



**INTERNATIONAL JOURNAL OF  
PHARMACEUTICAL SCIENCES**  
[ISSN: 0975-4725; CODEN(USA):IJPS00]  
Journal Homepage: <https://www.ijpsjournal.com>



## Review Article

# Market Analysis of Antidiabetic Drugs in India

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### ARTICLE INFO

Received: 01 May 2024

Accepted: 05 May 2024

Published: 17 May 2024

#### Keywords:

Indian diabetic market,  
Growth, Size, trends, Market  
analysis

#### DOI:

10.5281/zenodo.11207904

### ABSTRACT

Diabetes mellitus is a class of diseases that affect how the body uses glucose, or blood sugar. Glucose is a vital energy source for the cells that make up muscles and tissues. It serves as the brain's main source of energy as well. The India Diabetes Care Drugs Market is estimated to be worth USD 1.7 billion in 2024 and is expected to reach USD 2.01 billion by 2029, growing at a CAGR of 3.5%. The incidence of diabetes in India is 101 million, with risk factors including race, age, obesity, physical inactivity, poor diet, behavioral behaviors, genetics, and family history. Controlling blood sugar, blood pressure, and lipid levels can help prevent diabetic complications. However, diabetes prevention and management in India face challenges such as a lack of a multisectoral approach, surveillance data, awareness of diabetes, risk factors, and access to affordable medicines. The increase in diabetes medication use in India can be attributed to growing awareness about diabetes and its complications, advancements in diabetes drug treatments, and the availability of a wide range of medications. This has led to better glycemic control and improved outcomes for many diabetic patients. Due to the increasing prevalence of diabetes in India, there is now increased focus on early detection and prevention, which has encouraged more individuals to seek medical advice and begin treatment sooner.

### INTRODUCTION

Diabetes is a chronic illness that occurs when the body cannot properly use or produce enough insulin, causing hyperglycemia, which can lead to major harm to bodily systems, particularly blood vessels and neurons. [1] In 2014, 8.5% of individuals aged 18 or older had diabetes, with 1.5 million deaths directly related to diabetes in 2019. Diabetes caused a 3% increase in age-standardized

death rates between 2000 and 2019, with a 13% rise in mortality in lower-middle income countries. However, between 2000 and 2019, there was a 22% global decline in the likelihood of dying from any of the four major noncommunicable diseases between the ages of 30 and 70. [2,15,24] India has 8.3% of diabetes mellitus (DM), with diabetic nephropathy being the primary cause of end-stage renal disease (ESRD) worldwide.[3]Chronic

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**Relevant conflicts of interest/financial disclosures:** The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.



kidney disease associated with diabetes is currently the seventh most frequent non-communicable disease worldwide, the sixth largest cause of disability, and the fourth largest cause of death. Diabetes-related nephropathy has been linked to increased healthcare spending and health resource utilization, leading to increased out-of-pocket expenses for patients. [4] The Drug Price Control Order (DPCO) was implemented by the National Pharmaceutical Pricing Authority (NPPA) to regulate pharmaceutical prices in India. [5,6,15,20] Patients with diabetic nephropathy are prescribed drugs such as nutritional supplements, antihypertensives, statins, antimicrobials, and antidiabetics, leading to polypharmacy and higher patient pharmaceutical costs. [7,15] Previous cost-variation studies have not taken into account a thorough assessment of every drug prescribed to patients with diabetic nephropathy. [8,9,15,20]

### **Types of Antidiabetic Drugs:**

#### **1. Enhance insulin secretion**

##### **1.1 KATP channel blocker**

###### **1.1.1 Sulfonylureas**

Tolbutamide

Glibenclamide

Glipizide

Gliclazide

Glimepiride

###### **1.1.2 Meglitinide/ phenylalanine analogues**

Repaglinide

Nateglinide

###### **1.1.3 Dipeptidyl peptidase (DDP-4) inhibitors**

Sitagliptin

Vildagliptin

Saxagliptin

Teneligliptin a

Alogliptin

Linagliptin

#### **2. Overcome insulin resistance**

##### **2.2 Biguanide (AMPk activator)**

Metformin

##### **2.3 Thiazolidinedione (PPAR $\gamma$ Activator)**

Pioglitazone

#### **3. Retard carbohydrate absorption**

##### **3.1 $\alpha$ -Glucoside inhibitors**

Acarbose

Miglitol

Volglibose

#### **4. Miscellaneous drugs**

##### **4.1 Sod-glucose cotransport-2 (SGLT-2) inhibitor**

Dapagliflozin

Canagliflozin

##### **4.2 Dopamine D2 agonist**

Bromocriptine

#### **Market Size and Growth:**

The Indian diabetes market, estimated at INR 316 billion in 2023, is expected to grow at a CAGR of 16% from 2024-2032, reaching INR 1201.74 billion by 2032. The incidence of diabetes in India is expected to reach approximately 10.1 crores by 2023. The growing awareness of diabetes symptoms and its health consequences is driving the market's value, leading to an increase in diabetes diagnoses and prescription treatment rates. Fast-paced urbanization and healthcare facility expansion are contributing to the diabetes industry's growth in India. The advent of cutting-edge technologies, low-cost drug manufacturing, and expanded pharmaceutical contract manufacturing has also accelerated the market's expansion. "Smart insulin" was unveiled in July 2023 by the Indian Institute of Technology (IIT) Bhilai and Shiv Nadar University, offering an extended insulin release time of up to two days. Leading health platforms like BeatO App have announced physical clinic collaborations to meet the high demand for diabetes in India. The diabetes industry's growth is accelerated by fast-paced urbanization, healthcare facility expansion, and advancements in technology and pharmaceutical contract manufacturing. [10,16,21,22]

#### **Highlights:**



- It is a major participant in the market for anti-diabetes drugs in India, a nation with a burgeoning population and rising healthcare demands. [11]
  - The predicted revenue for this market segment in India in 2024 is INR US\$2.34 billion. [11]
  - As for the future, it is anticipated that the market will expand at a constant annual rate (CAGR 2024–2028) of 5.87%, reaching a total market value of INR US\$2.94 billion by 2028. [11]
  - In the future, the market is anticipated to increase at a consistent rate of 5.87% per year (CAGR 2024–2028), which would result in a market volume of INR US\$2.94 billion by 2028. [11]
  - This demonstrates how the US holds a commanding position in the international market. [11]
  - India is experiencing a surge in demand for anti-diabetes drugs due to an increase in sedentary lifestyles and unhealthy diets. [11]
- Sun Pharmaceutical (IND)
  - Cipla (IND)
  - Dr. Reddy's Laboratories (IND)
  - Torrent Pharmaceuticals (IND)
  - Zydus Lifesciences (IND)
  - GlaxoSmithKline
  - Novartis
  - Novo Nordisk
  - Sanofi
  - Cadila Healthcare Limited
  - Glenmark Pharmaceutical Limited

### Key Industry Development:

#### March 2023

The Central Drugs Standard Control Organization (CDSCO) in India granted Sanofi (India) marketing permission for their diabetic medication Soliqua (in a pre-filled pen). **February 2023** The contract pharma manufacturer Akums Drugs and Pharmaceutical Limited declared the introduction of the medication "Lobeglitazone" for the management of type 2 diabetes in India. In **December 2022**, Glenmark Pharmaceuticals Ltd. introduced a novel medication for the treatment of type-2 diabetes in India under the Zita-Pio Met brand. Teneligliptin, the first triple fixed-dose combination (FDC) containing metformin and pioglitazone, was introduced by the business.

**October 2022** saw the introduction of the medication Lobeglitazone by Glenmark Pharmaceuticals Ltd. in India for the management of adult type 2 diabetes. **May 2022** In addition to diet and exercise, the U.S. Food and Drug Administration approved Eli Lilly and Company's Mounjaro (tripeptide) injection to help adults with type 2 diabetes better regulate their blood sugar levels. The Indian business NatcoPharma introduced the generic versions of AstraZeneca's exclusive anti-diabetes medication, Farxig, in **March 2021**. The generic medication will be marketed as Dapnat and come in tablet versions including 5 mg and 10 mg. Eli Lilly and Co. and

### India Diabetes Market Segmentation:

#### Key Players:

Novo Nordisk A/S, Eli Lilly and Company, and Sanofi dominate the global market for anti-diabetic medications, with a majority share of revenue. This dominance is attributed to increasing partnerships, investments in research, and strategic plans to supply affordable anti-diabetic drugs to low-resource countries. Sanofi and Eli Lilly currently control over half of the global market for diabetic medications. Other companies involved in the global market include AstraZeneca, Novartis AG, Boehringer Ingelheim International GmbH, and Merck & Co., Inc. These companies are working on strategic alliances and widespread product approvals. The leading organizations are expected to drive global market growth by 2030, with a compound annual growth rate (CAGR) of 7.8%. [12,18,23]



Boehringer Ingelheim were granted FDA approval in **January 2021** for the first oral therapy that combines three medications into a single tablet for the treatment of Type 2 diabetes. The combo medication contains the DPP IV inhibitor linagliptin, the SGLT2 inhibitor empagliflozin, and the extended-release version of metformin hydrochloride. In **December 2021**, Mankind Pharmaceuticals and Glenmark Pharmaceuticals collaborated to commercialize the anti-diabetic drug remogliflozin, a move that facilitated the expansion of both companies in the Asia Pacific area. [12,18,25]

#### **Market Drivers:**

India's diabetes market is expanding due to rising rates of pharmacological treatment and diagnosis, consumer awareness of diabetes symptoms, and the country's rapidly developing healthcare infrastructure and urbanization. The advent of cutting-edge technologies, low-cost drug manufacturing, and growth of pharmaceutical contract manufacturing contribute to the sector's development. In order to promote the production and use of diabetes medications, the Indian government has put in place programs like the Ayushman Bharat plan and the National Program for Prevention and Control of Cancer, Diabetes, Cardiovascular Diseases, and Stroke (NPCDCS). These activities are anticipated to further boost the market. [13,23]

#### **Market Restraints:**

The India diabetes therapeutics market's growth is expected to be hindered by high research and development costs, technological advancements, strict pricing policies, intellectual property rights protection, and regulatory approvals for quality control. [13]

#### **India Diabetes Care Drugs Market Analysis:**

The India Diabetes Care Drugs Market is expected to reach USD 2.01 billion by 2029, with a projected size of USD 1.7 billion in 2024. The Indian Council of Medical Research, India

Diabetes (ICMR INDIAB) report reveals that 101 million people in India have diabetes, with risk factors including race, age, obesity, poor diet, behavioral patterns, genetics, and family history. Behavioral interventions can help prevent or delay the onset of diabetic complications. However, diabetes prevention and management in India face challenges such as a lack of a multisectoral approach, surveillance data, knowledge of diabetes, risk factors, and complications, accessibility to healthcare facilities, and affordable medications. The rise in diabetic medication use in India is attributed to increased public awareness of the disease and improvements in diabetes medication therapies. The availability of various treatments, including insulin injections, oral medications, and recent drug classes like SGLT-2 inhibitors and GLP-1 receptor agonists, allows medical professionals to customize treatment regimens for specific patients, leading to better glucose control and better results. As diabetes becomes more common in India, there is a growing focus on early detection and prevention, encouraging more individuals to consult a doctor and begin treatment early. This proactive strategy has improved the quality of life for diabetics and reduced the burden of complications associated with diabetes. [14,17,19,21,22]

#### **India Diabetes Care Drugs Market Trends:**

Diabetes is a lifelong disease with no known treatment, affecting patients financially, socially, and emotionally. In India, metformin is the first choice for oral antidiabetic medications at the onset of diabetes. In the early stages, metformin is used in various ways, with a trend shift in 55% of metformin-treated patients. The percentage of people taking metformin does not change from 0 to 20 years old. When a person has diabetes for 10 to 15 years, the percentage of sulfonylurea and dipeptidyl peptidase-4 inhibitors (DPP4i) rises from 23.12% and 22.5% in years 0 to 5 to 70.77% and 60% in years 10 to 5. The ratio of DPP4i to



sulfonylurea doesn't change, and insulin and sodium/glucose cotransporter 2 inhibitors become more prevalent. Between ages 5 to 10 and 20 years or more, there is a slight increase in the percentage of alpha-glucosidase inhibitors. The Indian government's support has led to a rise in drug usage over the predicted period. [14,21]

### **India Diabetes Care Drugs Industry Overview:**

The Indian diabetes drug market is dominated by a few major generic companies, including Novo-Nordisk, Sanofi, AstraZeneca, and Bristol Myers Squibb, which control the majority of insulin and SglT-2 medicines markets. Other generic competitors include sulfonylureas and meglitinides. These players compete intensely to create novel drugs and sell them at competitive prices. They are also expanding into emerging economies to gain a larger market share. [14,21,23]

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**HOW TO CITE:** Sonia Ranawat, Vikram Singh, Piyush Bhatt, Market Analysis of Antidiabetic Drugs in India, *Int. J. of Pharm. Sci.*, 2024, Vol 2, Issue 5, 787-793. <https://doi.org/10.5281/zenodo.11207904>

