SRI LAKSHMI NARAYANA INSTITUTE OF MEDICAL SCIENCES

Osudu, Agaram Village, Koodapakkam post, Puducherry - 605502

Date: 12.03.2015

From
Dr.G.Somasundaram
Professor and Head,
Department of Pharmacology
Sri Lakshmi Narayana Institute of Medical sciences
Pondicherry

To
The Dean,
Sri Lakshmi Narayana Institute of Medical sciences
Pondicherry

Sub: Permission to conduct value-added course: ADR monitoring

Dear Sir,

With reference to the subject mentioned above, the department proposes to conduct a value-added course titled: **ADR monitoring** on **February 2020 August- 2020**. We solicit your kind permission for the same.

Kind Regards

Dr.G.Somasundaram

FOR THE USE OF DEANS OFFICE

Names of Committee members for evaluating the course:

Dean: Dr.Balagurunathan HOD: Dr.G.Somasundaram Expert: Dr.Jaikumar

The committee has discussed about the course and is approved.

Dean | Subject Expert | HOD

OFFICE OF THE DEAN

Sri Lakshmi Narayana Institute of Medical Sciences

OSUDU, AGARAM VILLAGE, VILLIANUR COMMUNE, KUDAPAKKAM POST,
PUDUCHERRY - 605 502.
[Recognised by Medical Council of India, Ministry of Health letter No. U/12012/249/2005-ME (P -II) dt. 11/07/2011]
[Affiliated to Bharath University, Chennai - TN]

Circular **Date: 12.03.2015**

Sub: Organising Value-added Course: ADR Monitoring

With reference to the above mentioned subject, it is to bring to your notice that Sri Lakshmi Narayana Institute of Medical sciences is organizing **"ADR Monitoring"**. The course content is enclosed below."

The application must reach the institution along with all the necessary documents as mentioned. The hard copy of the application should be sent to the institution by registered/ speed post only so as to reach on or before **February 2020 August- 2020**
Applications received after the mentioned date shall not be entertained under any circumstances.

Dean

DEAN

Encl: Copy of Course content

OFFICE OF THE DEAN
Sri Lakshmi Narayana Institute of Medical Sciences
OSUDU, AGARAM VILLAGE, VILLIANUR COMMUNE, KUDAPAIKKAM POST,
PUDUCHERRY - 605 502.
[Recognised by Medical Council of India, Ministry of Health letter No. U/12012/249/2006-ME (P -II) dt. 11/07/2011]
[Affiliated to Bharath University, Chennai - TN]

– Course Proposal

Course Title: ADR Monitoring

Course Objective:

1. Introduction to Adverse drug reaction
2. Importance of Pharmacovigilance
3. Post marketing surveillance
4. Adverse drug reaction Forms (ADR)
5. Reporting ADR Forms
6. What need to be collected from ADR from
7. How to collect data from ADR
8. Significance of reporting ADR
9. ADR reporting procedure
10. ADR reporting from patients, Hands on training

Course Outcome: On successful completion of the course the students will have skill in reporting ADR

Course Audience: 2nd Year MBBS Students

Course Coordinator: Dr.G.Somasundaram,

Course Faculties with Qualification and Designation:

1. Dr.Jaikumar Associate Prof Pharmacology

Course Curriculum/Topics with schedule (Min of 30 hours)

SINo	Date	Topic	Time	Hours	Faculty
1	11.02.2020	Introduction to Pharmacovigilance	4-7 PM	3	Dr.Jaikumar
2	11.02.2020	Need for Pharmacovigilance	4-7 PM	3	
3	18.02.2020	Post marketing surveillance	4-7 PM	3	
4	10.03.2020	ADR Forms	4-7 PM	3	
5	17.03.2020	Reporting ADR Forms	4-7 PM	3	
6	02.06.2020	What need to be collected from ADR from	4-7 PM	3	
7	16.06.2020	How to collect data from ADR	4-7 PM	3	
8	07.07.2020	Significance of reporting ADR	4-7 PM	3	
9	14.07.2020	ADR reporting procedure	4-7 PM	3	
10	04.08.2020	ADR reporting from patients, Hands on training	4-7 PM	3	
			Total Hours	30	

REFERENCE BOOKS: (Minimum 2)

1. "Stephens' detection and evaluation of adverse drug reactions: principles and practice 6th ed.: Chichester, West Sussex, UK: John Wiley & Sons, 2012".

2. Mann's Pharmacovigilance, 3rd Edition :SBN: 978-0-470-67104-7 May 2014 Wiley-Blackwell 866 Pages

VALUE ADDED COURSE

1. **Name of the programme& Code**

   ADR Monitoring PH10

2. Duration& Period

30 hrs &- **February 2020 August- 2020**

3. Information Brochure and Course Content of Value-Added Courses

Enclosed as Annexure- I

4. List of students enrolled

Enclosed as Annexure- II

5. Assessment procedures:

Multiple choice questions- *Enclosed as Annexure- III*

6. Certificate model

Enclosed as Annexure- IV

7.No. of times offered during the same year:

February 2020 August- 2020

8. Year of discontinuation: 2020

9. Summary report of each program year-wise

Value Added Course- February 2020 August- 2020					
Sl. No	**Course Code**	**Course Name**	**Resource Persons**	**Target Students**	**Strength& Year**
1	PH10	**ADR Monitoring**	Dr.S.Jaikumar	II MBBS	**20&February 2020 August- 2020**

10. Course Feed Back

Enclosed as Annexure- V

RESOURCE PERSON **COORDINATOR**

ADR MONITORING

PARTICIPANT HAND BOOK

BIHER SLIMS

COURSE DETAILS

Particulars	Description
Course Title	**ADR MONITORING**
Course Code	PH10
Objective	**1.Introduction to Adverse drug reaction** **2. Importance of Pharmacovigilance** **3.Preclinical research phases** **4.Post marketing surveillance** **5.Adverse drug reaction Forms (ADR)** **6.Reporting ADR Forms** **7.What need to be collected from ADR from** **8.How to collect data from ADR** **9.Significance of reporting ADR** **10.ADR reporting procedure**
Key Competencies	On successful completion of the course the students will have skill in reporting ADR
Target Student	II MBBS Students
Duration	30hrs February 2020 August- 2020
Theory Session	10hrs
Practical Session	20hrs
Assessment Procedure	Multiple choice questions

INTRODUCTION: "ANYTHING YOU CAN THINK OF, ANYTHING YOU CAN SEE AND SOME THINGS YOU DON"T EVEN THINK OF CAN BE DUE TO A DRUG" Every occasion when a patient is exposed to a medical product, is a unique situation and we can never be certain about what might happen. A good example for this is thalidomide tragedy in late 1950s and 1960s.Thalidomide prescribed as a safe hypnotic to many thousands of pregnant women caused severe form of limb abnormality known as phocomelia in many of the babies born to those women. It was a seminal event that led to the development of modern drug regulations aimed to identify, confirm and quantify ADRs. An adverse drug reaction (ADR) is any undesirable effect of a drug beyond anticipated therapeutic effects occurring during clinical use (pirmohamed etal1998). Hence every health care professional who give advice to patients need to know the frequency and magnitude of the risks involved in medical treatment along with its beneficial effects. Recent epidemiological studies estimated that ADRs are fourth to sixth leading cause of death1 . It has been estimated that approximately 2.9-5% of all hospital admission are caused by ADRs and as many as 35% of hospitalised patients experience an ADR during their hospital stay2 . An incidence of fatal ADRs is 0.23%- 0.4%3 . Although many of the ADRs are relatively mild and disappear when drug is stopped or dose is reduced, others are more serious and last longer. Therefore there is a little doubt that ADRs increase not only morbidity and mortality but also add to the overall health care cost4-6 . Pharmacovigilance is the science and activities relating to detection, assessment, understanding and prevention of adverse effects or any other drug related problems7 . Pharmacovigilance should however not be limited to the reporting of classical adverse effects. It should also be concerned with identification of product defects, unexpected insufficient therapeutic effects, intoxications and

misuse – abuse situations8 . According to WHO guidelines (2000), functions of pharmacovigilance are the detection and study of ADR"s, measurement of risk and effectiveness of drug use, dissemination of this information and education. Adverse drug reaction (ADR) monitoring involves following steps: I. Identifying adverse drug reaction (ADR) II. Assessing causality between drug and suspected reaction III. Documentation of ADR in patient"s medical records IV. Reporting serious ADRs to pharmacovigilance centres /ADR regulating authorities I. Identifying adverse drug reaction (ADR) Several definitions of ADRs exists, including those of WHO, FDA, Karch and Lasanga.The WHO definition is internationally accepted and most widely used. WHO technical report no 498(1972) defines 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 for the modification of physiological function9 . This definition excludes therapeutic failures, intentional and accidental poisonings and drug abuse. Also this does not include adverse events due to errors in drug administration or noncompliance (taking more or less of a drug than prescribed amount) 3. ADRs are mainly identified in the pre-marketing studies and in the post-marketing surveillance studies. Disadvantages of the pre-marketing studies are that they lack sufficient knowledge to extrapolate information collected from animal studies directly into risks in humans and very few number of subjects (not more than 4000) are exposed to the new drug prior to the general release of product into market. Another major disadvantage is that clinical trials can not be done in rare group of subjects like children, elderly and pregnant JPRHC Review Article JPRHC January 2010 Volume 2 Issue 1 127-134 women. For cost reasons clinical trials often have short duration which means they can not generate information about long term adverse effects. As a consequence of the above reasons,

only type A adverse reactions are known at the time of general marketing of a new drug. So, all other types of ADRs can only be identified in post marketing surveillance. Post marketing surveillance can be done by different methods: 1. Anecdotal reporting10: The majority of the first reports of ADR come through anecdotal reports from individual doctors when a patient has suffered some peculiar effect. Such anecdotal reports need to be verified by further studies and these sometimes fail to confirm problem. 2. Intensive monitoring studies11,20: These studies provide systematic and detailed collection of data from well defined groups of inpatients .The surveillance was done by specially trained health care professionals who devote their full time efforts towards recording all the drugs administered and all the events, which might conceivably be drug induced. Subsequently, statistical screening for drugevent association may lead to special studies. Popular example for this methodology is Boston collaborative drug surveillance program Strengths: a. Derives incidence rates b. Analyses factors which may contribute to reactions c. Identifies drug interactions d. Generates and tests hypothesis F. Under reporting can be minimised Weakness: a. They need great expense of resources b. The relatively short period of observation resulting in non identification of delayed reaction c. Relatively small proportion of population size resulting in non identification of rare reactions d. The lack of follow up and outcome information 3. Spontaneous reporting system (SRS)12: It is the principal method used for monitoring the safety of marketed drugs. In UK, USA, India and Australia, the ADR monitoring programs in use are based on spontaneous reporting systems. In this system, clinicians are encouraged to report any or all reactions that believe may be associated with drug use. Usually, attention is focused on new drugs and serious ADRs. The rationale for SRS is to generate signals of potential drug problems, to identify

rare ADRs and theoretically to monitor continuously all drug used in a variety of real conditions from the time they are first marketed.15 Strengths: a. Simple, effective, inexpensive and continuous b. The entire population comprising extremes of age, people in hospital and community may be included c. ADRs that are too rare to be demonstrated by other methods may be detected d. Drugs that are uncommonly used may be monitored Weakness: a. Under reporting is almost universal b. Absence of reliable numerator or denominator precludes the provision of quantitative information c. Numerous other reporting biases include the novelty factor of new drug and the effect of publicity d. Reporting rates for each agent or group of agents may vary with time. e. Clinical information supplied is often limited. 4. Cohort studies (Prospective studies) 11: In these studies, patients taking a particular drug are identified and events are then recorded. The weakness of this method is relatively small number patients likely to be studied, and the lack of suitable control group to assess the background incidence of any adverse events. Such studies are expensive and it JPRHC Review Article JPRHC January 2010 Volume 2 Issue 1 127-134 would be difficult to justify and organize such a study for every newly marketed drug. 5. Case control studies (retrospective studies) 10: In these studies, patients who present with symptoms or an illness that could be due to an adverse drug reaction are screened to see if they have taken the drug. The prevalence of drug taking in this group is then compared with the prevalence in a reference population who do not have the symptoms or illness. The case control study is thus suitable for determining whether the drug causes a given adverse event once there is some initial indication that it might. However, it is not a method for detecting completely new adverse reactions. 6. Case cohort studies10: The case cohort study is a hybrid of prospective cohort study and retrospective case control study, Patients who present with

symptoms or an illness that could be due to an adverse drug reaction are screened to see if they have taken the drug. The results are then compared with the incidence of the symptoms or illness in a prospective cohort of patients who are taking the drug. 7. Record linkage10: The idea here is to bring together a variety of patient records like general practice records of illness events and general records of prescriptions. In this way it may be possible to match illness events with drugs prescribed. A specific example of the use of record linkage is the so called prescription event monitoring scheme in which all the prescriptions issued by selected parishioners for a particular drug are obtained from the prescription pricing authority. The prescribers are then asked to inform those running scheme of any events in the patients taking the drugs. This scheme is less expensive and time consuming than other surveillance methods 8. Meta analysis13: Meta analysis is a quantitative analysis of 2 or more independent studies for the purpose of determining an overall effect and of describing reasons for variation in study results, is another potential tool for identifying ADRs and assessing drug safety. 9. Use of population statistics14: Birth defect registers and cancer registers can be used If drug induced event is highly remarkable or very frequent. If suspicions are aroused then case control and observational cohort studies will be initiated. II. Assessing causality between drug and suspected reaction15: Causality assessment is the method by which the extent of relation ship between a drug and a suspected reaction is established. There are three approaches to asses" causality. These include a) Opinion of an individual expert b) Opinion of a panel of experts c) Formal algorithms In the first approach, an individual who is an expert in the area of ADRs would evaluate the case. In the process of evaluation, he or she may consider and critically evaluate all the data obtained to assess whether the drug has caused the particular reaction. A panel of experts adopts a similar procedure

to arrive at a collective opinion. Using formal algorithms, collected data is subjected and critically assessed by using one or more standard algorithms. Some of the important algorithms used are Naranjo, WHO, European ABO system, Kramer, Bayesian, Karch and Iasanga and French imputation method. There is no gold standard for causality assessment. The categorisation of causal relationship between a drug and suspected adverse reactions varies with the scale adopted. WHO scale categorises the causality relationship into certain, probable, possible, unassessible/unclassifiable, unlikely, conditional /unclassifiable. The Naranjo"s scale JPRHC Review Article JPRHC January 2010 Volume 2 Issue 1 127-134 categorises the reaction as definite, probable, possible or unlikely. In general the following four different basic points can be considered in attributing a clinical adverse event to the drug. 1. Temporal time relationship between suspected reaction and drug. 2. Dechallenge (cessation of drug) 3. Rechallenge (re introducing drugs) 4. Likelihood of other possible causes Table 1: Causality assessment strengths and limitations What causality assessment can do What causality assessment can not do Decreases disagreement between assessors Classify relationship likelihood Mark individual case reports Education /improvement of scientific assessment Exact quantification measurement of relationship likelihood Distinguish valid from invalid cases Prove the connection between drug and event Quantify the contribution of a drug to the development of an adverse event Change uncertainty into certainty III. Documentation of ADRs in patient's medical records This aids as reference for alerting clinicians and other health care professionals to the possibility of a particular drug causing suspected reaction. IV. Reporting serious ADRs to pharmacovigilance centers / ADR regulating authorities According to FDA, a serious reaction is classified as one which is fatal, life threatening, prolonging hospitalisation, causing a significant

persistent disability, resulting in a congenital anomaly and requiring intervention to prevent permanent damage or resulting in death16 . Hatwig SC, Seigel J and Schneider PJ categorised ADRs into seven levels as per their severity. Level 1&2 fall under mild category whereas level 3& 4 under moderate and level 5, 6&7 fall under severe category. Karch and Lasanga classify severity into minor, moderate, severe and lethal. In minor severity, there is no need of antidote, therapy or prolongation of hospitalisation. To classify as moderate severity, a change in drug therapy, specific treatment or an increase in hospitalization by at least one day is required. Severe class includes all potentially life threatening reactions causing permanent damage or requiring intensive medical care. Lethal reactions are the one which directly or indirectly contributes to death of the patient. Different ADR regulatory authorities are - Committee on safety of medicine (CSM), Adverse drug reaction advisory committee (ADRAC)17, MEDWATCH, JPRHC Review Article JPRHC January 2010 Volume 2 Issue 1 127-134 Vaccine Adverse Event Reporting System18. WHO-UMC international database maintains all the data of ADRs. In India, national pharmacovigilance programme19 was officially inaugurated on 23rd November 2004. It has one national pharmacovigilance center located at CDSCO in Delhi, two zonal, five regional and twenty four peripheral centers. National pharmcovigillance center communicates all the reported ADR data to WHO – UMC international database. CONCLUSION: India has more than half a million qualified doctors and 15,000 hospitals having bed strength of 6, 24,000. It is the fourth largest producer of pharmaceuticals in the world. It is emerging as important clinical trial hub in the world. Many new drugs are being introduced every year and so every health care professional must have knowledge about importance of ADR monitoring and pharmacovigilance.

Every health care professional should see it as a part of his/her professional duty keeping in mind about Hippocrates admonition" at least do no harm".

Annexure- II
VALUE ADDED COURSE
ADR MONITORING
List of Students Enrolled

Sl. No	Name of the Student	Register No	Signature
1	NIRMAL KUMAR B	U19MB331	
2	NISHANTHI V	U19MB332	
3	NITIN NARAYAN M	U19MB333	
4	NIVASINY P S	U19MB334	
5	NUKUVOLU NIENU	U19MB335	
6	PADMAJA T	U19MB336	
7	PAVAN KALYAN POTLURI	U19MB337	
8	PAVITHRA T	U19MB338	
9	PRABHU MANIKANDAN V S	U19MB339	
10	PRADHEEP K	U19MB340	
11	PRAKHAR GAUTAM	U19MB341	
12	PRIYADHARSHINI A	U19MB342	
13	PRIYADHARSHINI M	U19MB343	
14	PRIYANSHU KESHARI	U19MB344	
15	PULAK ACHARYA	U19MB345	
16	RAAJ SETHU VINAYACK R	U19MB346	
17	RABYA TABASUM	U19MB347	
18	RAHUL MAHESHVAR M G	U19MB348	
19	RAHUL RAJ	U19MB349	
20	RAJAGOPAL R	U19MB350	

RESOURCE PERSON

COORDINATOR

Sri Lakshmi Narayana Institute of Medical Sciences
PONDICHERRY - 605 502.

SRI LAKSHMI NARAYANA INSTITUE OF HIGHER EDUCATON AND RESEARCH

Annexure - II

ADR MONITORING

MULTIPLE CHOICE QUESTIONS

Course Code: PH10

1) What is Pharmacovigilance?

a) Adverse drug reaction (ADR) monitoring

b) Therapeutic drug monitoring

c) Vigilance over the pharma company for drug production

d) All

2) Pharmacovigilance includes

a) Drug related problems

b) Herbal products

c) Medical devices and vaccines

d) All

3) Which of the following methods is commonly employed by the pharmaceutical companies to monitor adverse drug reactions of new drugs once they are launched in the market?

a) Meta analysis

b) Post Marketing Surveillance (PMS) studies.

c) Population studies

d) Regression analysis

4) Aim of the Pharmacovigilance is to assess

a) Safety over efficacy

b) Efficacy over safety

5) National Pharmacovigilance programme (NPP) was officially inaugurated at New Delhi in the year

a) 2002 b) 2004 c) 2006 d) 2008

6) The international center for adverse drug reaction monitoring is located in

a) USA b) Australia c) France d) Sweden

7) In India which Regulatory body is responsible for monitoring of ADR's?

a) Central Drugs Standard Control Organization

b) Indian Institute of sciences

c) Indian pharmacopoeia commission

d) Medical Council of India

8) Which of the following scales is most commonly used to establish the causality of an ADR?

a) Hartwig scale

b) Naranjo algorithm

c) Schumock &Thornton scale

d) Karch & Lasagna scale

9) Which one of the following is the 'WHO online database' for reporting ADRs?

a) ADR advisory committee b) Medsafe c) Vigibase d) Med watch

10) One of the following is a major risk factor for the occurrence of maximum adverse drug reactions

a) Arthritis b) Renal failure c) Visual impairment d) Vacuities

11) Rare ADRs can be identified in the following phase of a clinical trial

a) During phase-1 clinical trials

b) During phase-2 clinical trials

c) During phase-3 clinical trials

d) During phase-4 clinical trials

12) National pharmacovigilance programme co-ordinating center located in

a) Ghaziabad,UP

b) JIPMER, Pondicherry

c) AIIMS, Delhi.

d) CMC, Vellore

13) Do you think reporting of adverse drug reaction is necessary ?

a) Yes b) No

14) Do you think Pharmacovigilance should be taught in detail to healthcare professionals?

a) Yes b) No

15) Have you anytime read any article on prevention of adverse drug reactions?

a) Yes b) No

16) Have you ever come across with an ADR?

a) Yes b) No

17) Have you ever been trained on how to report Adverse Drug Reaction (ADR)?

a) Yes b) No

18) Do you think reporting is a professional obligation for you?

a) Yes b) No c) Don't know d) Perhaps

19) What is your opinion about establishing ADR monitoring centre in every hospital?

a) Should be in every hospital

b) Not necessary in every hospital

c) One in a city is sufficient

d) Depends on number of bed size in the hospitals.

20) Which among the following factors discourage you from reporting Adverse Drug Reactions? (Any one only)

a) Non-remuneration for reporting

b) Lack of time to report ADR

c) A single unreported case may not affect ADR database

d) Difficult to decide whether ADR has occurred or not.

Sri Lakshmi Narayana Institute of Medical Sciences

This is to certify that NIRMAL KUMAR B has actively participated in the Value Added Course on "ADR MONITORING" held during 1st January 2020 - August 2020, Organized by Sri Lakshmi Narayana Institute of Medical Sciences, Puducherry - 605 502, India

Dr. S. JAIKUMAR
RESOURCE PERSON

Dr. G. Sennarasu
Co-ordinator

Student Feedback Form

Course Name: ADR MONITORING

Subject Code: PH10

Name of Student: Nirmal kumar.V Roll No.: U19MB321

We are constantly looking to improve our classes and deliver the best training to you. Your evaluations, comments and suggestions will help us to improve our performance

Sl. NO	Particulars	1	2	3	4	5
1	Objective of the course is clear					✓
2	Course contents met with your expectations				✓	
3	Lecturer sequence was well planned				✓	
4	Lectures were clear and easy to understand			✓		
5	Teaching aids were effective				✓	
6	Instructors encourage interaction and were helpful			✓	✓	
7	The level of the course				✓	
8	Overall rating of the course	1	2	3	4	5

** Rating: 5 – Outstanding; 4 - Excellent; 3 – Good; 2– Satisfactory; 1 - Not-Satisfactory*

Suggestions if any:

OFFICE OF THE DEAN
Sri Lakshmi Narayana Institute of Medical Sciences
OSUDU, AGARAM VILLAGE, VILLIANUR COMMUNE, KUDAPAKKAM POST,
PUDUCHERRY - 605 502.
[Recognised by Medical Council of India, Ministry of Health letter No. U/12012/249/2005-ME (P -II) dt. 11/07/2011]
[Affiliated to Bharath University, Chennai - TN]

Date: 06.08.2020

From
Dr.G.Somasundaram
Professor and Head,
Department of Pharmacology
Sri Lakshmi Narayana Institute of Medical sciences
Pondicherry

To
The Dean,
Sri Lakshmi Narayana Institute of Medical sciences
Pondicherry.

Sub: Completion of value-added course: ADR MONITORING

Dear Sir,

With reference to the subject mentioned above, the department has conducted thevalue-added course titled: **ADR MONITORING** on **Feb 2020–Aug2020**. We solicit your kind action to send certificates for the participants, which is attached with this letter. Also, I am attaching the photographs captured during the conduct of the course.

Kind Regards

Dr.G.Somasundaram

Encl: Certificates

Photographs