ESSENCE

ALL INDIA INSTITUTE OF MEDICAL SCIENCES, MANGALAGIRI

PHARMACOLOGY BULLETIN

MARCH-APRIL 2021, ISSUE 9 (SPECIAL CME ISSUE)

FROM THE EDITORIAL DESK….

Dear Friends, Greetings from AIIMS Mangalagiri & Welcome to the Ninth (Special CME Issue) of ESSENCE.

The Pharmaco-vigilance programme of India (PvPI) which was initiated by the Government of India in 2005 has now grown into a robust programme, keeping a watchful eye on suspected adverse drug reactions across the country. Adverse Drug Reactions Monitoring Centre (AMC) are the nerve centres of PvPI, looking for any ADR signals, analyzing them and reporting them, with the ultimate goal of making drugs safer for the patients. It is a matter of great pride that in a span of less than two years of establishment, AIIMS Mangalagiri has been approved as an AMC under the PvPI.

To increase the awareness and sensitization of ADR reporting, the Department of Pharmacology is conducting a CME for the doctors and nursing officers of AIIMS Mangalagiri. A poster competition on 'Adverse Drug Reactions- Detection, Assessment and Prevention' is also part of the CME. The CME comes close on the heels of the 'National Pharmacovigilance week' which is being celebrated across the country by PvPI in this month.

This special edition of 'ESSENCE' is dedicated to the various aspects of safety monitoring and has short write-ups on Pharmacovigilance, Materiovigilance, Ecopharmacovigilance, Cosmetovigilance, Haemovigilance, etc. This issue also highlights the regulatory actions taken by CDSCO based on the signals generated by PvPI. Finally, the readers can flex their cerebral muscle with the cross-word on 'Drugs that have been withdrawn due adverse effects.

Happy Reading.

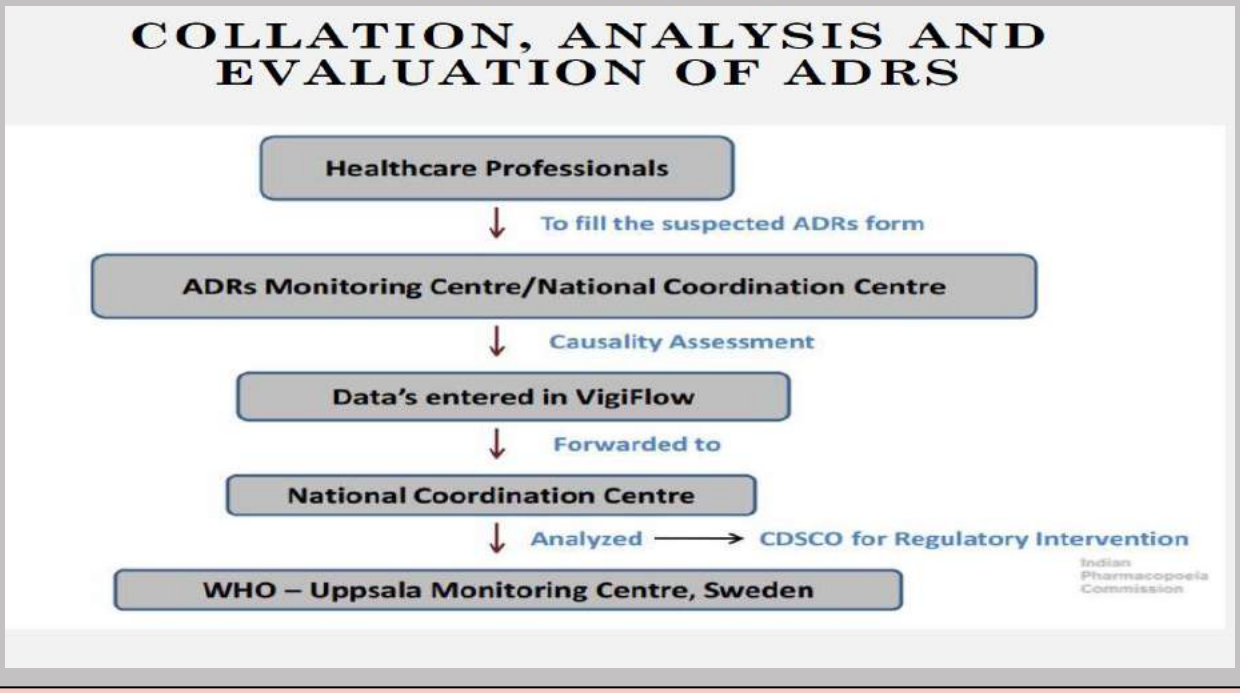
Jai Hind

Feedback and Suggestions may be sent to Department of Pharmacology, All India Institute of Medical Sciences, Mangalagiri, Andhra Pradesh at email id: pharmacology@aiimsmangalagiri.edu.in

The World Health Organization (WHO) defines adverse drug reaction (ADR) as "A response to a drug, which is noxious and unintended, and which occurs at doses normally used in man for the prophylaxis, diagnosis, or therapy of disease, or the modifications of physiological function. Adverse Drug Reactions (ADRs) continue to remain an important public health issue and among the leading causes of morbidity and mortality. ADRs are among the leading causes of death in many countries (World Health Organization, 2008). Safety monitoring of medicines is the responsibility of all stakeholders of the healthcare system and is crucial for health policy development and delivery of the best health care.

The importance of ADR reporting is to establish safety of new drug and continuous ongoing reporting to evaluate current therapeutics status. As, India has vast genetic and ethnic variability so it is important to note adverse reactions on this parameter; use of multi model practices (Polypharmacy) and poor patient compliance.

The Pharmacovigilance Programme (PvPI) of India was initiated by the Government of India in July 2010 and the National Coordination Centre (NCC) of PvPI is based at the Indian Pharmacopoeia Commission at Ghaziabad. PvPI aims is to collate the data and use the inferences to recommend regulatory interventions, besides communicating risks to healthcare professionals and the public. This is done through a network of various ADR monitoring centers working in health care establishments across the country. The need for pharmacovigilance is to protect patients from unnecessary harm, to decrease the healthcare cost, to create sufficient data for safety of new drug approved, to generate signal detection, detection of new and exceptional ADRs on patients' subgroups based on race and ethnic variability and subgroups like paediatrics, geriatrics, pregnant women, promoting rational use of medicines and its adherence, and boosting public confidence for safe and proper use of medicines. The main data sources for pharmacovigilance programme are the patients, national health programs, marketing authorization holders and ADR monitoring centres. The process of collation, analysis and evaluation of ADRs in PvPI as follows:



Version-1.3

SUSPECTED ADVERSE DRUG REACTION REPORTING FORM

For VOLUNTARY reporting of Adverse Drug Reaction by Healthcare Professionals
INDIAN PHARMACOPOEIA COMMISSION(National Coordination Centre-Pharmacovigilance Programme of India)
Ministry of Health & Family Welfare, Government of India Sector-23, Raj Nagar, Ghaziabad-201002

A. PATIENT INFORMATION

1. Patient Initials _____	2. Age at the time of Event or Date of Birth _____	3. M □ F □ Other □ 4. Weight_____Kgs

Reg. No. /IPD No. /OPD No. /CR No. :
AMC Report No. :
Worldwide Unique No. :

B. SUSPECTED ADVERSE REACTION

5. Event/Reaction start date (dd/mm/yyyy)
6. Event/Reaction stop date (dd/mm/yyyy)
6 (A). Onset Lag Time
7. Describe Event/Reaction with treatment details, if any

12. Relevant tests/ laboratory data with dates

13. Relevant medical/medication history (e.g. allergies, race, pregnancy, smoking, alcohol use, hepatic/renal dysfunction, past surgery etc.)

14. Seriousness of the reaction: No □ if Yes □(please tick anyone)
□ Death (dd/mm/yyyy) □ Congenital-anomaly
□ Life threatening □ Disability
□Hospitalization/Prolonged □ Other Medically important

15. Outcomes
□ Recovered □ Recovering □ Not recovered
□ Fatal □ Recovered with sequelae □ Unknown

C. SUSPECTED MEDICATION(S)

S.No	8. Name (Brand/Generic)	Manufacturer (if known)	Batch No. / Lot No.	Exp. Date (if known)	Dose used	Route used	Frequency (OD, BD etc.)	Therapy dates: Date started	Therapy dates: Date stopped	Indication	Causality Assessment
i											
ii											
iii											
iv*											

S.No as per C	9. Action Taken (please tick) Drug withdrawn	Dose increased	Dose reduced	Dose not changed	Not applicable	Unknown	10. Reaction reappeared after reintroduction (please tick) Yes	No	Effect unknown	Dose (if reintroduced)
i										
ii										
iii										
iv										

11. Concomitant medical product including self-medication and herbal remedies with therapy dates (Exclude those used to treat reaction)

S.No	Name (Brand/Generic)	Dose used	Route used	Frequency (OD, BD, etc.)	Therapy dates: Date started	Therapy dates: Date stopped	Indication
i							
ii							
iii*							

Additional Information:

D. REPORTER DETAILS

16. Name and Professional Address:_____
_____
Pin:_____E-mail_____
Tel. No. (with STD code)_____
Occupation:_____ Signature:_____

17. Date of this report (dd/mm/yyyy):

Sig. and Name of Receiver-

Confidentiality: The patient's identity is held in strict confidence and protected to the fullest extent. Submission of a report does not constitute an admission that medical personnel or manufacturer or the product caused or contributed to the reaction. Submission of an ADR report does not have any legal implication on the reporter.

*use separate page for more information

Serious AEFI Case Notification Form – ADR Monitoring Center*

ICSR No. _____	**Reporting Format No.**
Name & address of ADR Monitoring center (AMC):	
Patient Name	
Age: _____	Sex: Male/Female
Father/Husband's Name	
Complete Address of the Case with landmarks *(Street name, house number, village, block, Tehsil, PIN No., Telephone No. etc.)*	
P I N - P H O N E -	
Date of Vaccination: __ __/__ __/__ __ __ __ Address of health facility where vaccinated (include name of village/urban area, block, DISTRICT and STATE)#:	
Name of vaccines with dose received (if known)	
Date of first symptom (D D M M Y Y Y Y)	Time of first symptom (H H M M) (AM/PM)
Hospitalization:(No/ Yes) Date- (D D M M Y Y Y Y)	Time of hospitalization (H H M M) (AM/PM)
Name and address of hospital (if hospitalized):	CR No./MRD No _____
Current status (encircle)	**Death / Still Hospitalized / Recovered & Discharged with sequelae /Recovered completely and discharged / Left Against Medical Advice (LAMA) / Not hospitalized**
If died, Date of Death (D D M M Y Y Y Y)	Time of Death (H H M M) (AM/PM)
Describe AEFI (signs and symptoms):	
Name & signature of AMC Coordinator/ Medical officer: Email: Contact No.	
*Date form sent to District Immunization Officer# (**where patient was vaccinated**)- __ __/__ __/__ __ __ __	
*Date form sent to State Immunization Officer# (**where patient was vaccinated**)- __ __/__ __/__ __ __ __	
*Date form sent to PVPI, Ghaziabad- __ __/__ __/__ __ __ __	
*Date form sent to Immunization Division / AEFI Secretariat (aefiindia@gmail.com)- __ __/__ __/__ __ __ __	
Name & signature of Pharmacovigilance Associate: E mail: Contact number:	

#The case is to be notified to the DIO of the district where the vaccine was administered.
***This form should be scanned and emailed simultaneously to DIO, SEPIO, PVPI and AEFI Secretariat.**

Materiovigilance: A New Dimension in Patient Safety

Medical devices have an immensely important role in diagnosis, prevention, and treatment of different diseases. Recent scientific innovation has considerably increased the role of medical devices in the health-care system. There are millions of medical devices in the health care system that ranges from a simple affordable bandage to highly costly and complex devices such as magnetic resonance imaging machine and software application of medical interest. The medical devices have benefited immensely patients but they too carry substantial risks to the health. In the recent past, there were multiple cases of recalled of device either due to defect or because it causes significant morbidity and mortality in the users. Therefore, it is imperative to evaluate and establish the risks and benefits associated with the device at all stages of its development and uses. The surveillance regarding medical devices in India were not developed and there was no proper system to monitor the adverse events associated with uses of medical devices. To regulate the import, manufacture, sales, and distribution of medical devices, Government of India in consultation with Drugs technical advisory board has recently brought out Medical Devices Rules, 2017. It was notified on January 31, 2017 and came into force from January 1, 2018.

Materiovigilance refers to close monitoring of any undesirable occurrences resulting from the use of medical devices by means of having a system in place which comprises identifying, collecting, reporting, and estimating undesirable occurrences and reacting to them, or safety corrective actions after their post marketing phase. The Drugs Controller General India launched materiovigilance program of India (MvPI) at Indian Pharmacopeia Commission (IPC), Ghaziabad on July 6, 2015. The fundamental aim of this program is to monitor medical device-associated adverse events (MDAE), create awareness among health-care professionals about the importance of MDAE reporting and generate independent credible evidence-based safety data of medical devices and to share it with the stakeholders. The IPC functions as the National Coordination Centre (NCC) and Central Drug Standard Control Organization (CDSCO) functions as the regulator of MvPI.

The program was initiated with the purposes to protect the health of the patients. The main objective is to safeguard the safety of the device and its users by reducing the repetitions of adverse events and malfunctions. The main purposes are to create a nationwide system for patient safety monitoring, to evaluate the risk–benefit ratio of medical devices, to produce evidence-based data on the safety of medical devices, to support CDSCO in the decision-making process and to communicate the safety information on the use of medical devices to various stakeholders to minimize the risk.

The reporting of adverse events related to medical devices can be any known or unknown, serious or nonserious, frequent or rare. Along with that any malfunction or deterioration in characteristics or performance of medical device or inaccuracy in labelling or instructions for use can be reported. A reporting format, two pages medical device adverse event reporting form has been prepared by MvPI which contain all information in detail regarding the patient, adverse event, device, regulator, and reporter. Documenting and reporting adverse events due to the device and seamless flow of information involves various aspects and interrelationship among different stakeholders involves health-care service providers, manufactures, research associate and coordinator at MDMC, National Collaborating Centre, National Coordinating Centre (NCC), technical support and research center (TSRC) and CDSCO.

Reference: Meher BR. Materiovigilance: An Indian perspective. *Perspect Clin Res*. 2018;9(4):175-178.

MEDICAL DEVICE ADVERSE EVENT REPORTING FORM

Materiovigilance Program of India (MvPI)

This form is intended to collect information on Medical Devices Adverse Event in India. The form is designed to be used by Manufacturer/Importer/ Distributor of Medical Devices, Healthcare Professionals and anyone with direct/indirect knowledge of Medical Devices Adverse Event.

Primary Information

1. Date of Report :
2. Type of Report : Initial ☐ Follow up ☐ Final ☐ Trend ☐
3. Reporter Reference No. :

Reporter Details

1. Type of Reporter : (a) Manufacturer ☐
   (b) Importer ☐ Healthcare Professional ☐ Others ☐ (specify).....
   Distributor ☐ Patients ☐
2. In case, where the reporter is not manufacturer, fill the following details :-
   (a) Is the reporter informed the incident to the manufacturer?
   Yes ☐ No ☐
   (b) Is the reporter also submitting the report on behalf of the manufacturer?
   Yes ☐ No ☐
3. Reporter contact information:
   a) Name :
   b) Address :
   c) Tel. /Mobile :
   d) Email :

Device Category

Medical Device	In Vitro Diagnostics (IVD)	Equipments / Machines
I. Therapeutic ☐ Diagnostic ☐ Both ☐	I. Kits ☐	I. Therapeutic ☐ Diagnostic ☐
II. Implantable device ☐ Non-Implantable device ☐	II. Reagents ☐	II. Therapeutic & Diagnostic ☐
III. Single use device ☐ Reusable device ☐ Reuse of manufacture marked Single use device ☐	III. Calibrator ☐	III. Imaging ☐
IV. Sterile ☐ Non Sterile ☐	IV. Control Material ☐	IV. Invasive ☐ Non-Invasive ☐
V. Personal use / Homecare use ☐	V. Others ☐	V. Others ☐
	VI. IVD electronic reader/ Analyzer ☐	

Instruction for use Section A-F

- *If Medical Devices/Equipments/Machines : Please fill all the sections i.e. A, B, C, D, E & F*
- *If in Vitro Diagnostics (IVD) : Please fill sections i.e. A (except 6, 7, 8, 13, 14 & 16), B (except 1, 2, 6 & 8), D, E, & F*

(A) Device Description

Device Name / Trade Name / Brand Name:

Details	Name	Address	License No.
Manufacturer			
Importer			
Distributor			

1. a) Is the device notified/regulated in India : Yes ☐ No ☐
   b) Device Risk Classification as per India MDR 2017 : A ☐ B ☐ C ☐ D ☐
2. License No. :
3. Catalogue No. :
4. Model No. :
5. Lot / Batch No. :
6. Serial No. :
7. Software Version :
8. Accessories / Associated Devices :
9. GMDN Code & GMDN Term (If applicable) :
10. UDI No. (If applicable) :
11. Installation Date :
12. Expiration Date :
13. Last preventive maintenance date (dd/mm/yyyy) :
14. Last calibration date (dd/mm/yyyy) :
15. Age of device from date of manufacturing :
16. How long was device in use :
17. Availability of device for evaluation : Yes ☐ No ☐ If no, was the device Destroyed ☐ Still in use ☐ return to manufacturer or importer/distributor ☐
18. Is the usage of device as per manufacturer claim /Instruction for use/user manual: Yes ☐ No ☐
    If no specify usage .....

MDAE form

(B) Event Description

1. Date of Event / Near miss incident:
2. Date of Implant (If applicable):
3. Location of Event:
   Hospital Premise ☐ Manufacture/Distributor premise ☐
   Home ☐ Others ☐
4. Device Operator:-
   Healthcare Professional ☐ Patient ☐ Others ☐
   Problem noted prior to use/near miss event ☐
5. Device disposition / Current location:
   a) Returned to company ☐ If yes, date ...../...../.....
   b) Remains implanted in patient ☐
   c) Within the healthcare facility ☐
   d) At patient home ☐
   e) Destroyed ☐
   f) Others (specify) ☐
6. Serious event: ☐
   Tick the appropriate reason
   a) Death (DD/MM/YY) ☐ ...../...../.....
   b) Life Threatening ☐
   c) Disability or permanent damage ☐
   d) Hospitalization ☐
   e) Congenital anomaly /birth defect ☐
   f) Any other serious (Imp. medical event) ☐
   g) Required intervention to prevent / permanent Impairment / damage device ☐
7. Non serious event: ☐
8. Is device in use after incidence: Yes ☐ No ☐

8. Detail description of Event:-

9. Frequency of occurrence of similar Adverse Event in India in past 3 years	Year	No. of Similar Adverse Events	Total No. Supplied	Frequency of Occurrence (%)
10. Frequency of occurrence of similar Adverse Event in globally in past 3 years	Year	No. of Similar Adverse Events	Total No. Supplied	Frequency of Occurrence (%)

(C) Patient Information, History & Outcome

1. Patient Hospital ID :
2. Patient Initial :
3. Age :
4. Sex : Male ☐ Female ☐ Others ☐
5. Weight :
6. Other relevant history, including pre-existing medical conditions.....

7. Patient Outcomes:
   a) Recovered Date (DD/MM/YY) ☐ ...../...../.....
   b) Not yet recovered ☐
   c) Death ☐ (DD/MM/YY) ☐ ...../...../.....
   d) Others ☐ Please Specify.....

1. Name :
2. Address :
3. Contact Person Name at the site of event :
4. Tel. No. :
5. Email :

(E) Causality Assessment

1. Investigation action taken :
2. Root cause of problem (Applicable for follow up / final reports):

(F) Product Owner's Investigation & Action taken

1. Product Owners device risk analysis report:
2. Corrective / preventive action taken:
3. Device history review:

Where to report?

Duly filled Medical Device Adverse Event Reporting Form can be send to Indian Pharmacopoeia Commission, Ministry of Health and Family Welfare, Government of India, Sector-23, Rajnagar, Ghaziabad-20002, Tel-0120-2783400, 2783401 and 2783392, FAX:0120-2783311 or email to mvpi.ipcindia@gmail.com Or Call on Helpline no. 1800 180 3024 to report Adverse event.

Partnering Organizations

Disclaimer

Confidentiality: The patient's identity is held in strict confidence and protected to the fullest extent. Programme staff is not expected to and will not disclose the reporter's identity in response to a request from the public. Submission of a report does not constitute an admission that medical personnel or manufacturer or the product caused or contributed to the adverse event.

With the rapid surge in the development of pharmaceutical industry, there is a great focus on the environmental issues caused by the pollutants of pharmaceutical products. These environmental pharmaceutical pollutants include excretion of pharmaceuticals after human and veterinary therapeutic use. Many pharmaceutical chemicals are non-degradable, resist the acid environment in the stomach or long-lasting, and thus present a special risk where they enter, persist, and disseminate in the environment carrying the risk of entering the water supplies and the food chain which will ultimately make an unwitting re-entry into humans and animals.

"Ecopharmacovigilance" (EPV) is an emerging science concerning detection, assessment, understanding, and prevention of adverse effects related to the presence of pharmaceuticals in the habitat. EPV has been an area of novel interest with specific aim to identify and reduce environmental harm by pharmaceuticals in a coordinated and timely manner.

Exposure of humans and animals through environment can affect them in various ways. The foremost among them is microbial resistance as long-term exposure to low dose antimicrobial agents through drinking water may herald resistance. The long-term exposure to these environmental pharmaceutical pollutants could be responsible for chronic toxic effects in animals and plants including, endocrine disruption, growth inhibition, disruption of ecosystems of microbes and other effect on the humans or animals, which may include cause cytotoxicity, mutagenicity, teratogenicity, and so on.

Till date, the potential effects of the pollutants of these pharmaceuticals' products have been demonstrated on wildlife species. Vultures have been poisoned and even critically endangered because they ingested diclofenac when feeding on the carcasses of livestock. Similarly, male fish are becoming sterile due to contamination of water by ethinylestradiol. Even though there is no systematic study to show the definite toxicity from these environmental pharmaceuticals on humans; it is speculated that humans who are on the top of the food chain would be jeopardized through the environmental pharmaceutical pollutants. Already, studies have shown that the decreasing sperm count in men can be correlated with the increasing exposure to environmental drug pollution.

Further, monitoring of different species; the measurement, prediction, and identification of potential effects of pharmaceutical pollutants in the environment will help to improve scientific understanding of pharmaceuticals in the environment. This will help to formulate rules and regulation to curb the disposal of pharmaceutical pollutants and its effects on the environment.

The European Commission (EC) is currently reviewing data on pharmaceuticals in the environment and the potential impact on the environment and public health, including a review of the current legislation for human and veterinary drugs. It has been suggested that collaboration between industry, academia, and government for research will ensure that adequate levels of environmental protection were encouraged and will promote EPV in this scenario.

The perspective of EPV include environmentally friendly design for green drug as well as green chemistry in the process development, promoting biodegradable products, reduction of emissions from manufacturing, imparting education on rational, the management of unused drugs, etc. These new EPV approaches have been introduced into the environment for monitoring drugs like antidepressants, antibacterial like fluoroquinolones, hormones, paracetamol, and diclofenac.

A mandatory provision needs to be made in the process of drug development to establish safety in the context of environment. Study of the impact of the pharmaceutical ingredient on environment should also form part of the drug approval process. It is already become mandatory to perform the Environmental Risk assessment (ERA) before seeking market authorization of drugs in the European Union.

Some other remedial measures proposed to reduce the number of drugs entering the environment:

1. To reduce generation of pharmaceutical waste at the site of usage

2. To increase efficiency of sewage treatment plants

3. Use of Green pharmacy to combat environmental drug pollution

4. Developing better drug disposal programs to take care of expired/surplus drugs including Return to donor or manufacturer or proper disposal in Landfill or through Incineration.

5. Waste immobilization through Encapsulation and/or Inertization

It is imperative not to compromise with the balance of ecosystem even though drug use has become an inevitable part of our lives. In the modern world, though there is scientific advancement but still we lack the basic skill and technology to replace drugs with biopharmaceuticals in practice. The research community, EPA, FDA and pharmaceutical manufacturers should work together to design educational programs to better inform investigators, healthcare providers and patients about the potential environmental impacts of pharmaceutical use and appropriate disposal methods.

Cosmetovigilance…Are we Aware of this Vigilance?

Cosmetics are products that are intended to be rubbed, poured, sprinkled or sprayed on, or introduced into, or otherwise applied to, the human body or any part thereof for cleansing, beautifying, promoting attractiveness, or altering the appearance, and includes any product intended for use as a component of cosmetics. The widespread use of cosmetics in the large populations of the country led to the notice of various adverse effects in consumers and as occupational hazards. Like Pharmacovigilance and Materiovigilance, Cosmetovigilance should deal with the safety of cosmetics with a public health objective.

As there are no specific guidelines to monitor the adverse events related to cosmetics. It becomes necessary to include cosmetovigilance to protect the consumers using the cosmetic pharmaceutics (cosmetoceutics) and personal care products. The adverse reactions related to cosmetoceutics and personal care products (CPCPs) can produce a variety of acute and long-term consequences which may be noxious and effects the health of consumers. The adverse reaction related to CPCPs are mostly not specific and difficult to correlate as there is no circumstantial evidence on the efficacy of these products and lack as there is no evidence-based data on these products to confirm its safety.

CPCPs are commonest cause for hospital referrals in patients of allergic contact dermatitis. The most frequently reported cosmetic products were make-up, moisturizers, hair care products and soaps. In India very little attention has been given to the adverse reactions related to cosmetic products in the past. Unwanted or adverse reactions due to cosmetic products are either very low or go unnoticed due to lack of proper organized reporting system. Hence the requirement of an organized reporting agency is imperative.

Herbal formulations being widely accepted therapeutic agents as antidiabetics, antiarthritics, hepatoprotectives, cough remedies, memory enhancers, and adaptogens. The history of the use of herbs goes back 4000 years. The origin of this type of medical treatment began in China and India. Traditional Indian medicine has dated back to 3 000 BC. One form of traditional Indian medicine is called Ayurvedic. The commonest myth regarding herbal medicines is that these medicines are completely safe, and can therefore be safely consumed by the patient on his/her own, without a physician's prescription. This belief has led to large-scale self-medication by people all over the world, often leading to disappointing end-results, side-effects, or unwanted after-effects.

WHO Collaborating Centre for International Drug Monitoring has recommended the use of proper scientific binomial names for herbs used in medicine in order to provide consistency in the naming of herbs in adverse reaction (AR) reports for coding. This would ensure comparability between reports from various international pharmacovigilance databases. It is equally important for the authors of published AR case reports to identify the specific product(s) involved, including label and manufacturer information, specific ingredients, and dose employed.

As the herbal and traditional medicine remedies and preparations are chemically rich complex mixtures comprising several hundreds of constituents. It is difficult to identify the causative agent associated with the ARs encountered because traditional herbal preparations often contain multiple ingredients. The profile of constituents is often not uniform throughout a plant and certain parts of the plant can be toxic. The precise profile of constituents is likely to vary between different batches of herbal materials, and factors such as environment, time of harvesting, storage, processing and drying can affect their variability. This makes it difficult to determine pharmacokinetics, pharmacodynamics and toxicology, and to establish which ingredient causes a safety concern. There is also lack of technical expertise, facilities and manpower to analyse the problem, particularly in identifying substandard, adulterated and contaminated, wrong medicinal plants, which is a common problem with traditional medicine products.

Due to the lack of clinical trials for most herbal medicinal preparations (HMPs), post-market pharmacovigilance is a critical source of safety information; however, the assessment of ARs associated with HMPs offers unique challenges in the quantity and quality of available information. Healthcare professionals should remain vigilant for potential interactions between herbals and prescription medications, especially when it involves medications with narrow therapeutic indices.

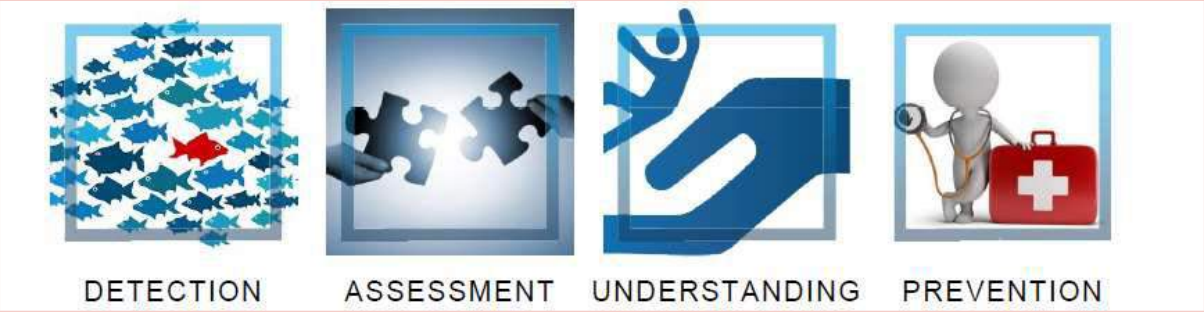
Due to the wide use and easy availability of herbal medicines, herbal toxicity has become an issue of concern. The safety and quality of herbal medicine should be ensured through greater research, pharmacovigilance, greater regulatory control, and better communication between patients and health professionals. The recommended approach is to include herbal medicines in existing national pharmacovigilance systems or, where such systems have not yet been developed, to establish comprehensive national pharmacovigilance systems which incorporate coverage of herbal medicines. It will harmonize regulations for herbal/traditional medicine products among Member States. Traditional practitioners should participate in causality assessment process and they should be trained on causality assessment. Pharmacovigilance should be integrated into curriculum of traditional medical education and it should be integrated into good pharmacy practices (GPP) in community pharmacy for herbal and traditional medicine.

Hemovigilance….

The term hemovigilance is based on greek work hema which means blood and latin word vigilans which means being watchful. Organized hemovigilance was first setup in France in 1994 which became legalized later on. This triggered a chain of events in establishing hemovigilance systems across the world like, in United Kingdom - Serious Hazards of Transfusion (SHOT), Canada- Transfusion Transmitted Injuries Surveillance System (TTISS), Netherlands- Transfusion Reactions in Patients (TRIP), Japan- Japanese Red Cross Hemovigilance system, Europe-European Hemovigilance network (EHN) which finally motivated the global countries to establish hemovigilance system. It resulted in India developing its own voluntary Hemovigilance Programme of India (HvPI) system at National Institute of Biologicals, Noida on 10th December, 2012 under the broad ambit of Pharmacovigilance Programme of India (PvPI). A new Hemovigilance software was made available on May 1, 2016 which includes both Hemo-vigila and Donor-vigil software programmes. The last published report (2020) of the same shows that a total of 615 centres were enrolled into the programme with 8162 adverse transfusion reactions (Allergic, febrile, Anaphylactic, immune and nonimune hemolysis, Circulatory overload, Dyspnea, Acute lung injury, infections etc.,) with 28 deaths, reported so far till Dec 2017. The most common transfusion reactions were febrile nonhemolytic transfusion reactions, allergic reactions and anaphylactic reactions. The Transfusion related deaths were related to anaphylaxis in 3 cases, nonimmune hemolysis in 2 cases, transfusion associated circulatory overload in 3 cases. The overall adverse reaction rate of 8.4 per 10,000 blood components transfused was reported with a key recommendation to promote rational use of blood, use of leukoredcued blood components, better bedside practices to significantly reduce the transfusion reactions. Finally, now, India has become a part of International Hemovigilance Network which has more than 30 countries participating for better transfusion practices.

Authored by:

Dr I S Chaitanya Kumar
Associate Professor
Transfusion Medicine and Hemotherapy
All India Institute of Medical Sciences, Mangalagiri



Sl. No.	Drug	ADR	Regulatory Action(s) by CDSCO *[Prescribing Information Leaflet (PIL) Label Change]*
1	Carbamazepine	Stevens Johnson Syndrome [SJS] & Toxic Epidermal Necrolysis [TEN]	Patients may be screened for HLA-B*1502 prior to the initiation of Carbamazepine therapy
2	Piperacillin & Tazobactam	Hypokalaemia, Bronchospasm	To include 'Hypokalaemia & Bronchospasm' as additional ADRs due to Piperacillin & Tazobactam FDC
3	Rabies Vaccine	Erythema multiforme	To include 'Erythema multiforme' as additional ADR due to Rabies vaccine
4	Cefixime	Acute Generalised Exanthematosus Pustulosis [AGEP]	To include 'Acute Generalised Exanthematosus Pustulosis [AGEP]' as additional ADR due to Cefixime
5	Sodium Valproate	Gum Hyperplasia	To include 'Gum Hyperplasia' as additional ADR due to long term use of Sodium Valproate
6	Furosemide	Dermatitis Lichenoid	To include 'Dermatitis Lichenoid' as additional ADR due to Furosemide
7	Lithium Carbonate	Drug Reaction with Eosinophilia & Systemic Symptoms Syndrome [DRESS]	To include 'Drug Reaction with Eosinophilia & Systemic Symptoms Syndrome [DRESS]' as additional ADR due to Lithium Carbonate
8	Phenytoin	Acute Generalised Exanthematosus Pustulosis [AGEP]	To include 'Acute Generalised Exanthematosus Pustulosis [AGEP]' as additional ADR due to Phenytoin
9	Sulfasalazine	Stevens Johnson Syndrome [SJS] & Toxic Epidermal Necrolysis [TEN]	To include 'Stevens Johnson Syndrome [SJS] & Toxic Epidermal Necrolysis [TEN]' as additional ADRs due to Sulfasalazine
10	Fluconazole	Hyperpigmentation	To include 'Hyperpigmentation' as additional ADR due to Fluconazole

Crossword Puzzle…

Hint: ***Drugs withdrawn from the market because of Adverse drug reactions***

1R		2S		3G			T				4N							5R		
											6A		T		M			O		E
M		B																		
								7C			A		R		D					
				F																
		R																		
B											Z							X		
		M		X																
									8P		M					E		B		
T																				
		E									B									
				N																

Downward	**Across**
1. Anti-obesity drug acting on cannabinoid receptor causing serious psychiatric adverse effect (10) 2. An appetite suppressant drug causing increased cardiovascular events and stroke. (11) 3. A Fluroquinolone antibiotic causing hyperglycemia as an adverse effect. (12) 4. A Monoclonal antibody used for the treatment of Multiple Sclerosis causing progressive multifocal leuko-encephalopathy (PML) (11) 5. A selective COX 2 inhibitor NSAID causing increased risk of heart attack and strokes. (9)	1. An anti-diabetic drug causing increased risk of cardio-vascular mortality. (13) 6. A Second-generation antihistaminic drug causing QT prolongation and increased risk of arrythmia (10) 7. A Prokinetic agent acting on 5 HT_4 receptors causing QT prolongation. (9) 8. A drug used for the treatment of attention deficit hyperactivity disorder (ADHD) causing liver toxicity in children. (8)

Answers:

Downwards

1. Rimonabant 2. Sibutramine 3. Gatifloxacin
4. Natalizumab 5. Rofecoxib

Across

1. Rosiglitazone 6. Astemizole
7. Cisapride 8. Pemoline