

# Awareness survey for antidiabetic drug adverse reaction in community pharmacists (Amravati)

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## ABSTRACT

**Introduction:** Adverse drug reaction (ADR) data from other countries may neglect care trends in local populations; hence, active national pharmacovigilance initiatives are required. Any surveillance system's effectiveness depends on reporters' engaged involvement. This initiative attempts to define pharmacist reporting of possible ADRs in diabetic medications. This survey was created after a thorough examination of the pertinent published studies in the literature. The questions included a wide range of topics, such as ideas for process improvements, pharmacist knowledge of and experience with reporting suspected ADRs, attitudes about health professionals' involvement in pharmacovigilance, and perceived obstacles and facilitators to reporting. **Aim:** This project aims to describe pharmacists reporting adverse drug reactions to anti-diabetic drugs. **Objectives:** The aim of the study was to assess knowledge of pharmacist in identifying, reporting, manage ADR and to know obstacles in reporting ADR, and attitude of pharmacist toward reporting ADR. **Conclusion:** The pharmacists need to upgrade knowledge and should be aware about all the aspects of ADR.

**Keywords:** Antidiabetic drug, Pharmacovigilance, Community pharmacist

## Introduction

More than 400 million individuals worldwide are affected by diabetes mellitus (DM), a serious public health problem.<sup>[1]</sup> Chronic microvascular, macrovascular, and neuropathic life-threatening consequences are caused by this metabolic disease over time.<sup>[2]</sup> Diabetes mellitus (DM) is brought on by a lack of insulin production, injury to pancreatic cells or insulin resistance brought on by inadequate insulin utilization.<sup>[3-7]</sup> The trend toward a sedentary lifestyle may be the main cause of the rising number of diabetes patients worldwide, which is predicted to reach 366 million in the older population (>65 years) by 2030.<sup>[8]</sup> Nephropathy, neuropathy, cardiovascular and renal issues, retinopathy, food-related illnesses, and more are among the many consequences linked to DM. The two varieties of DM are Type 1 and Type 2. Type 1 diabetes mellitus is an autoimmune condition that affects pancreatic cells and decreases or inhibits insulin production, while Type 2 diabetes mellitus is caused by a deficiency in pancreatic beta cells, which makes it difficult for people to utilize

insulin.<sup>[9]</sup> There are two basic subtypes of diabetes mellitus and there are several reasons for each.<sup>[10]</sup>

Type-1DM (T1DM): The immune system unintentionally targets pancreatic cells, where genes play a crucial role.<sup>[11]</sup>

Type II DM: (T2DM): The interaction between hereditary and lifestyle variables is crucial.

Obesity or being overweight raises the dangers.<sup>[11]</sup>

Treatment of both types differs and ADR also differs with different patients.

## ADR

The objective of pharmacological treatment is to treat a patient's disease as well as possible while minimizing side effects. Typically, these risks are referred to as adverse medication responses (ADRs). ADRs were described by the WHO as unanticipated and undesirable side effects of substances administered at dosages typically used in humans for therapeutic, preventive, or diagnostic purposes or to alter physiological function.<sup>[12]</sup> For instance, it took around 80 years for aspirin to be identified as a leading contributor to stomach bleeding.<sup>[13]</sup> According to statistics, more than 1 million patients

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are admitted to hospitals and more than 150,000 people pass away in India every year as a direct consequence of using prescription or over-the-counter medications.<sup>[14]</sup> In addition, many patients get ADRs while they are in the hospital. Thus, drug-induced sickness may often be detected by diligent treatment monitoring by pharmacists, and in many cases, these illnesses can be avoided.<sup>[15]</sup> ADRs must be reported to the appropriate drug authorities by pharmacists. About 10–20% of hospitalized patients report having an adverse drug reaction.<sup>[16]</sup> However, the majority of ADRs that happen in hospitals are modest.<sup>[17]</sup> The most frequent reason for drug-related hospital admissions — affecting around 25% of all patients — are ADRs (10%).<sup>[18]</sup> About 15% of the hospitalizations were due to non-compliance, ineffective treatment, drug abuse, and drug overdose.<sup>[19]</sup> Hospital pharmacists have unquestionably established positions for themselves in the clinical setting. The patient's medicines should first and foremost be understood (e.g., drug allergies and duplication of medications with comparable pharmacologic action).<sup>[20,21]</sup>

## Methodology

The ADR suspected in antidiabetic therapy item survey was created after a thorough study of the pertinent published studies in the literature. The questions included a wide range of topics, such as ideas for process improvements, pharmacist knowledge of and experience with reporting suspected ADRs, attitudes about health professionals' involvement in pharmacovigilance, and perceived obstacles and facilitators to reporting.

The Amravati district's 100 pharmacists were targeted for the ADR suspected antidiabetic therapy base survey.

We collected data among the 100 registered pharmacists in the Amravati district based on some common questions related to PV and ADR suspected of antidiabetic therapy. We asked the following question to the pharmacist about ADR suspected in antidiabetic therapy they responded to follows question in the form of yes or no. These data are considered to conclude the survey.

### Question set-1: Common questions

1. Do you know about Pharmacovigilance?
2. Do you know about adverse drug reactions?
3. Do you know How to report adverse drug reactions to authorize person or office?
4. Do you know how to identify adverse drug reactions?
5. Do you know which new techniques were used in finding Adverse Drug reactions?

### Question set-2: Question-related to antidiabetic drug

1. Do you know about the new antidiabetic drugs launched in recent 5 years?
2. Do you counsel about ADR of antidiabetic drugs with a patient?
3. Do the combination of antidiabetic drug change with the age of the patient?

4. Do you know about the most common toxicity of antidiabetic drugs?
5. Whether the patients report ADR to you?
6. Do you know which simultaneous treatment the patient is taking?
7. Does the patient adhere to the prescription?
8. Do all suspected ADRs associated with drug-drug, Drug-Food interactions?
9. Are you involved in the treatment decisions?
10. Do you think the major cause of diabetes is heredity?
11. Do you think lifestyle modification is required for diabetic patients?
12. Do you think Insulin is most preferable over the OAD (oral antidiabetic Drug)?

## Results and Discussion

This is the first study to evaluate knowledge, experiences, and attitudes about spontaneous ADR reporting of antidiabetic drugs among pharmacists in the Amravati district. We conduct a survey of pharmacists in the Amravati district on the common question about ADR reporting and some questions on ADR of antidiabetic drugs. We collected an ADR survey from the city of Amravati district Warud, Paratwada, and Amravati city.

The questions asked to the pharmacist of Amravati from question set 1 and 2 and the response is represented graphically in Figures 1 and 2, respectively.

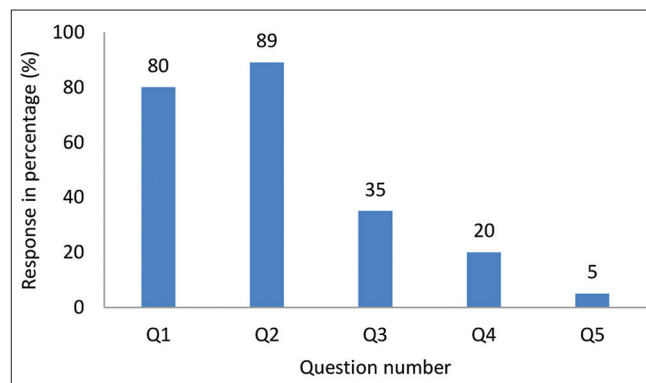


Figure 1: Response (yes/positive) in percentage for the question set 1

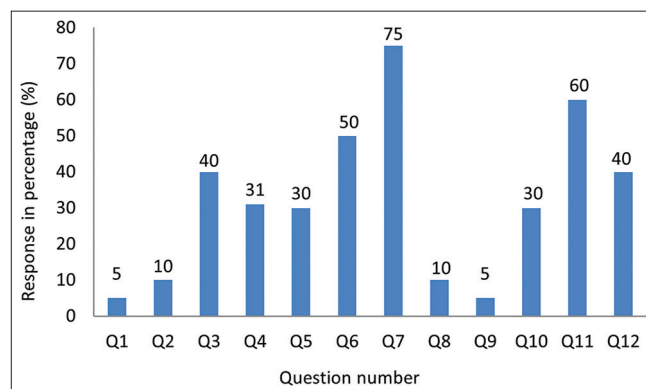


Figure 2: Response (yes/positive) in percentage for the question set 2

When the pharmacist asked about pharmacovigilance, 80% of pharmacists were knowing about it but the rest 20% did not have an idea about it. About 89% of pharmacists were known about the adverse drug reactions. Only 35% of pharmacists knew how to report ADR and where. About 65% of pharmacists did not know about the method to report ADR. About 20% of pharmacists were able to identify the ADR, this may be because of the practice of pharmacists in India which is oriented to prescription-only, and no clinical practice of pharmacists is present in India. It was quite difficult to know that only 5% of pharmacists know the techniques to identify ADR.

Latest antidiabetic drugs were known to 5% pharmacists only. Only 10% of pharmacists counsel patients while dispensing the ADR of drugs. About 40% of pharmacists noticed that the combination of antidiabetic drugs changes according to the age of the patient and the period of suffering from diabetes. About 31% of pharmacists know about the major toxicity of anti-diabetic drugs. About 30% of pharmacists had a history of reporting ADR from patients while dispensing. About 50% of pharmacists were well known for patient simultaneous therapies. About 75% of pharmacists said that patients have adhered to prescriptions for the treatment of diabetes. About 10% of pharmacists say the adverse effects are due to the negligence of the patient. In general, these patients are on polypharmacy and drug-drug interaction leads to ADR. OTC products are also consumed by these patients and these create worsening the situation. Sometimes drug-food interaction reactions create unwanted symptoms in patients. In Amravati, only 5% of pharmacists are involved in treatment decisions in case of diabetes. About 30% of a pharmacist has the opinion that the major cause of diabetes is heredity. About 60% of pharmacists showed that patients with diabetes should change their lifestyle to adapt to treatment fast and effectively. About 40% of pharmacists think that insulin therapy is better the oral anti-diabetic agents while 60% said that patients are not comfortable with insulin therapy, they prefer oral anti-diabetics in treatment.

## Conclusion

As we discussed the results, pharmacists of Amravati should be updated for counseling knowledge, and reporting of ADR and patient-oriented services should be promoted to a pharmacist. This will create a good impact on the health-care system.

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