CHAPTER 1

National Registry of Drug-Induced Ocular Side Effects

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RATIONALE

In a specialized area such as ophthalmology, it is not common for a practitioner to see the patient volume necessary to make a correlation between possible cause and effect of medication-related ocular disease. Postmarketing observational studies from multiple sources permit the evaluation of drug safety in a real-world setting where off-label use and various practice patterns occur. There is no question that this has limited ability to determine causation, but it can detect signals that alert the clinician as to adverse drug events. In subspecialty areas of medicine with comparatively limited markets, sometimes this is all that we have. A national registry specifically interested in a specialized area of medicine has filled a need, as shown by the more than three decades of the National Registry of Drug-Induced Ocular Side Effects (NRDIOSE).

The NRDIOSE, which is based at the Casey Eye Institute in Portland, Oregon, USA (www.eyedrugregistry.com), is a clearinghouse of spontaneous reports collected mostly from ophthalmologists from around the world. It is the only database that collects only eye-related adverse drug reactions (ADRs). The MedWatch program run by the US Food and Drug Administration (FDA) (https://www.fda.gov/safety/medwatch-fda-safety-information-and-adverse-event-reporting-program) collects ADRs on all organ systems in the United States and is another source for reporting data and requesting data. The Uppsala Monitoring Center, a branch of the World Health Organization (WHO) in Uppsala, Sweden (www.who-umc.org), collects spontaneous reports on all organ systems from around the world and has more than 70 national centers that report to them, including the FDA. Finally, clinicians and patients frequently report an ADR directly to the drug company, who in turn periodically submits these spontaneous reports to the FDA.

Regardless of where an ADR is submitted, the various organizations mentioned here can be contacted with questions about an ADR or how many types of reports exist for specific drug–ADR combinations. The NRDIOSE provides this information free of charge to ophthalmologists, and the FDA is required to provide this information to the public through the Freedom of Information Act. The WHO may charge a fee, depending on the type of information requested. The information from pharmaceutical companies should eventually end up in the FDAs MedWatch database.

Spontaneous reporting databases have adopted statistical analyses methods of interpreting ADRs. At the Uppsala Monitoring Center, for instance, a quantitative method for data mining the WHO database is part of the signal detection strategy. Their method is called the Bayesian Confidence Propagation Neural Network (BCPNN). An Information Component (IC) number is calculated based on a statistical dependency between a drug and an ADR calculated on the frequency of reporting. The IC value does not give evidence of causality between a drug and an ADR; it is only an indication or signal that it may be necessary to study the individual case reports in the WHO database. The IC value calculation is a tool that can guide the WHO to create a hypothesis of association between drugs and ADRs among the over 3 million case reports in the WHO database.

This method of analysis is also being adopted within the pharmaceutical industry and at the FDA. The NRDIOSE is also able to use the IC values because its staff are consultants to the WHO. If a clinician suspects an ADR, especially if it may be a new drug-induced ocular side effect, he or she is encouraged to report this to the NRDIOSE. Access to the website is free.

OBJECTIVES OF THE NATIONAL REGISTRY OF DRUG-INDUCED OCULAR SIDE EFFECTS

The Registry

- To establish a national center where possible drug-, chemical-, or herbal-induced ocular side effects can be accumulated.

- To review possible drug-induced ocular side-effects data collected through the FDA, WHO Monitoring Center, and our registry.
- To compile data in the world literature on reports of possible drug-, chemical-, or herbal-induced ocular side effects.
- To make available these data to physicians who feel they have a possible drug-induced ocular side effect.

HOW TO REPORT A SUSPECTED REACTION

The cases of primary interest are those adverse ocular reactions not previously recognized or those that are rare, severe, serious, or unusual. To be of value, data should be complete and follow the basic format shown here:

Age:
Gender:
Suspected drug:
Suspected reaction date of onset:
Route, dose, and when drug started:
Improvement after suspected drug stopped. If restarted, did adverse reaction recur?:
Other drug(s) taken at time of suspected adverse reaction:
Other disease(s) or diagnosis(es) present:
Comments optional (your opinion if drug induced, probably related, possibly related, or unrelated):
Your name and address (optional):
Send to:
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FURTHER READING

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