A Survey on Prevalent Diseases & Highest Selling Drugs in Various Districts of Tamilnadu

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ABSTRACT

The survey on the most prevalent disease and Highest selling drug in various districts of Tamilnadu in order to provide knowledge about various drugs used for hypertension, diabetes mellitus, inflammation, and hyperlipidemia. This survey was conducted in different private hospitals and various medical shops of various districts (Trichy, Karur, Erode) of Tamilnadu. There are different combinations of drugs are available for the treatment of Hypertension, Diabetes mellitus, Analgesia, and Hyperlipidemia. The objective of this study helps to know the highest-selling drug & its mechanism of action, ADR and uses of that drug. The hospital pharmacy training helps to collect information on the most prevalent diseases of the hospital in various districts of Tamilnadu. This study data would be helpful for creating awareness among those district people.

Keywords: Disease, Treatment, Symptoms, Inflammation, Side Effects, Prevalent Disease, Lipoproteins,

INTRODUCTION

According to WHO, the number of people with diabetes worldwide is 108 million in 1980 to 422 million in 2014. Between 2000 and 2016 there was a 5% increase in premature mortality from Diabetes. In 2019, Diabetes was the 9th leading cause of death with an estimated 1.5 million deaths directly caused by diabetes. In 2021 around 43% of people living with DM. The number is projected to be 643 million by 2030. More than 77 million Indians have diabetes, which is nearly 39.71% of the Indian population.[1] Deaths from diabetes increased by 70% globally between 2000 and 2019, with an 80% rise in deaths among males.[2] (DM is a chronic metabolic disorder characterized by Hyperglycemia, Glycosuria, Hyperlipidaemia, negative nitrogen balance, and sometimes Ketonaemia. Diabetes mellitus is caused by a variable combination of insulin deficiency and insulin resistance. [3]) The prevalence of chronic pain conditions is, 37.3% in developed countries and 41.1% in developing countries, with an overall prevalence of 38.4%.[4]Adult female individuals show a higher preponderance for chronic pain, associated with lower pain thresholds and tolerance.[5] ("An unpleasant sensory and emotional experience associated with acute or potential damage". Pain is always subjective. It is differently experienced by each individual. [6]) Raised cholesterol levels to increase the risks of heart disease and stroke. Globally, a third of ischemic heart disease is attributable to high cholesterol and is estimated to cause 2.6 million (4.5% of total) and 29.7 million disability-adjusted life years, or 2% of total disability-adjusted life. In 2021, the global prevalence of raised total cholesterol was 39%(37% for males and 40% for females).[7] More than 72 million Indians have Hyperlipidemia, which is nearly 37% of the Indian population. (Hyperlipidemia is a condition that incorporates various genetic and acquired disorders that describe elevated lipid levels within the human body. [8]) The number of people with hypertension increased from 594 million in 1975 to 1.13 billion in 2015, with the increase seen largely in low and middle-income countries[9]. This increase is due mainly to a rise in hypertension risk factors in those populations. In 2021 around 46% of people living with hypertension. More than 102 million Indians have hypertension, which is nearly 45% of the Indian population[10]. Hypertension is an elevation of systolic and/ or diastolic BP above 140/90 mm of Hg. It is a common cardiovascular entity. [3] To promote health and generate awareness among the general population regarding hypertension, diabetes mellitus, hyperlipidemia,& inflammation, this study provides data on the prevalence and highest-selling drugs in those regards.

MATERIALS AND METHODOLOGY:

Study Design: This study is a Questionnaire-based observational study to evaluate the highest-selling drugs in pharmacies and also evaluate the most prevalent disease in various districts of Tamilnadu.

Study Site: This study was conducted at different Private hospitals and various medical shops in various Districts of Tamilnadu.

Inclusion And Exclusion Criteria: Inpatients & Outpatients having diseases like Diabetes Mellitus, Hypertension, Hyperlipidemia, general cases,and skin-related diseases containing patients are included. While pediatric patients, Emergency cases patients, patients admitted for special surgeries, and pregnant womenwere excluded.

Study Population: Highest selling drug survey was carried out in medical shops of various districts of Tamilnadu by using the study questionnaire prepared. In most prevalent disease study, 190 patients were surveyed among the various hospitals located in the various Districts of Tamilnadu.

Study Duration: This study was carried out from 04.07.2022 – 31.07.2022.

Study Location:

- 30 medical shops in each district of Erode, Karur, and Trichy.
- Fathima Health Care Centre, Fathimagar, Trichy.
- Sudha Hospitals, Erode.
- Amirtha Medical Centre & Hospital, Thanthonimalai, Karur.

RESULT & DISCUSSION

Most Prevalent Disease: A total of 185case details were collected for this current study. The result explores that the most prevalent disease in our study was found to be Diabetes, In 185 cases, 60 patients were affected by Diabetes Mellitus (33%), 58 patients possess Hypertension (32%), 35 General cases (19%) like Fever, Cold, Headache, 5 patients had Leukoderma (3%), 3 cases was found to have Eczema (1%),4 Skin itching cases (2%), and 20 patents affected by Hyperlipidemia (10%).

Highest Selling Drugs: This survey was conducted in 90 pharmacies in the various districts (Trichy, Karur, and Erode) of Tamilnadu. According to our study, The Highest selling drug category was found to be Anti-diabetic drugs (42%) followed by Anti-Hypertensive drugs (41%). Anti Hyperlipedimic drugs & NSAIDs were in third and fourth places. The selling pattern of different drugs for various diseases has shown in fig1
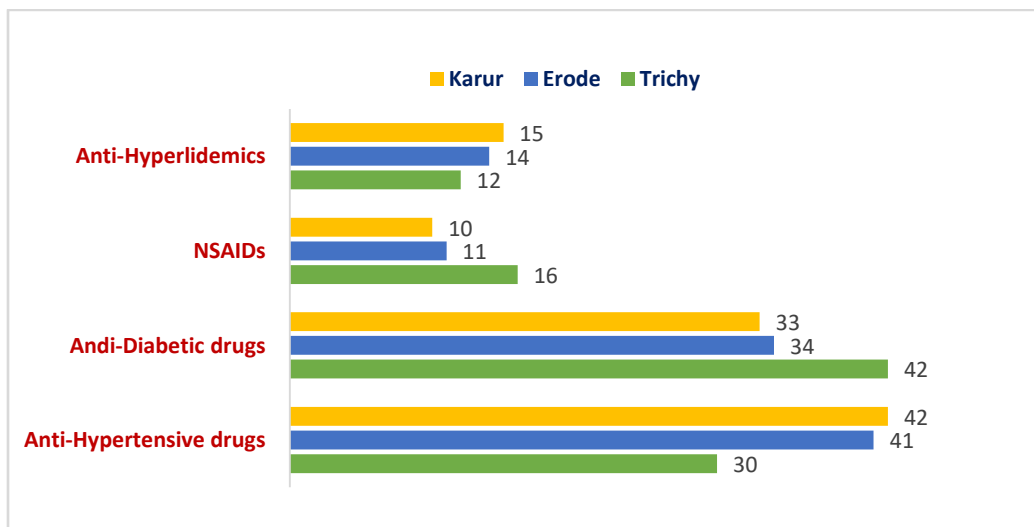

Fig 1: Highest selling drugs in various districts

Highly Prescribed Drugs For Hypertension: According to our survey of the 90 different pharmacies in the various districts of Tamilnadu, 48 pharmacy shops sold amlodipine to hypertension patients. Followed by Lisinopril (22), Atenolol (15,) and Losartan (7) (Table 1& Fig.2)

Table 1: Highest selling drugs in Hypertension

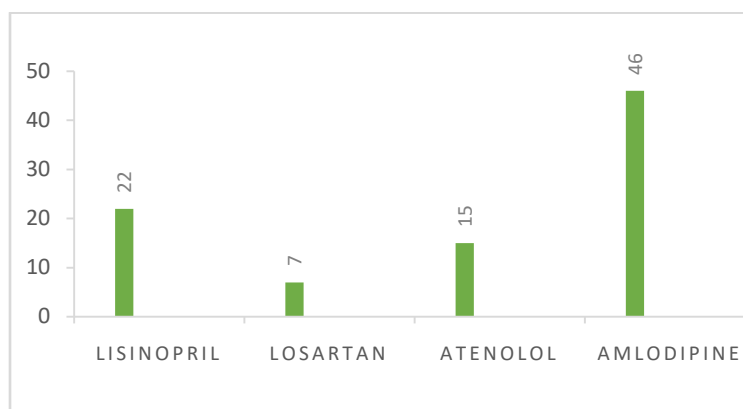| Drugs used for Hypertension	No. of Pharmacies
Lisinopril	22
Losartan	07
Atenolol	15
Amlodipine	46

Fig 2 Highest selling drugs in Hypertension

Highly Prescribed Drugs For Diabetes Mellitus:

In our survey among 90 pharmacies, 42 pharmacy shops sold the Metformin drug primarily to treat Diabetes Mellitus, followed by Tolbutamide (22), Glimepiride (1,4) and Acrabose (12) (Table 2 & Fig.3).

Table 2: Highest selling drugs in Diabetes Mellitus

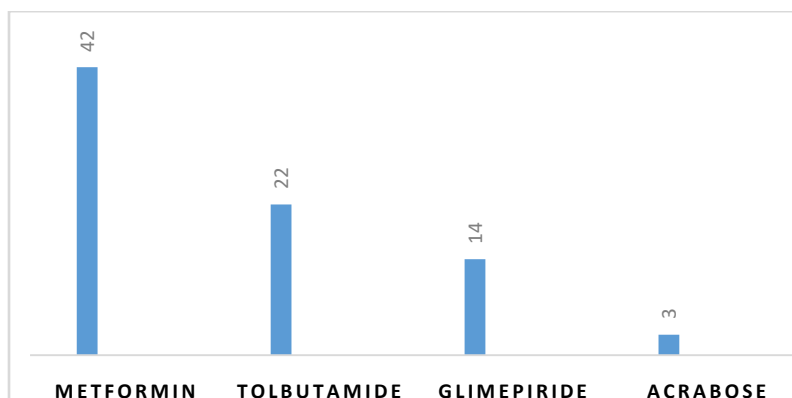| Drugs used for Diabetes Mellitus	No. of Pharmacies
Metformin	42
Tolbutamide Metformin	22
Glimepiride	14
Acrabose	12

Fig 3: Highest selling drug in Diabetes Mellitus

Highly Prescribed Drugs For Hyperlipidemia:

Our study found that 42 pharmacy shops out of 90, soldatorvastatin for treating Hyperlipidemia, followed by Lovastatin (23), Rosuvastatin (14), and Ezetimibe (6). Results are shown in Table 3 & Fig.4.

Table 3: Highest selling drug in Hyperlipidemics

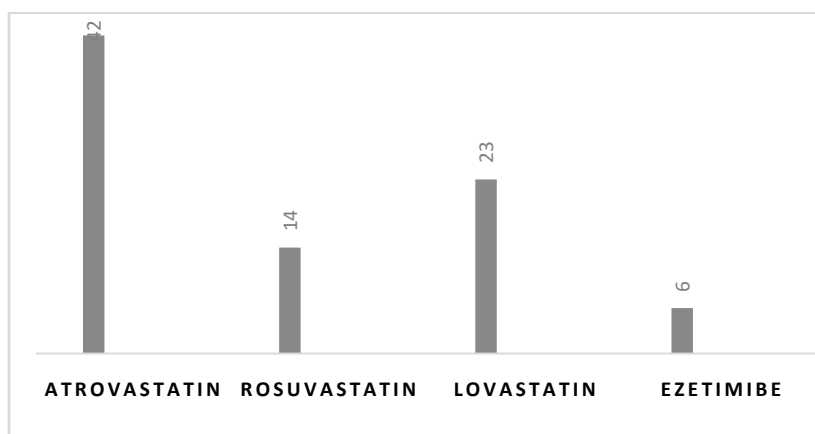| Drugs used for Hyperlipidemia	No. of Pharmacies
Atorvastatin	42
Rosuvastatin	14
Lovastatin	23
Ezetimibe	6

Fig 4: Highest-selling drug in Hyperlipidemics

Highly Prescribed Drugs For Nsaids:

In our survey among 90 pharmacies, 51 pharmacy shops sold the Diclofenac drug primarily to reduce swelling (Inflammation) and pain, followed by Ibuprofen (18), Indomethacin (13) and Naproxen (8) (Table 4 & Fig.5).

Table:4 Highest selling drug in NSAIDs

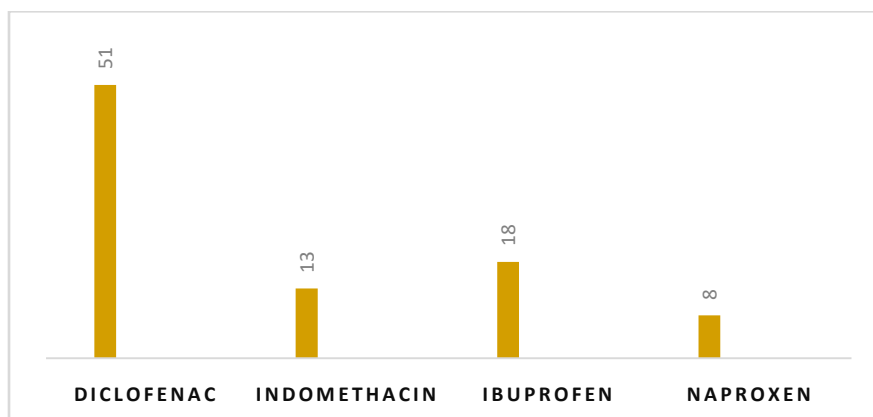| NSAID's Drugs	No. of Pharmacies
Diclofenac	51
Indomethacin	13
Ibuprofen	18
Naproxen	8

Fig 1.5 Highest selling drug in NSAIDs

DISCUSSION

Our study has explored the **Antihypertensive** and **Anti Diabetic drugs** has been the highest-selling drug among the various district of Tamilnadu. In the Anti-hypertensive drugs, Amlodipine was the most consumed drug when compared to the other drugs. The study population's prescription had the amlodipine drugs in the following brand names Amlopres, Amcard, Amlopin, Myodura, and Norvasc. Which denotes that the most preferred drug by physicians in the management of hypertension is Amlodipine.

In **Anti-Diabetic drugs, Metformin** is the highest-sold drug in various districts of Tamil Nadu in contrast with other oral Anti-Diabetic drugs. Melmet, Glycomet, Gluformin, and Cetapin, these brands are mostly prescribed by doctors to control the blood sugar level in patients having diabetes mellitus. Theselection of Metformin drug as compared to other drugs is because of its mechanismof action. Metformin acts by suppressinghepatic gluconeogenesis and glucose output from the liver. This is the majoraction responsible for lowering blood glucose in diabetics. It enhancesinsulin-mediated glucose uptake and disposal in skeletal muscle and fat.Insulin resistance exhibited by type-2 diabetics is thus overcome.

As **an Anti-Hyperlipidemic drug**, Atrovastain is the best-selling drug when compared to other drugs in our survey.**Atorvastatin** has been marketed under many brand names, but LIPITOR, ALTOR, ATORVA, and ATORLIP are highly followed by Physicians. It is because atorvastatin is a selective, competitive inhibitor of HMG-CoA reductase, the rate-limiting enzyme that converts 3-hydroxy-3-methylglutaryl-coenzyme A to mevalonate, a precursor of sterols, including cholesterol.

In NSAIDs, **Diclofenac** is the most consumed drug when compared to others. VOVERAN, DICLONAC, and MOVONAC are Diclofenac's most prescribed brand names in this study. Physicians mostly advise diclofenac to reduce inflammation and pain for its potential effects. Diclofenac acts on inhibiting cyclooxygenase-1 and Cyclooxygenase -2, these enzymes responsible for the production of prostaglandin (PG) G2, which is the precursor to other PGs. These molecules have broad activity in pain and inflammation, the inhibition of their production is the common mechanism linking each effect of diclofenac.

CONCLUSION

This survey was conducted in 90 pharmacy shops in various districts (Trichy, Karur, and Erode) of Tamilnaduto find out the *"Highest selling drug"*. The outcome of our study is that Anti-Diabetic drugs (Trichy) & Anti-Hypertensive drugs (Erode, Karur) were sold mostly in the above areas, indicating the prevalent disease of the particular geographical area. In the drug-wise category Amlodipine (Anti-Hypertensive drug), Metformin (Anti-Diabetic drug), Atorvastatin (Anti-Hyperlipidemic drug), Diclofenac (NSAIDs) were mostly preferred by the physician in various districts of Tamilnadu. In the study of exploration of*"Prevalent diseases"*. On the whole185 case details were collected from theFathima Health Care Centre-Trichy, Sudha Hospitals-Erode &Amirtha Medical Centre, and Hospital-Karur. It was observed that 60 patients were found to have Diabetes Mellitus and 58 individuals were affected by Hypertension followed by other disease conditions. Based on the outcomes, disease-based and drug-based counseling can be given to the respective patients of the various districts of Tamilnadu to enable them to live a disease-free, healthy life. Also, this study data would be helpful for creating awareness among those district people.

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