The pressing issue is that close to 90 percent of these cases can be controlled but not cured completely [2].

According to the data collected by the World Health Organisation, about 1.5 million fatalities were reported, making it the eighth leading cause of death. It should also be noted that about 2.2 million deaths are attributed to diabetes and associated complications like the cardiac failure, renal failure [3].

Prevalence percentage of diabetes and pre-diabetes according to their age can be, at age 30-39 it is 11%, 19%; age 40-49 it is 22%, 21%; age 50-59 it is 33%, 19%; age 60-69 it is 41%, 20%. It is speculated that the type of diabetes might be associated with the Socio-Economic factors [4].

Preliminary studies conducted by Indian council of medical research (ICMR) revealed the number of people affected with diabetes in the India is as follows Chandigarh-0.12 millions, Jharkhand-0.96 million, Maharashtra-9.2 million, Tamil Nadu-4.8 million [2]. National urban survey conducted across metropolitan cites of India reported 11.7% in Kolkata, 6.1% in Kashmir, 11.6% in New Delhi, 9.3% in Mumbai, 13.5% in Chennai, 16.6% in Hyderabad [2].

People whose pancreas does not produce enough Insulin (a hormone produced by the beta cells of Langerhans of the pancreas) or those who cannot effectively use the insulin produced are prone to diabetes [2].

There are three major types of Diabetes, namely the Type- I, Type-II and gestational. There are a few uncommon types like monogenic diabetes, cystic fibrosis-related diabetes.

In the case of type- I diabetes, one's own immune system attacks the beta cells which produce insulin. This is common in children and young adults between 10-15 years of age. In the case of type-II, the Beta cells will not be able to produce insulin or the cells are unable to uptake insulin. This is the most common type of diabetes in middle-aged and old people. The Gestational Diabetes affects some women during pregnancy, which in turn leads to type-II in later stages.
of their lives [2]. The other types are categorized as the pre-diabetic condition where patients have a rise in their blood glucose but not to the extent that it can be classified as Type-II [2].

Symptoms of diabetes include polyuria, polydipsia, hunger, weight gain, unusual weight loss, fatigue, cuts and bruises that do not heal, male sexual dysfunction, numbness, and tingling in hands and feet [5]. Many complications in the skin, eyes, Heart, Mental health and erectile dysfunction in the male are major issues faced by the patients suffering from Diabetes.

The Type-I diabetes treatments include a healthy diet, exercise, and Insulin uptake [6]. The Type-II can be treated with oral medication and insulin to control blood-glucose levels besides having a proper diet and exercise habits [7].

There are a large number of formulations available for every drug molecule in the market. Variation in pricing is found between different brands of a same generic molecule of the same strength. This study was carried out to make the prescriptions cost effective [8].

**METHODOLOGY**

The prices of various branded formulations of the same generic drug were analysed. Cost of particular generic drug holding similar strength (both in mono and in multidrug regimen) number. Which different companies manufactured were taken from current index of medical specialities (CIMS April-July 2018). From which maximum and minimum price of the same drug manufactured by different pharmaceutical companies were taken. Percentage variation and an average price of the drugs were calculated [9].

**Formula:**

\[
\text{Percentage cost variation} = \left(\frac{\text{Maximum cost-minimum cost}}{\text{minimum cost}}\right) \times 100
\]

**RESULTS**

According to the study, we found that there is an extensive variation in the cost of the anti-diabetic drugs. In the analysis of the comparative cost-effectiveness of therapies, it showed that the monotherapy is costlier than that of the combination therapy.

Study showed that there is a wide variation in the prices of different brands of anti-diabetic drugs. Highest number of trades usable are respectively Glimipride-2mg (n=42brands) Glimipride-1mg (n=42brands); followed by Metformin-500mg (n=34brands); Voglibose-0.2mg (n=22brands) as per table-1

In combination with Metformin highest number of brands are observed in Glimipride-2mg (n=69brands); Glimepride-1mg (n=59brands); Glibenclamide-5mg (n=18brands); Gliclazide-80mg (n=16brands) as given in table-2.

From the above data we assume that, if a mon-drug regimen is given to the patient for a month the least cost prescription would be Glibenclamide-2.5mg (195rs) and costlier prescribed drug would be Glimipride-4mg (3210.60rs). In case of combination drug regimen least would be Metformin 400mg + Glipizide 2.5mg (99rs) whereas costlier will be Metformin 1000mg + Glimipride 4mg (2070.00).

**DISCUSSION**

The study was done to investigate and compare the cost difference in various brands of same generic drug. In India, particular drugs of same dose and amount are being sold by different pharmaceutical companies under different brand names with wide variation in their cost. It is therefore, necessary for the health care providers to have an idea on the cost of various formulations of the same drug and chooses the most cost effective drug [8]. Generally, clinicians do not go with the cost of the drug, which can attribute to the ignorance of drug cost eventually leads to increase in overall drug expenditure [8]. Increase in drug cost is associated with the decline in medication adherence, which in turn leads to the poor patient outcome [8]. Decrease in drug cost is associated with improved adherence to the medication regimen [9]. Non-compliance of drug therapy results in progression of disease which increases the overall medical care cost dramatically. Increase in price has found to be associated with the marketing strategies of the manufacturers and are not associated with the quality of the drug [10]. Thus, it appears that the huge variation in cost of the drug is regulated by the pharmaceutical companies which are not associated with the generic drug. This study highlights the difference in pricing of the generic drug by different marketing agencies. This will foster the awareness about the impact of cost on the medication adherence [11].
CONCLUSION

Diabetes is a chronic condition where compliance with the drug plays a key role. Adherence of the drugs can be ensured by decreasing the cost of the drug prescribed. This can be achieved by prescribing with combinations, the cost of independent drug is found to be costlier. Wide variation on the drug cost was identified using this study.

REFERENCES