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SHORT COMMUNICATION

Pharmacovigilance and Drug Regulatory Authority of Pakistan (DRAP): A Short Communication

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ABSTRACT

In the past, many events led to the need for the development of drug regulatory authorities. One of these major occurrences was the Thalidomide crisis in 1950, which impacted 10,000 babies and left many of them with severe limb deformities (phocomelia) and no limb development. This was a pivotal point since it brought drug officials' attention to a need. Adverse reactions to drugs (ADR), which might include lack of efficacy and other unpleasant and unexpected drug responses, are a basic point of interest in pharmacovigilance. There are drug regulatory authorities to ensure laws for evaluation, and benefit-risk analysis, which is then followed by monitoring action to ensure the security of the drugs. They are tasked with monitoring the safety of medicines by gathering adverse events through passive and active surveillance. In Pakistan promoting the safety and monitoring of medicinal commodities is regulated by the Drug Regulatory Authority of Pakistan (DRAP). According to the 2017 Bio-Study Rules, all substances used for therapeutic purposes such as pharmaceutical, biological, herbal, homeopathic products, and medical equipment in Pakistan must be registered with the Drug Regulatory Authority of Pakistan (DRAP) and get formal authorization (license for Clinical Trial Site and Clinical Studies).

Keywords: Pharmacovigilance, Drug monitoring, Clinical trial.

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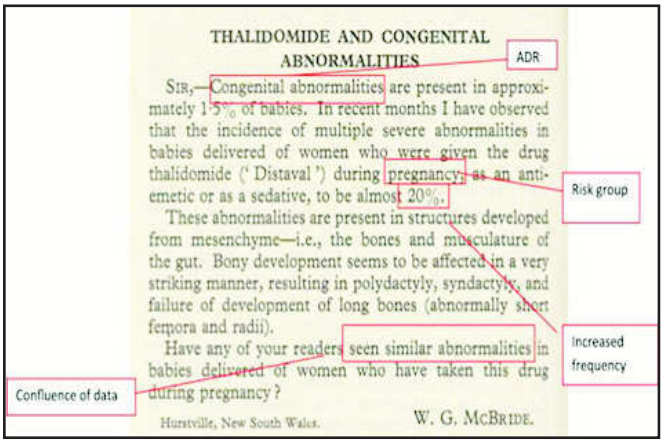
INTRODUCTION

The term "pharmacovigilance" combines the terms "pharma," which refers to pharmaceuticals, and "vigilare," which means to watch. As a result, adverse reactions to drugs (ADR), which might include lack of efficacy and other unpleasant and unexpected drug responses, are a basic point of interest in pharmacovigilance. Medication mistakes including overdose, drug addiction, misuse, and exposure to medicines when pregnant or breastfeeding are important even in the absence of an adverse event since they may cause an undesirable pharmacological reaction. Thus, the term "pharmacovigilance" refers generically to the pharmacological side effects in the body.[1,2]

Global health regulatory organizations, such as the European Medicines Agency, the Medicine and Health Product Regulatory Agency of the United Kingdom, and others, are tasked with monitoring the safety of medicines by gathering adverse events through passive and active surveillance. These regulatory authorities put laws into effect based on signals that are noticed, evaluated, and benefit-risk analysis, which is then followed by monitoring action to ensure the security of the drugs that are sold.[3] In Pakistan, these situations are brought before the PRAEC (Pharmacovigilance Risk Assessment Expert Committee) by the National Pharmacovigilance Centre of the Drug Regulatory Authority of Pakistan (DRAP), and a thorough examination of the issues is taken into consideration.[4] The Division of Pharmacy Services was given the responsibility of creating pharmacovigilance centers and promoting the safety monitoring of medicinal commodities following the foundation of DRAP. To protect patients, the National Pharmacovigilance Centre (NPC) was founded. It began keeping track of any adverse drug reactions (ADRs) connected to the use of medicinal products across the nation. For the regular reporting of data, the NPC also began coordinating with provincial health departments, public health initiatives, and owners of registrations for therapeutic items. Provincial pharmacovigilance centers that are now operational are Punjab and Islamabad Pharmacovigilance Centre and the Federal Directorate of Immunization (FDI) Centre. In addition, NPC is encouraging other provinces to establish their pharmacovigilance facilities and to regularly report pertinent information on adverse events. The NPC has established recommendations for healthcare providers, patients, registration holders, public health programs, and provincial health departments for the collection, evaluation, and reporting of pharmacovigilance data to the NPC. The Pharmacovigilance Rules, 2022, which set down the responsibilities of each Pakistani stakeholder, were also made public by the DRAP. The Pharmacovigilance Risk Assessment Expert Committee (PRAEC) was informed of these Rules and commenced activities in 2022.[4] For the gathering of adverse events from Pakistani healthcare professionals, patients, and stakeholders, the NPC uses a variety of internationally standardized techniques. These are added to a national database, fully validated, and evaluated before being transmitted to a large international database (VigiBase). Following that, the NPC uploads the data with the safety alerts on its website.

The NPC promotes the reporting of adverse occurrences by patients and healthcare providers. Healthcare workers can contribute to making pharmaceuticals and therapeutic products safer for everyone by reporting adverse reactions, which will ultimately assist in making them safer for everyone and help to ensure patient safety. Due to the small sample size used, there is a lack of study into novel medications. Once new pharmaceuticals have been used by the general population for a while, many beneficial or detrimental may become apparent and may differ from patient to patient.[5] The Drug Regulatory Authority of Pakistan gathers reports and conducts further analysis to get information about new medications and to take appropriate action to protect other patients. One can contribute to the dissemination of knowledge regarding drug side effects by reporting them through an electronic reporting system. (DRAP website and MED Vigilance E-Reporting System at Pakistan National


THALIDOMIDE AND CONGENITAL ABNORMALITIES

SIR,—Congenital abnormalities are present in approximately 1·5% of babies. In recent months I have observed that the incidence of multiple severe abnormalities in babies delivered of women who were given the drug thalidomide ('Distaval') during pregnancy, as an antiemetic or as a sedative, to be almost 20%.

These abnormalities are present in structures developed from mesenchyme—i.e., the bones and musculature of the gut. Bony development seems to be affected in a very striking manner, resulting in polydactyly, syndactyly, and failure of development of long bones (abnormally short femora and radii).

Have any of your readers seen similar abnormalities in babies delivered of women who have taken this drug during pregnancy?

Hurstville, New South Wales. W. G. McBRIDE.

ADR
Risk group
Increased frequency
Confluence of data

Figure 1: McBride letter to authorities 12

Pharmacovigilance Centre).[4]

DRAP and clinical trial registry

Pharmaceutical, biological, herbal, and homeopathic products, as well as medical equipment, are all examples of investigational products. They also include registered or enlisted items, placebos, and unapproved therapeutic goods with any form of active component. Authorized products may be used in line with the registration or enlistment requirements, as appropriate, or in another fashion, at a greater dose, for a different indication, or when packaged with a different container closure system. These all drugs need to clear a trial and get registered before being sent to the market.[6,7]

These recommendations will give applicants who want to conduct clinical trials in Pakistan information on the measures to take and help investigators with the process of submitting applications for clinical trials. According to the 2017 Bio-Study Rules, all medical supplies and therapeutic products used in Pakistan must be registered with the Drug Regulatory Authority of Pakistan (DRAP) and get formal authorization (license for Clinical Trial Site and Clinical Studies) from DRAP.[7]

Need of drug regulatory authorities

In the past, many events led to the need for drug regulatory authorities. The first recorded instance of pharmacovigilance occurred 169 years ago, on January 29, 1848, when Hannah Greener, a little child from the north of England, passed away following the administration of a chloroform anesthetic before the excision of an infected toenail. Chloroform was a potent and safe anesthetic that Sir James Simpson had discovered and introduced into therapeutic use. To comprehend what happened to Hannah, the causes of her death were looked into, but it was impossible to determine what killed her. She most likely succumbed to pulmonary aspiration or a fatal arrhythmia.[8,9]

Due to the use of sulfanilamide elixir, which used diethyl glycol as the solvent, 107 people died in the USA in 1937. The manufacturers were not aware of this solvent's toxicity at the time, even though it was thought to be the cause of death.[10,11]

One of these major occurrences was the Thalidomide crisis in 1950, which impacted 10,000 babies and left many of them with severe limb deformities (phocomelia) and no limb development. This was a pivotal point since it brought drug officials' attention to a need.The tragedy of thalidomide brought to light several concerns, including the validity of animal testing, the conduct of the industrial business, and the significance of continuing to monitor medications after they re-marketed.[12,13] (Figure 1).

Another sad incident involving pharmacovigilance is the Vioxx controversy, which involves the anti-inflammatory medication Rofecoxib. The medicine was taken off the market in 2004 after research revealed an elevated risk of heart attack and stroke in users. According to later estimates, the medication was responsible for over 27,000 heart attacks and abrupt cardiac fatalities. If the stats of our country are taken into consideration, a year back, few anaphylactic instances involving the injection of diclofenac sodium were documented in Pakistan in 2022, according to current reports, and it was later recommended that this medication should be avoided by asthmatic patients.[7]

In the nearby city of Lahore in 2012, substandard cough syrup supplied under the brand name Tyno (Dexomethaphen) caused 30 fatalities. Nearly 20 persons in Gujranwala, Pakistan, died from the same medicine at the same time. A tragedy unfolded in Gujranwala, Pakistan, where nearly 20 individuals lost their lives simultaneously due to the consumption of the same medication.[14]

Recently in different areas of Pakistan, there were reports about Avastin injections given to diabetic patients in September 2023 to address retinal degeneration caused by long-term diabetes and other related conditions. However, these injections caused serious inflammation, which ultimately resulted in the blindness of almost 70 people. The use of these injections in hospitals, pharmacies, and by patients was outlawed nationally as a result of the reports of these occurrences, according to DRAP. No hospitals, laboratories, or pharmacies in Pakistan have a license to repackage these injections, according to DRAP officials.

Professionalism in pharmacovigilance

The following key factors can enhance professionalism in pharmacovigilance:

Proper data and timely reporting in all health-related sectors. Data evaluation by regulatory authorities. Utilization of technology and new AI-related tools. Globalization of the data and case reports. Display of reports through seminars, research papers, and conferences.[6]

CONCLUSION

Pharmacovigilance's history in general, is in the phase of evolution and adaptability. The field has expanded and developed to satisfy patient and healthcare provider demands from early civilizations to the present. We anticipate it will continue to develop and improve because

it still plays a crucial part in ensuring the safety and efficacy of medications today.

Authors contribution

RA, and NQ; Presented the main idea, provided the concept, did a literature search, writing, and approved the final version to be published. RA; Drafted the article, literature search and revised it critically.

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Conflict of interest

The authors of this study have no conflict of interest to declare.

Institutional ethical board approval

Not Applicable.

REFERENCES

1. Directive 2010/84/eu, Article 101" (PDF). ec.europa.eu. Retrieved October 26, 2015.
2. International Drug Monitoring: The Role of National Centers. Who-umc.org. Retrieved February 27, 2015.
3. García?Abeijon P, Costa C, Taracido M, Herdeiro MT, Torre C, Figueiras A. Factors associated with underreporting of adverse drug reactions by health care professionals: a systematic review update. Drug Saf. 2023;46(7):625?636.
4. Pharmacovigilance newsletter. Drug regulatory authority of Pakistan and pharmacovigilance center 2023; 1 (1).
5. Madhushika MT, Weerarathna TP, Liyanage PLGC, Jayasinghe SS. Evolution of adverse drug reactions reporting systems: paper-based to software-based. Eur J Clin Pharmacol. 2022 Sep;78(9):1385-1390.
6. Coloma PM, Trifiro G, Patadia V, Sturkenboom M. Postmarketing safety surveillance: where does signal detection using electronic healthcare records fit into the big picture? Drug Saf. 2013; 36:183-97.
7. Khan Z, Karatas Y, Martins MAP, Jamshed S, Rahman H. Knowledge, attitude, practice and barriers towards pharmacovigilance and adverse drug reactions reporting among healthcare professionals in Turkey: a systematic review. Curr Med Res Opin. 2022 ;38(1):145-154.
8. García-Abeijon P, Costa C, Taracido M, Herdeiro MT, Torre C, Figueiras A. Factors Associated with Underreporting of Adverse Drug Reactions by Health Care Professionals: A Systematic Review Update. Drug Safety. 202l; 6:1-2.
9. Calapai F, Mannucci C, Cardia L, Currò M, Calapai G, Esposito E, et al. Response to "Evaluating Adverse Events in Databases". Pharmacol Res Perspect. 2023; 11(5): e01127.
10. Deslandes PN, Bracchi R, Jones K, Haines KE, Carey E, Adams A, et al. Changes in suspected adverse drug reaction reporting via the yellow card scheme in Wales following the introduction of a National Reporting Indicator. Br J Clin Pharmacol. 2022; 88(8):3829-3836.
11. Rajpurohit P, Boddu G, Malvi A. Diethylene Glycol Poisoning-Past to Present. JPADR. 2022;3(4):9-14.
12. Dsouza NN, Alampady V, Baby K, Maity S, Byregowda BH, Nayak Y. Thalidomide interaction with inflammation in idiopathic pulmonary fibrosis. Inflammopharmacology. 2023;31(3):1167-82.
13. McBride WG. Thalidomide and congenital abnormalities. Lancet. 1961; ii:1358.
14. Shafi H, Imran M, Usman HF, Sarwar M, Tahir MA, Naveed R et al. Deaths due to abuse of dextromethorphan sold over-the-counter in Pakistan. Egyptian Journal of Forensic 2016; 6 (3): 280-283.

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