

# Pharmacovigilance: Safeguarding Vision

Asma Iqbal<sup>1</sup>, Muhammad Shaheer<sup>2</sup>  
College of Ophthalmology & Allied Vision  
Sciences, Lahore.

Ophthalmol Pak. - Official Journal  
of College of Ophthalmology &  
Allied Vision Sciences



This work is licensed under a Creative Commons  
Attribution-Non-Commercial 4.0 International  
License.

Pharmacovigilance defined by the World Health Organization as 'the science and activities relating to detection, assessment, understanding and prevention of adverse effects or any other drug-related problem' plays a key role in ensuring that patients receive safe drugs. Our knowledge of drug's adverse reactions can be increased by various means, including spontaneous reporting; intensive monitoring and database studies.<sup>1</sup>

Thalidomide was marketed in 1957 and was considered harmless for use in pregnancy by the manufacturer<sup>1</sup>. However, its use during pregnancy led to development of abnormal fetal and limb deformities in 46 countries worldwide.<sup>2</sup> The thalidomide tragedy served as a catalyst for the formation of Uppsala Monitoring Centre (UMC) as the World Health Organization (WHO) Collaborating Centre for International Drug Monitoring. UMC operates the technical and scientific aspects of the WHO's worldwide pharmacovigilance network.<sup>3</sup> Reports from adverse drug reactions (ADRs) are stored in a global database (VigiBase) and can be used by health professionals to evaluate the associations between various medications and associated ADRs. Drug Regulatory Authority of Pakistan (DRAP), established Pakistan National Pharmacovigilance Centre (PNPC) in 2015, under the division of Pharmacy Services to provide a basic framework for the implementation of pharmacovigilance programme of Pakistan at provincial and national level.<sup>4</sup> National data (VigiFlow) is directly connected to WHO Global Database (VigiBase).

In '2011' cases of blindness in 22 persons with

diabetes were reported in the USA, after intravitreal injection of Avastin (Bevacizumab) for treatment of wet age related macular degeneration.<sup>5</sup> Most recently, more than 20 persons were rendered blind as unregulated drug wreak havoc following off-label intravitreal administration of Avastin (Bevacizumab) injection 1.25mg/0.05ml dose under unhygienic conditions, as mentioned by regulators in Pakistan. This product is approved by the Drug Regulatory Authority of Pakistan (DRAP) to treat Colorectal and other metastatic carcinomas in 400mg/16ml and 100mg/ 4ml preparations. The use of this drug product in diabetic retinopathy or other ophthalmic conditions is not approved by DRAP. The incident is linked with the alteration/dispensing/dilution and sale of Avastin 100mg/4mL Injection under unhygienic/non-sterile conditions illegally and without any Drug Sale/Dispensing License (DSL) from Provincial Health Authority. There is no escape from monitoring the adverse effects, once the treatment has been started. In case of enteral routes, the management of adverse effects is possible in most scenarios, while, periocular routes (intravitreal) may lead to an irreversible damage to any ocular tissue (blindness caused by Avastin).

Proponents of off label use of avastin advocate that alternate drugs i.e Ranibizumab and Aflibercept cost very high as compared to Bevacizumab. The drug (Bevacizumab) is effective when used off-label<sup>6</sup>, however, when it is dispensed/diluted/ repacked in 1.25mg/0.05ml dose from bulk container under unhygienic conditions and in an unapproved manner, its safety cannot be ascertained, which may lead to damage and loss of vision in the

## How to Cite this Article:

Iqbal A, Shaheer M. Pharmacovigilance: Safeguarding Vision. Ophthalmol Pak. 2024;14(1):1-2

Doi: <https://doi.org/10.62276/OphthalmolPak.14.01.119>

## Correspondence: Asma Iqbal

College of Ophthalmology & Allied Vision  
Sciences, Lahore.

Email: [ambermalik20@googlemail.com](mailto:ambermalik20@googlemail.com)

Received: 20-12-2023 Accepted: 23-12-2023

patients. Sterile areas with safety cabinets, unidirectional air flow systems and High Efficiency Particulate air filters are the part and parcel for a secure aseptic filling of unit doses. Moreover, the sterility test must be applied to the finished product.

Unavailability of well-established online reporting system, easy to fill ADR forms, inadequate training, lack of awareness, motivation to report an ADR, are some of the barriers to comply with Pharmacovigilance guidelines. DRAP should strictly enforce regulations to rule out any chance of drug contamination alongside misuse of unregistered counterfeit drugs across the country. Further, it should ensure the implementation of Pharmacovigilance guidelines to halt such devastating incidents to be evident in future.

### CALL TO ACTION

1. Pharmacovigilance education is essential since availability of counterfeit and unregistered drugs and resultant adverse drug reactions (ADRs) pose a serious health problem and contribute to unnecessary patient burden and hospital admissions.
2. Establish Infrastructure to implement Good Manufacturing Practices for aseptic filling.
3. Our future healthcare providers should therefore acquire an adequate set of pharmacovigilance competencies to rationally prescribe, distribute, and monitor drugs.
4. Pharmaceutical companies should device an authentic system to monitor the adverse effects as a part of post marketing surveillance.
5. Barriers should be minimized by regular trainings, easy to fill forms, rewards and appreciation for reporting.
6. Mass media can play a significant role in educating communities.

### REFERENCES:

1. Reumerman M, Tichelaar J, Piersma B, Richir M, Van Agtmael M. Urgent need to modernize pharmacovigilance education in healthcare

curricula: review of the literature. *European J Clin Pharmacol.* 2018;74(10):1235-1248. <https://doi.org/10.1007/s00228-018-2500-y>.

2. Seidman LA, Warren N, Frances Kelsey & thalidomide in the US: A case study relating to pharmaceutical regulations. *Am biol teac.* 2002; 64(7):495-500. [https://doi.org/10.1662/0002-7685\(2002\)064\[0495:FKTITU\]2.0.CO;2](https://doi.org/10.1662/0002-7685(2002)064[0495:FKTITU]2.0.CO;2).
3. Tantikul C, Dhana N, Jongjarearnprasert K, Visitsunthorn N, Vichyanond P, Jirapongsanan uruk O. The utility of the World Health Organization-The Uppsala Monitoring Centre (WHO-UMC) system for the assessment of adverse drug reactions in hospitalized children. *Asia Pacific J Allerg & Immunol.* 2008;26(2-3):77.
4. Malik F, Shah S, Shah SM. The role of drug regulatory authority in ethical promotion of pharmaceuticals in Pakistan: A grounded theory study. *City Uni Res J.* 2021;11(1).
5. Goldberg RA, Flynn Jr HW, Isom RF, Miller D, Gonzalez S. An outbreak of streptococcus endophthalmitis after intravitreal injection of bevacizumab. *Am J Ophthalmol.* 2012;153(2): 204-8. <https://doi.org/10.1016/j.ajo.2011.11.03>.
6. Rich RM, Rosenfeld PJ, Puliafito CA, Dubovy SR, Davis JL, Flynn Jr HW, et al. Short-term safety and efficacy of intravitreal bevacizumab (Avastin) for neovascular age-related macular degeneration. *Retina.* 2006;26(5):495-511. DOI: 10.1097/01.iae.0000225766.75009.3a.