on the billing details, the maximum and minimum price per tablet or vial (Rs) of each antidiabetic agent were found and then the cost difference was calculated.
The percentage variation in cost was calculated by using the formula;
Percentage cost variation =

$$\frac{\text{Cost of highest priced product} - \text{the cost of lowest priced product}}{\text{Cost of lowest priced product}} \times 100$$

STATISTICAL TEST PERFORMED

All collected data were processed, compiled, and analyzed using Microsoft excel method and was mentioned in simple frequencies and percentages. A descriptive analysis of patient characteristics was performed. Statistical Package for Social Sciences (SPSS) software were used for analyzing the data. Chi-square / Likelihood ratio was used as the main test to correlate the data. The p-value <0.05 was considered to be statistically significant.

RESULTS

Among the total of 246 prescriptions collected from inpatients, evaluation of various variables such as gender, weight, age, and it showed that the prevalence of Diabetes mellitus was more in males (52%) as compared to females (48%). The weight of the subjects was categorized into three, 129 (52%) of patients were over 70kg, 101 (41%) comes under 50-70kg and 16 (7%) comes under less than 50kg. The highest number of single antidiabetic drugs prescribed were seen in the age group 60-70 in 71 subjects, followed by 70-80 in 65 and then 50-60 in 50. Age-wise distribution of single antidiabetic drugs prescribed was found to be statistically significant as p value<0.05 (p=0.002).
The highest number of antidiabetic drugs prescribed were prescribed for patients with hypertension which was a prevalent condition. Comorbidity and number of antidiabetic drugs prescribed-wise distribution was statistically significant as p value<0.05 (p=0.008). With 53 (60.9%) patients were prescribed less than 2 antidiabetic drugs and 34 (39.1%) patients were prescribed with 2-5 antidiabetic drugs. 90 subjects did not have any comorbidity and among them 50 (55.6%) subjects were prescribed less than 2 antidiabetic drugs, and 40 (44.4%) subjects were prescribed 2-5 antidiabetic drugs.

Among the subjects, 151 (61.4%) were prescribed less than 2 antidiabetic drugs, and 95 (38.6%) were prescribed to 2-5 antidiabetic drugs. Figure 1 shows the distribution based on the number of antidiabetic drugs prescribed.

Figure 2 shows the distribution of single antidiabetic drugs prescribed for subjects. 148 (60.2%) participants were not prescribed single antidiabetic drugs, 83 (33.7%) were prescribed 1 single antidiabetic drug, followed by 13 (5.3%) were prescribed 2 single antidiabetic drugs, 1 (0.4%) prescribed with 3 single antidiabetic drugs and 1 (0.4%) was prescribed with 4 single antidiabetic drugs per prescription.

For 38 (33.04%) subjects Metformin 500mg was prescribed, followed by Voglibose 0.3mg for 14 (12.17%) and then Glimepiride 2mg for 11 (9.57%) subjects. The least commonly prescribed single antidiabetic drugs were Glibenclamide 5mg for 1 (0.87%) subject, Glipizide 5mg for 2 (1.74%) and Metformin 1000mg for 2 (1.74%) subjects. The percentage distribution of single antidiabetic drugs prescribed is expressed in the Figure 3.

From our data, it was found that 116 (47.2%) patients were not prescribed any combination antidiabetic drugs, 118 (48%) were prescribed 1 combination antidiabetic drug, and 12 (4.9%) were prescribed 2 combination antidiabetic drugs. Figure 4 shows the distribution of combination antidiabetic drugs prescribed.

Figure 5 shows the percentage of combination antidiabetic drugs prescribed for subjects. The most prescribed combination antidiabetic drug was Metformin 500mg + Glimepiride 2mg for 36 (25.35%) subjects, followed by Metformin 500mg + Sitagliptin 50mg for 24 (16.9%) and Metformin 500mg + Glimepiride 1mg for 16 (11.27%). The least commonly prescribed combination antidiabetic drugs were, Metformin 500mg + Voglibose 0.2mg in 1 (0. 7%), Metformin 500mg + Dapagliflozin 5mg in 1 (0.7%), Metformin 850mg + Glimepiride 3mg in 1 (0.7%), Metformin 500mg + Glimepiride 2mg + Voglibose 0.2mg in 1 (0.7%), Metformin 500mg + Glimepiride 2mg + Pioglitazone 15mg in 1 (0.7%) and Metformin 1000mg + Glimepiride 1mg in 1 (0.7%) subject.
162 (65.9%) subjects were not prescribed any insulin preparations, 72 (29.3%) were prescribed with 1 insulin preparation and 12 (4.8%) were prescribed with 2 insulin preparations. distribution based on the number of insulin preparations prescribed is expressed in Figure 6.

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The most commonly prescribed insulin preparation was Insulin soluble 30% + Isophane 70% in 36 (37.89%) subjects, followed by Insulin rapid acting DNA origin in 25 (26.32%) and Insulin Glargine in 19 (20%). Insulin aspartate 30/70 in 2 (2.11%) was the least commonly prescribed insulin preparation. The percentage distribution of insulin preparations prescribed is expressed in Figure 7.
Percentage cost variation in cost of single oral antidiabetic medications were analyzed. The highest percentage cost difference was found for Vildagliptin 50mg (72.88%), followed by Dapagliflozin 5mg (65.61%). Pioglitazone 15mg (0%) and Glipizide 5mg (0%) had the least percentage cost difference. Table 1 shows the cost variation between highest-priced and lowest-priced brands of 15 single antidiabetic drugs.

A noticeable variation in the prices of 20 combination antidiabetic medicines which is shown in Table 2. The cost variation analysis of antidiabetic drugs used in combination therapy showed highest cost variation in Metformin 500mg + Dapagliflozin 10mg (79.93%), followed by Metformin 1000mg + Dapagliflozin 10mg (77.89%). The least percentage cost difference was found in Metformin 500mg + Dapagliflozin 5mg (0%), Metformin 850mg + Glimepiride 3mg (0%) and Metformin 500mg + Gliclazide 40mg (0%).

The cost analysis of 6 insulin preparations is shown in Table 3. Insulin soluble 30% + Isophane 70% (28.28%) showed highest percentage cost difference, followed by Insulin glargine (25.09%). There were three insulin preparations that had no cost variation, which were Insulin aspart (0%), Insulin aspartate 30/70 (0%), and Insulin rapid acting DNA origin (0%).

DISCUSSION

Diabetes a chronic condition and metabolic disease that requires multiple drug therapy and lifestyle modifications. As diabetes is usually associated with various complications like cardiovascular, neurological, and nephrological diseases, often diabetic patients are more prone to polypharmacy. Our study includes comparative Pharmacoeconomics to calculate the percentage cost variation of antidiabetic drugs.

The initial demographics which were assessed in the study population was gender distribution, in which male preponderance was seen. 128 (52%) were males and 118 (48%) were females. It is supported by another study by Nithin et al, 2017.[4] From the result, older men show higher prevalence of type 2 diabetes than older women. This may be due to larger amount of visceral fat seen in men as stated in the study by Nordstrom et al, 2016.[5]

The weight-wise distribution shows that 129 (52%) subjects who were over 70 kg were more prone to diabetes mellitus as compared to 101 (41%) subjects under 50-70 kg and 16 (7%) subjects who were less than 50 kg. This result is supported by the study by Eun Sook et al, 2018[6] in which states that, compared with the non-obese group there is a higher chance of incidence of diabetes in obese subjects.

From the age-wise comorbidity distribution of the subjects, it was observed that hypertension was the most common comorbidity, which was most seen in 87 (35.4%) subjects. Among them, 34 (47.9%) subjects fall in the age group of 60-70. A similar result was seen in the study conducted by Sandipana Pati and F. G. Schellevis, 2017[7] in which a higher prevalence of hypertension was seen in the age group greater than 60 years in about 62% of the participants.

According to our study result, the highest number of single antidiabetic drugs were prescribed for 71 subjects were seen in the age group of 60-70, followed by 65 in the 70-80 age group. 83 (33.7%) participants were prescribed with 1 single antidiabetic drug followed by 2 single antidiabetic drugs in 13 (5.3%) subjects. These findings were contrary to the study by Sudha Vengurlekar et al, 2008[8] in which the highest number of the single antidiabetic drug was prescribed for the age group 51-60 and followed by the age group of 41-50.

On reviewing the distribution of drugs prescribed according to comorbidity, polypharmacy condition was seen in 68 (78.25%) patients who had hypertension, 17 (81%) with CAD and 16 (76.2%) with CVA. Whereas the study by Indu et al, 2018[9] showed that the most common comorbid condition was hyperlipidemia (70.7%) and hypertension (47.3%) which was contrary to our study. Their study also shows that there was the minimum chance of polypharmacy as an average number of drugs prescribed was 4.72 +/- 0.11 per prescription.

Among the subjects, more than 5 drugs were prescribed in 178 (72.4%) cases and for 68 (27.6%) cases had 2-5 drugs, which indicated a higher prevalence of polypharmacy condition. This trend is like various studies conducted such as that of Habibe Inci, 2020[10] where the mean number of drugs used by Diabetes mellitus patients was 6.7+/- 2.5 and 77.9% of DM patients had polypharmacy.

In the present study, 98 (39.8%) subjects were prescribed single antidiabetic drugs. Metformin 500mg was identified as one of the most common single antidiabetic drugs prescribed in 38 (33.04%) subjects, followed by Voglibose 0.3mg in 14 (12.17%) subjects.

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Whereas Glibenclamide 5mg was found to be the least prescribed single antidiabetic drug in 1 (0.87%) subject. This result can be matched with the study conducted by Moreno Juste et al, 2019[11] were Metformin 500mg was the most prescribed single antidiabetic drug in 10246 (80.3%) patients.

Most of the diabetic patients, 118 (48%) were prescribed 1 combination of antidiabetic drugs whereas 12 (49%) were prescribed 2 combination antidiabetic drugs. The most prescribed combination antidiabetic drug was found to be Metformin 50 mg + Glimepiride 2mg for 36 (25.3%) subjects followed by Metformin 500mg + Sitagliptin 50mg in 24 (16.9%) subjects. Only 1 (0.7%) subject was prescribed with Metformin 500mg + Voglibose 0.2mg indicating that it was the least commonly prescribed combination antidiabetic drug for the patients. The study by Acharya et al, 2013[12] shows the similar result that is, the most used antidiabetic drug combination was Glimepiride and Metformin in 119 (76.28%) patients.

Our study indicates that most of the study subjects, 162 (65.9%) were not prescribed with insulin, 72 (29.3%) subjects were prescribed 1 insulin preparation and 12 (4.8%) were prescribed with 2 insulin preparations. Our study also showed that, the most prescribed insulin preparation was Insulin soluble 30% + Isophane 70% as it was prescribed in 36 (37.89%) cases, followed by Insulin rapid-acting DNA in 25 (26.3%) cases. Insulin aspartate was the least commonly prescribed insulin preparation. This was like the study by Sree Navya et al, 2017[13] in which 63% of insulin preparations were Regular insulin and Isophane insulin.

Out of 15 single antidiabetic drugs prescribed for the patients, Vildagliptin 50mg (72.88%) showed the highest percentage cost difference, while Pioglitazone 15mg (0%) and Glipizide 5mg (0%) had the most minor percentage cost difference. This was unlike the study by Khadga Raj et al, 2022[14], wherein the highest percentage cost difference was seen in Pioglitazone 15mg (185.7%) and the lowest percentage cost difference was in Acarbose 25mg (117.18%).

In our study, out of 20 combination antidiabetic drugs prescribed, Metformin 500mg + Dapagliflozin 10mg (79.93%) showed the highest percentage cost difference whereas the least percentage cost difference was found for Metformin 500mg + Dapagliflozin 5mg (0%), Metformin 850mg + Glimepiride 3mg (0%) and Metformin 500mg + Gliclazide 40mg (0%). However, Mehani R et al, 2018[15] in their study reported that Glimepiride 1mg + Metformin 500mg (346%) showed the maximum cost variation while Vildagliptin 50mg + Metformin 500mg (2.33%) showed minimum variation in percentage cost.

Among 6 insulin preparations encountered in our study, Insulin soluble 30% + Isophane 70% (28.28%) shows the highest percentage cost difference, and the lowest percentage cost difference was found with Insulin aspart (0%), Insulin aspartate 30/70 (0%) and Insulin rapid acting DNA origin (0%), which is contrary to the study by Mayur et al, 2021[16]. Their study showed that the highest percentage cost difference was for Insulin Zinc 40IU (135.17%) whereas the lowest percentage cost variation was for Insulin (Human-Isophane recombinant) 40IU (1.40%).

The strength of our study is that it analyzes prices of different brands of the same drug available at our hospital pharmacy and thus helps the prescriber to select the same generic drug which is available at lower cost thereby improving patient compliance to the treatment regimen. The study can provide advantageous feedback to prescribers in order to improve their prescribing pattern.

The study has a few limitations that includes the sample size and duration of study are not adequate to conduct extensive pharmacoeconomic analysis, some miscellaneous oral antidiabetic drugs and insulin are not included in this study, and price variation found in this study cannot be generalized, as pharmacy store included were only from our hospital. All the diabetic patients who visited the hospital during the study period could not be included, only the in-patients belonging to the general medicine department were included.

Our study recommends that a greater number of oral antidiabetic agents should be covered under DPCO as it is a prevailing condition among the population and in case of noncompliance to DPCO, more stringent actions must be ensured. Physicians and pharmaceutical companies must be made aware about the wide variation in prices so that the drug cost can be controlled and be made more affordable to the patients. Physicians should be motivated to prescribe low-cost drug and should not be biased by pharmaceutical industries.

CONCLUSION

A prevalence of polypharmacy condition was seen in the prescribing pattern. Upon reviewing, the most prescribed antidiabetic drug was in oral dosage form, out of which there was more inclination towards prescribing combination therapy as compared to monotherapy and insulin preparations. Metformin 500mg was the most commonly prescribed among monotherapy. The commonly prescribed combination therapy was Metformin 500mg + Glimepiride 2mg and Insulin soluble 30% + Isophane 70% insulin preparation was commonly prescribed insulin preparations.

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In summary, this study revealed that Vildagliptin 50 mg had the highest percentage cost difference among single antidiabetic drugs. For combination antidiabetic drugs, Metformin 500mg + Dapagliflozin 10mg had the highest cost variation. In the case of insulin preparations, Insulin soluble 30% + Isophane 70% had the highest percentage cost difference. The prevalence of high percentage price variation for antidiabetic drugs may be due to the availability of different brands in the hospital pharmacy.

Diabetes mellitus is a chronic illness, cost of the drug plays an important role in compliance with the treatment regimen, as it has a direct economic implication on the patient. It is important to bring awareness among physicians and pharmaceutical companies regarding the existence of wide variation in prices. The inclusion of more generic drugs to the therapy is desirable as it will be economical for the patient by reducing the wider price variation of antidiabetic drugs. Our study results can help the prescriber to select the same generic drug which is available in our hospital pharmacy at a lower cost. Thereby patient adherence to the treatment and outcome is improved.

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TABLES

Table 1: Percentage Cost Difference in Single Antidiabetic Drugs Prescribed.

Sl. No.	Single antidiabetic drugs used	Cost difference(Rs)	Cost difference (%)
1	METFORMIN 500mg	0.45	21.2
2	METFORMIN 1000mg	1.03	20.4
3	GLIMEPIRIDE 1mg	1.55	38.56
4	GLIMEPIRIDE 2mg	0.56	8.76
5	SITAGLIPTIN 50mg	0.15	0.36
6	GLIBENCLAMIDE 5mg	0.37	25.17
7	VOGLIBOSE 0.2mg	6.57	65.05
8	VOGLIBOSE 0.3mg	8.74	62.88
9	VILDAGLIPTIN 50mg	15.91	72.88
10	DAPAGLIFLOZIN 10mg	18	60
11	DAPAGLIFLOZIN 5mg	18.7	65.61
12	TENELIGLIPTIN 20mg	2.33	15.07
13	GLIPIZIDE 5mg	0	0
14	GLICLAZIDE 40mg	1.13	22.87
15	PIOGLITAZONE 15mg	0	0

Table 2: Percentage Cost Difference in Combination Antidiabetic Drugs Prescribed.

Sl. No.	Combination antidiabetic drugs used	Cost diff. (Rs)	Cost diff. (%)
1	METFORMIN 500mg + GLIMEPIRIDE 1mg	3.28	29.63
2	METFORMIN 500mg + GLIMEPIRIDE 2mg	5.2	31.51
3	METFORMIN 1000mg + GLIMIPIRIDE 1mg	4.15	32.42
4	METFORMIN 1000mg + GLIMIPIRIDE 2mg	5.8	34.65
5	METFORMIN 500mg + SITAGLIPTIN 50mg	0.02	0.074
6	METFORMIN 1000mg + SITAGLIPTIN 50mg	0.1	0.36
7	METFORMIN 500mg + GLIBENCLAMIDE 5mg	0.02	0.35
8	METFORMIN 500mg + VILDAGLIPTIN 50mg	13.56	61.92
9	METFORMIN 500mg + TENELIGLIPTIN 20mg	2.45	14
10	GLIMIPIRIDE 2mg + METFORMIN 500mg + VOGLIBOSE 0.2mg	7.06	33.49
11	GLIMIPIRIDE 1mg + METFORMIN 500mg + VOGLIBOSE 0.2mg	5.2	31.9
12	METFORMIN 500mg + GLIMIPIRIDE 2mg + PIOGLITAZONE 15mg	5.17	31.01
13	METFORMIN 500mg + GLICLAZIDE 40mg	0	0
14	METFORMIN 500mg + GLICLAZIDE 80mg	7.45	52.84
15	METFORMIN 850mg + GLIMIPIRIDE 3mg	0	0
16	METFORMIN 1000mg + DAPAGLIFLOZIN 5mg	0	0
17	METFORMIN 1000mg + DAPAGLIFLOZIN 10mg	46.58	7.89
18	METFORMIN 500mg + DAPAGLIFLOZIN 5mg	11.63	49.49
19	METFORMIN 500mg + DAPAGLIFLOZIN 10mg	45.56	79.93
20	METFORMIN 500mg + VOGLIBOSE 0.2mg	7	54.26

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Table 3: Percentage Cost Difference in Insulin Preparations Prescribed.

Sl. No.	Insulin preparations used	Cost difference (Rs)	Cost difference (%)
1	INSULIN SOLUBLE 30% +ISOPHANE 70%	0.92	0.58
2	INSULIN SOLUBLE 50% +ISOPHANE 50%	62.12	28.28
3	INSULIN GLARGINE	199.2	25.09
4	INSULIN ASPART	0	0
5	INSULIN ASPARTATE 30/70	0	0
6	INSULIN RAPID ACTING DNA ORIGIN	0	0

FIGURES

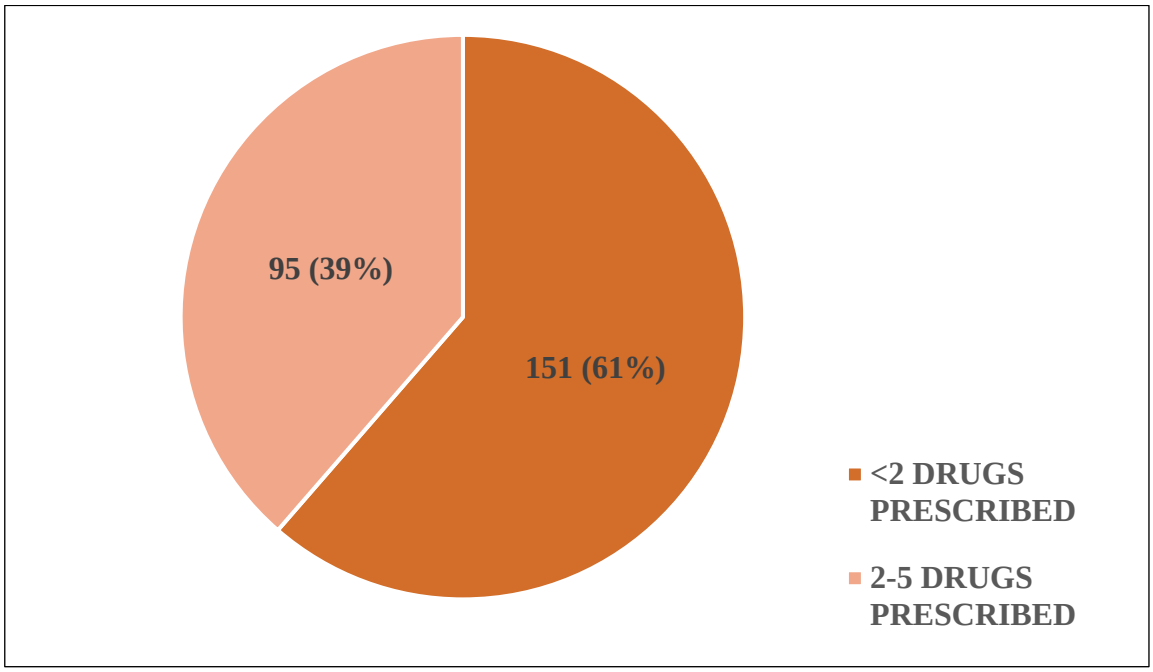

Figure 1: Distribution Based on Number of Antidiabetic Drugs Prescribed.

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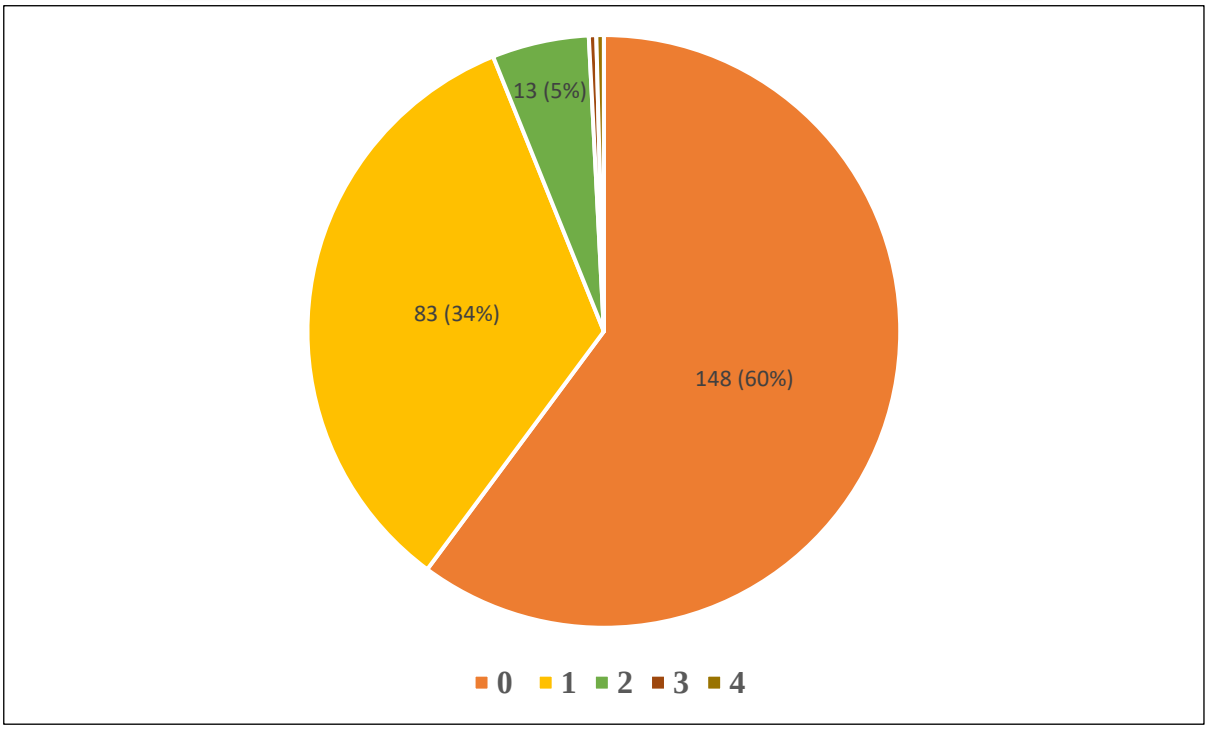

Figure 2: Distribution of Single Antidiabetic Drugs Prescribed.

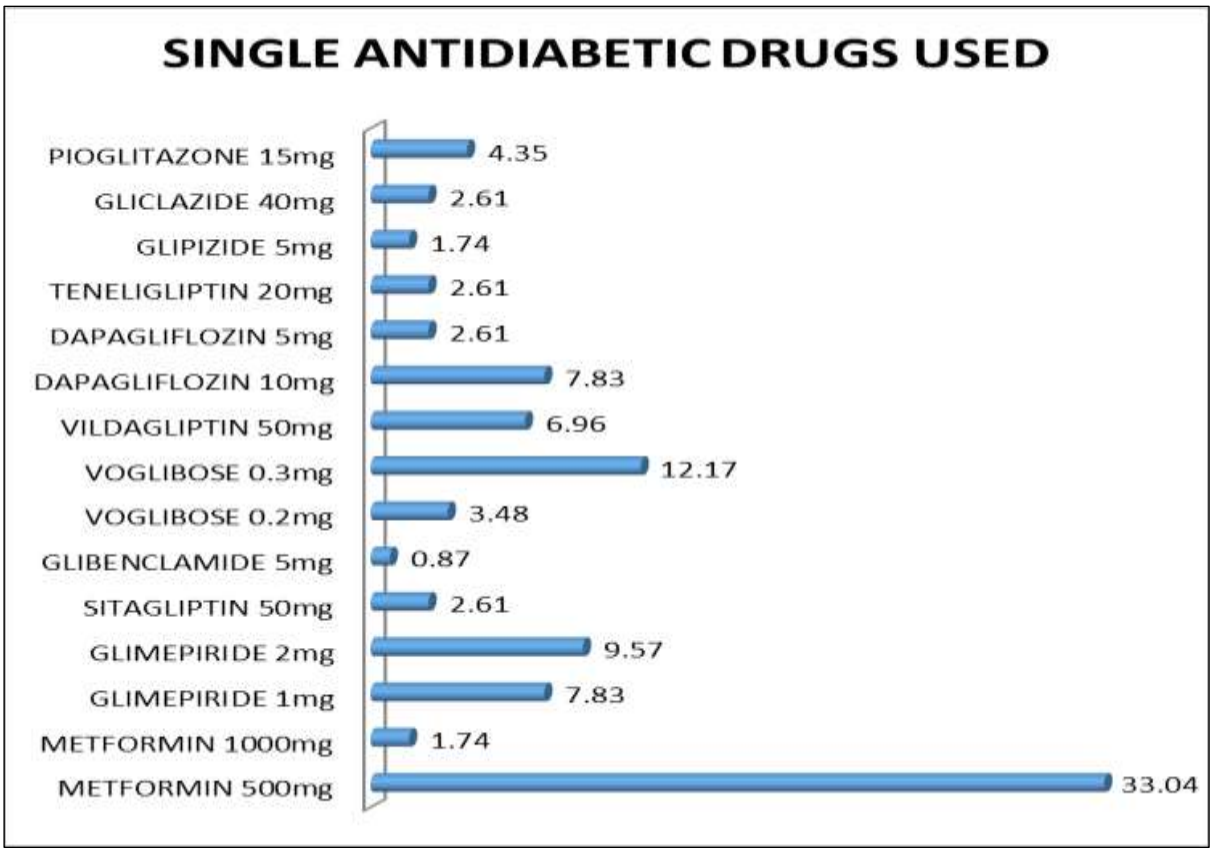

Figure 3: Percentage Distribution of Single Antidiabetic Drugs Prescribed.

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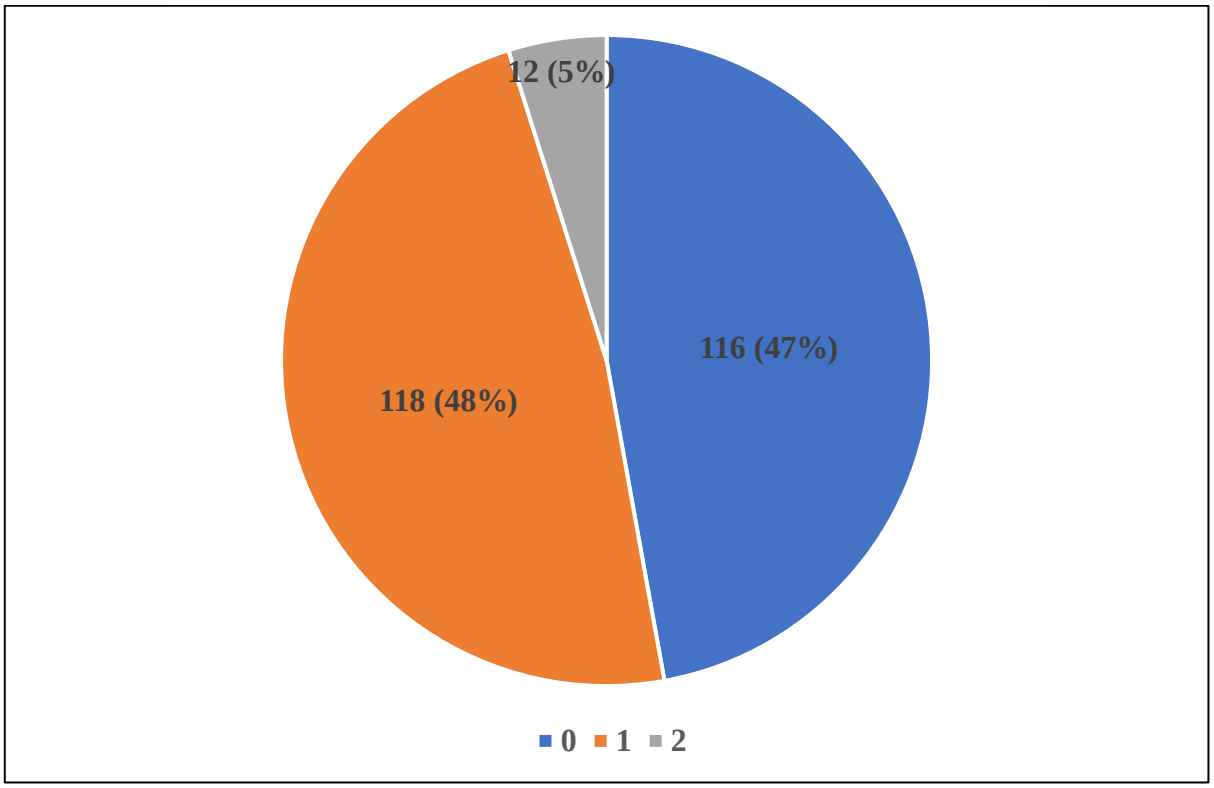

Figure 4: Distribution of Combination Antidiabetic Drugs Prescribed.

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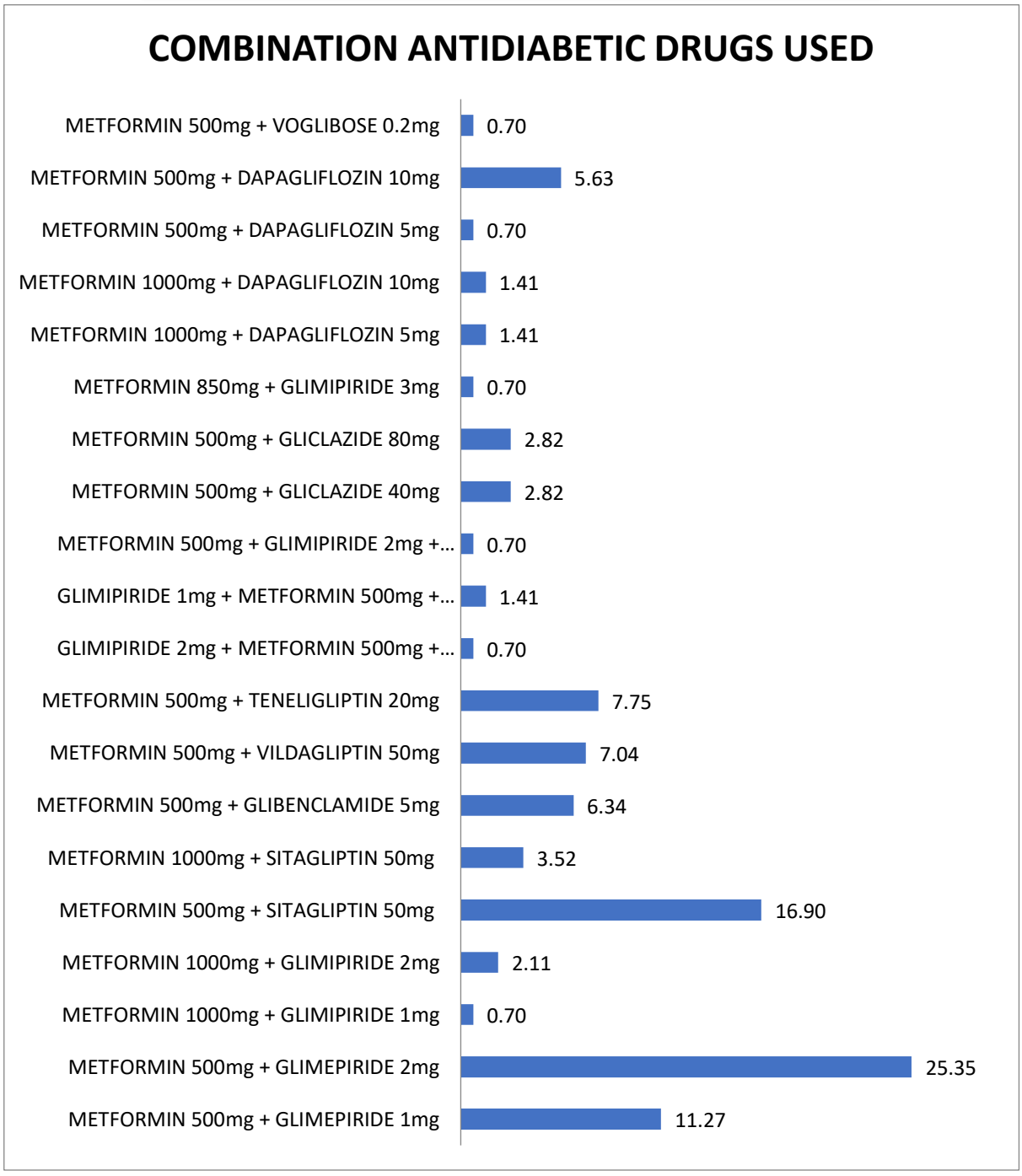

Figure 5: Percentage Distribution of Combination Antidiabetic Drugs Prescribed.

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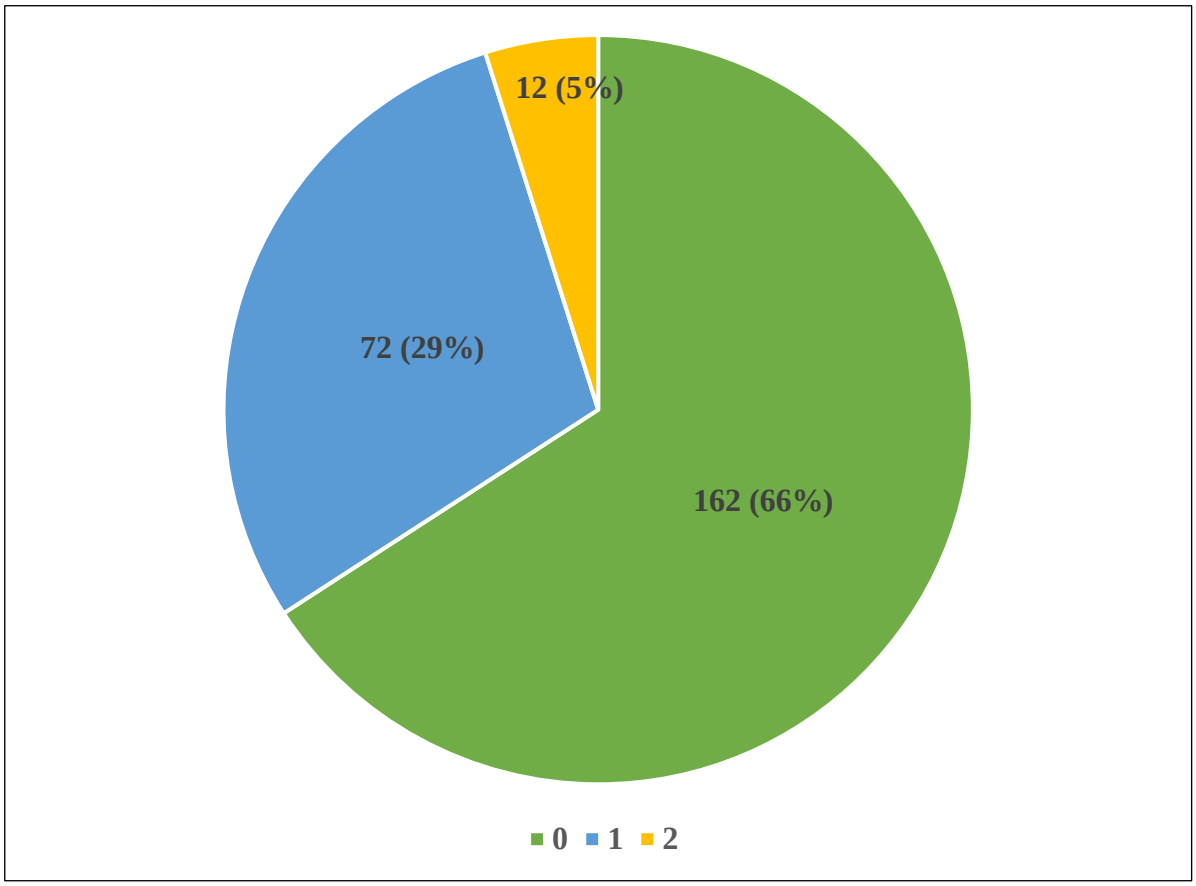

Figure 6: Distribution Based on Number of Insulin Preparations Prescribed.

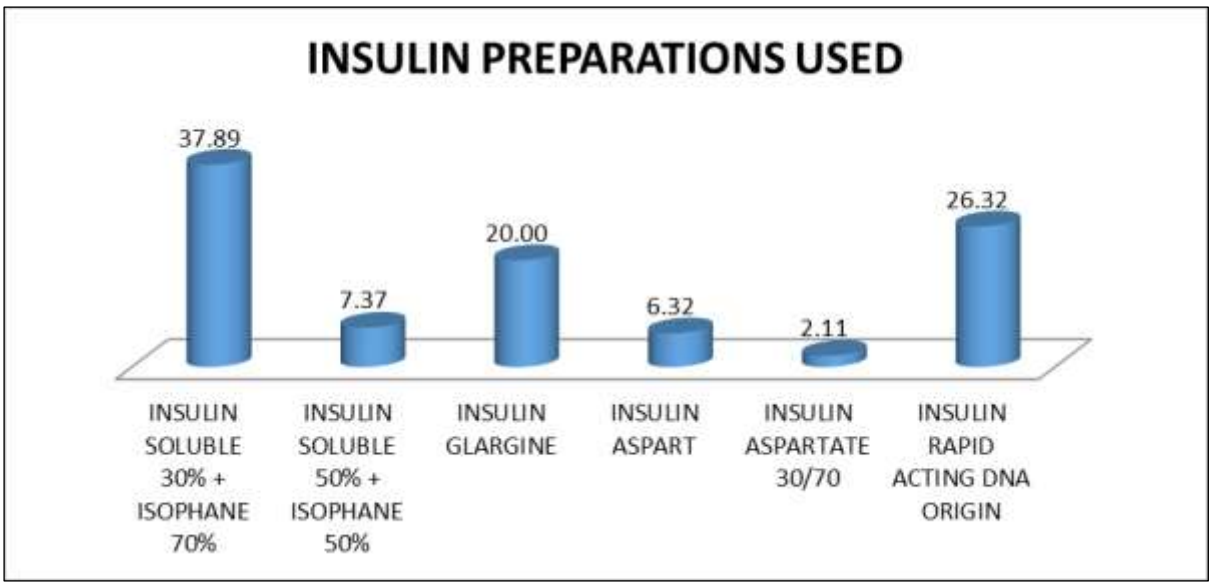

Figure 7: Percentage Distribution of Insulin Preparations Prescribed.

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