

ANNUAL REPORT – 2007-2008
DEPARTMENT OF PHARMACOLOGY
ALL INDIA INSTITUTE OF MEDICAL SCIENCES

FACULTY

S. No.	Designation	Name
1.	Professor and Head	Dr. Y. K. Gupta
2.	Professor	Dr. V.L.Kumar
3.	Professor	Dr. Kamal Kishore
4.	Professor	Dr. N.R. Biswas (On leave w.e.f Sep 2007)
5.	Addl. Professor	Dr. S.K.Maulik (On leave w.e.f Sep 2007)
6.	Assoc. Professor	Dr. D.S.Arya
7.	Asstt. Professor	Dr. Jagriti Bhatia
8.	Asstt. Professor	Dr. (Mrs) Jatinder Katyal
9.	Asstt. Professor	Dr. K.H.Reeta
10.	Asstt. Professor	Dr. Surender Singh

EDUCATION

Undergraduate Teaching

- (a) The teaching of undergraduates has undergone a significant change in its content in the Pharmacology curriculum in the current year. Several topics of Clinical Pharmacology have been introduced in the form of lecture/group discussions & integrated mini symposia. Such topics include: Management of systemic fungal infections, management of HIV & opportunistic infections, Drug Development-A Practical Approach, Environmental Pharmacology, H5N1 infections & opportunistic infections. management of osteoporosis, diabetes mellitus, peptic ulcers, & bronchial asthma.
- (b) A novel method of assessment of undergraduate students has been introduced in the form of group discussion during mid & end semester examinations.
- (c) Objective Structured Electronic Examination (OSSE) was also introduced in the mid/end semester examinations.
- (d) The interactive discussions on subject through Email with undergraduate students has also been started and the feedback has been enormous.
- (e) The conventional practical classes of pharmacy have been replaced with demonstration & group discussion on marketed pharmaceutical products, new drug delivery systems, prescription audit, drug interaction exercises etc.
- (f) Animal experimentation (isolated tissue experiments) have been minimised in the form of demonstration only. These have been replaced with computer simulated exercises.

Postgraduate Teaching

1. In order to meet the appropriately trained human resource to meet the requirements of the academic & research institutions, the pharmaceutical industry, regulatory bodies, and also in the area of scientific writing, several initiatives have been taken in the traianing of MD & DM students. Five lectures from experts in the industry were organised in the department on contemporary topics. Several interactive Mini Symposia, in collaboration with clinicians and industry experts, were also organised on important topics such as Strategic Approach for Biomarkers in Drug Development,

Phase II & III clinical trials, Mechanisms of Placebo, Pharmacoepidemiology, Epigenetics & Complex Diseases, and Toxicogenomics.

Continuing Medical Education

Subsection A:

Conferences, Seminars, Workshops organized by the Department -

1. Indo-US Symposium on Novel Therapeutic Approaches for the Treatment of Neurological Disorders, November 19, 2007 at the AllMS, New Delhi.
2. National symposium on awareness, preparedness and mitigation of exposure to domestic and industrial chemicals, AIIMS, New Delhi, 30-31 August, 2007.
3. Mini symposium on Data Safety Monitoring Board, AIIMS, New Delhi, 15 September, 2007.
4. Mini International symposium on Drug Discovery and Development : Case studies, AIIMS, New Delhi, 30 October, 2007.
5. Brainstorming Workshop on Rationality Assessment and Guidelines for Fixed Dose Combinations, 25-26 June 2007, New Delhi.

Section B:

Lectures delivered

Dr Y. K. Gupta

1. Concerns about drug safety at Rockland Hospital. New Delhi
2. Pharmacovigilance in India at DIA Conference at San Diego, USA.

3. Pharmacovigilance of ASU Drugs at Training Workshop on Drug Standardization and Quality Assurance under WHO Biennium at CCRAS headquarters office, New Delhi.
4. Presentation on Criteria for adding/deleting Monographs in IPö at Seminar on Innovations in Indian Pharmacopoeia at Sunville Banquet Room, Mumbai
5. Key Note Address at the National Seminar on Quality Control & Standardization of Metal-Based Siddha and Ayurveda Medicine at Sasatra University, Tanjavur .
6. Pharmacovigilance-An Introduction at the Round Table Session of the Japan Society for the promotion of Science (JSPS) on Development for the medicinal Chemistry based on biologically active natural products in the subtropical zone in Tokyo, Japan in Feb 08.
7. Oxidative Stress and Herbal Drugs in Neurological Disorders at R & D Conference South Damen Avenue at Chicago, USA.
8. Designing & Planning Trials in India, China & South East Asia, USA.
9. SWOT Analysis of Pharmacovigilance, PMS, PSUR in India at Moscone North Convention Centre at San Francisco, USA.
10. Status of Independent & Institutional Ethics Committees in India at Moscone North Convention Centre at San Francisco, USA.
11. Seminar on Oxidative Stress in Stroke at Temple University, USA
12. Special lecture on Clinical Trials in India at University of Maryland, Department of Neurology, Maryland, USA.
13. Talk on Antioxidants and Herbal Drugs in Neurological Disorders at MNI, Montreal, Canada.
14. Navigating the Regulatory Landscape throughout Asia at Moscone Convention Centre, San Francisco, USA.

RESEARCH

B) Departmental Project (Title only):

Ongoing Projects

Dr. Y. K Gupta

1. Assessment of Awareness of Environmental Mercury Pollution in Healthcare System: Solutions & Strategies for Prevention, Ministry of Environment & Forests, Government of India. Rs. 21,14,796/-.
2. Pharmacological Evaluation of plant extracts and their medicinal products. Funded by Ranbaxy research foundation.
3. A preliminary study on the anti-obesity property of a Unani formulation in experimental models in rats. Funding by Central Council of Research in Unani Medicine. Rs. 6.89,276.

Dr. S. K. Maulik

1. Clinical trial of a standardized preparation of *Terminalia arjuna* in patients with left ventricular dysfunction. Department of Biotechnology, New Delhi.
2. Modulatory effects of phytoadaptogens on cardiovascular and neurological changes induced by experimental stress in rats. Department of Science and Technology, New Delhi.
3. Estimation of oxidative stress during oral iron supplementation (daily vs weekly) with or without Vitamin C among anaemic pregnant mothers- An ICMR Task Force Study. Funded by the Indian Council of Medical Research, New Delhi.

Dr. K. H. Reeta

1. Plasma level monitoring of mycophenolic acid and clinical outcome in renal transplant patients (Institute Research Grant, 2007-2008, Rs. 1,00,000/-).

Dr. Surender Singh

1. Major research project funded by ICMR, New Delhi on "Standardization and pharmacological studies on antiarthritic Unani formulation "Majoon suranjan" based on clinical Unani literature" as Principal Investigator (Total funding Rs. 23,30,976/-).

Completed Projects

1. Evaluation of *Terninalia arjuna* as a potential "prophylactic" antihypertensive. **Jagriti Bhatia**. Funded by AIIMS for 1 year (2006-2007). Funds : Rs. 70,000.
2. Dr. Jagriti Bhatia- Neurobehavioural evaluation of hydroalcoholic extract of *Emblica officinalis* with special reference to its antiepileptic activity.
3. Dr. Jagriti Bhatia- AIIMS funded project on "Evaluation of anti-inflammatory activity of plant lipids containing alpha-linolenic acid" as Principal Investigator (Total funding Rs. 1,05,000/-).

Collaborative Research:

Dr. Kamal Kishore - Efficacy and Safety of Concoitant use of Nevrapine and Rifampicin in Patients Co-infected with HIV and Tuberculosis in India in Collaboration with Department of Medicine, AIIMS.

PUBLICATIONS

I) Papers in Journals:

1. Comparative studies of different organs of *Nyctanthes arbor-tristis* in modulation of cytokines in murine model of arthritis. Rathore B, Paul B, Chaudhury BP, Saxena AK, Sahu AP, Gupta YK. [Biomed Environ Sci](#). 2007 Apr;20(2):154-9.
2. Effect of combination of endothelin receptor antagonist (TAK-044) and aspirin in middle cerebral artery occlusion model of acute ischemic stroke in rats. Briyal S, Gulati A, Gupta YK. *Methods Find Exp Clin Pharmacol*. 2007 May;29(4):257-63.
3. Kumar V.L. and Roy S. *Calotropis procera* Latex extract affords protection against inflammation and oxidative stress in Freund's Complete Adjuvant-induced monoarthritis in rats. *Mediators of Inflammation* 2007; 47523-47529, 2007.
4. Kumar V.L. and Seghal R. *Calotropis procera* latex-induced inflammatory hyperalgesia & effect of bradykinin and morphine. *Auton Autacoid Pharmacol*. 27:143-149, 2007.
5. Padhy B.M., Srivastava A and Kumar V.L. *Calotropis procera* latex affords protection against carbon tetrachloride induced hepatotoxicity in rats. *J. Ethnopharmacol*. 113:498-502, 2007.
6. Kumar V.L. and Padhy B.M. Herbal remedies for liver diseases. *Recent Prog. Med. Plants* 21:333-345, 2008.
7. Senthilkumari S, Velpandian T, Biswas NR et al. Evaluation of the modulation of P-Glycoprotein on the intraocular disposition of its substrates in rabbits. *Curr Eye Res* 2008; 33: 333-334.
8. Senthilkumari S, Velpandian T, Sonal N, Biswas NR, Ghose S. Evaluation of the impact of P Glycoprotein drug Efflux Transporter Blockade on the systemic and ocular disposition of P-glycoprotein substrate. *J Ocul Pharmacol Ther* 2008.
9. Velpandian T, Ravi AK, Kumari SS, Biswas NR, Ghose S. Ocular hazards of the colors used during the festival of holi in India-malachite green toxicity. *J Hazard Mater* 2007; 139: 204-208.
10. Shukla J, Bandopadhyaya GP, Varma IK, Kumar R, Maulik SK. Morphology and release kinetics of technetium-99m(V) dimercaptosuccinic acid loaded, poly(lactic-co-glycolic)acid microspheric delivery system. An experimental approach that may be used for targeted radiation treatment. *Hell J Nucl Med*. 2007;10(1):9-13.

11. H.K.Loh, K.C.Sahoo, K.Kishore, R.Roy, T.C.Nag, S.Kumari, D.S.Arya. Effects of thalidomide on isoprenaline-induced acute myocardial injury: a haemodynamic, histopathological and ultrastructural study. *Basic & Clinical Toxicology*, 2007 April; 100(4):233-239.
12. Surender Singh and D.K. Majumdar (2007). Biological activities of *Ocimum sanctum* L. fixed oil ó An overview. *Indian Journal of Experimental Biology* 45:403-12.

Abstracts in Indexed Journals

53rd Annual Confernece of Association of Physiologists and Pharmacologists of India, December 2007, Visakhapatam, India.

1. KH Reeta, J Mehla, YK gupta. Pharmacodynamic and pharmacokinetic interaction of sodium valproate with curcumin and beta-carotene in pentylenetetrazole induced seizures in rats.
2. SC Sarangi, KH Reeta, YK Gupta. Protective effect of mycophenolate mofetil on mercuric chloride induced nephrotoxicity in rats.
3. Reeta KH, Mehala J, Gupta YK. Pharmacodynamic and pharmacokinetic interaction of sodium valproate with curcumin and β -carotene in pentylenetetrazole-induced seizures in rats. *Indian J Physiol Pharmacol* 2007, 51(5):516.
4. Sarangi SC, Reeta KH, Gupta YK. Protective effect of mycophenolate mofetil on mercuric chloride induced nephrotoxicity in rats. *Inddian J Physiol Pharnacik* 2007,51(5):466.

II) Chapters in Books and Monographs:

1. Gupta YK, Reeta KH, Briyal S, Gupta V. Chemotherapy for Pediatric Tumors. In: Gupta DK, Carachi R (Editors) Pediatric Oncology (Surgical and Medical Aspects). First Edition, 2007, Jaypee Brothers Medical Publishers, New Delhi, India, pp. 481-502.
2. M Gupta, Stewart L, Gupta YK -Use of Melatonin in Epilepsy: From Bench to Bedside in the book entitled -Melatonin: From Molecules to Therapy published under the imprint of Nova Publishers, USA.

PATIENT CARE

Urinary Catecholamine test

Urinary catecholamines estimation is routinely performed in the department for the diagnosis of pheochromocytoma (adrenal gland tumor). A total of 220 samples from different departments were analyzed during the year.

Clinical Pharmacology Facility:

As an extension of the Department of Pharmacology, a newly constructed wing in New Private Ward building was taken up as -Clinical Pharmacology Wing by Department of Pharmacology in collaboration with Forensic Medicine to upscale patient care facilities and in-patient wards for various clinical pharmacology activities.

Therapeutic Drug Monitoring Facility:

Therapeutic drug monitoring has become important for dose titration of many drugs of narrow therapeutic margin. The Department of Pharmacology in collaboration with the Department of Nephrology at All India Institute of Medical Sciences, has started therapeutic drug monitoring facility of several drugs for patient care and research. To start with, antiepileptic drugs, immunosuppressants like cyclosporine, and methotrexate have

been started for patient for patient care free of cost. In the year 2007-2008, the following samples were from different departments were done for patients:

LH 6 35 patients

FSH 7 patients

E2 38 patients

Progesterone- 4 patients

Prolactin- 1 patient

Valproate- 65 patients

National Poison Information Centre: The Department of Pharmacology has a 24X7 National Poison Information Centre, which is functioning round the clock and caters to calls from all over the country in providing information about poisoning, management, symptomatology and specific antidotes. Some qualitative as well as quantitative tests are also done in the department for various poisons.

In the year 2007-2008, the centre received a total of 1002 calls about poisoning and their management from all over the country.

Total Poisoning Calls (941 Calls)

Total Information Calls (61)

Household Products	Agricultural Pesticides	Industrial Chemicals	Drugs	Bites & Stings	Plants	Unknown
397	133	111	180	22	30	52
Oral Route	Dermal Route	Inhalation	Others			
907	21	9	4			

Suicidal Cases: 430

Accidental Cases: 481

Others: 30

National Pharmacovigilance Programme: CDSCO, Ministry of Health, Govt. of India had initiated the National Pharmacovigilance Programme with 32 centres including five

regional and two zonal centres. AIIMS is the designated Zonal Centre for the North East region of the country and receives data from peripheral and regional centres of this region. The data is then collated and analysed for causality assessment of the adverse drug reactions which is then submitted to the Centre (CDSCO) which is the National Centre. The Zonal Centre received a total of 1790 Adverse Drug Reaction Reports in the year 2007-2008 from North and East Region.

AWARDS AND HONOURS –

1. During the year (2007-2008) Dr. Kamal Kishore was awarded Rashtriya Gaurav Award by India International Friendship Society
2. Dr. Madhur Gupta was awarded the õShakuntala Amir Chand Prizeö by the Indian Council of Medical Research for her published research work on pharmacotherapy of epilepsy in children

SIGNIFICANT EVENTS:

Awareness & Training in Good Clinical practice (GCP) and Good Laboratory Practices (GLP): The department has been instrumental in the inception and conduct of several GLP and GCP workshops in the past years including this year. Various training sessions for scientists, faculty, and more importantly for the junior scientists were organised for the same.

MEMBER

Dr Y.K. Gupta

- Member, Review Committee of Central Council for Research in Ayurveda and Siddha (CCRAS)

- Member, Review Committee of Central Council for Research in Unani Medicine (CCRUM)
- Chairman, National Technical Committee on Good Laboratory Practices (GLP)
- Member, Expert Group to review toxicity data for indigenous manufacture of pesticide formulation, Directorate of Plant Protection, Quarantine and Storage; Ministry of Agriculture.
- Member, Task Force to increase the undergraduate and postgraduate seats at AIIMS
- Chairman, Project Advisory Committee on Biomedical Science and Technology, Department of Science and Technology
- Member, Screening Committee for HIV/AIDS under Golden Triangle Partnership Programme,
- Member, Working Group on Development of Antifertility Agent ISM Drug Pippalyadi Yoga
- Member, Task Force on -Quality standards of Indian medicinal plantsøby ICMR
- Member, Task Force for Science and Society Division of Department of Science and Technology
- Member, Review Group of Programme -Charakø by Defence Research and Development Organization, Delhi
- Chairman, Ethics Committee, Fortis Flt Lt Rajan Dhall Hospital, Vasant Kunj, New Delhi
- Expert Member, Biomedical Ethics Committee, Sitaram Bhartiya Institute for Science and Research
- Chairman, Committee for Amendment of Insecticides Rules, 1971 of Plant Protection and Quarantine and Storage, Faridabad
- Member, Task Force on Biotechnology for Medicinal and Aromatic Plants of Department of Biotechnology
- Member, Ethics Committee for Research on Human Subjects, AIIMS
- Member, National Disaster Management Authority, Government of India
- Member, Navodaya Vidyalaya Samiti

- Member, High Powered Committee on Global Environment Change and Health of ICMR
- Member, Drug Selection Committee, AIIMS
- Member, Project Review Group INDO-US Project proposals of National Institute of Occupational Health, Ahmedabad
- Member, Scientific Advisory Committee on Food and Water Safety, International Life Sciences Institute, India
- Editor, IJPP (Pharmacology)- A national peer-reviewed journal of pharmacology and physiology in India
- Coordinator, Zonal Centre of National Pharmacovigilance Programme under the aegis of the CDSCO
- Member, Research Council, Central Drugs Research Institute, Lucknow and Central for Cellular and Molecular Biology, Hyderabad
- Member, Institutional Review Board for National Institute of Health and Family Welfare, Delhi
- Member, IUNS/IUPS/IUPHAR National Committee
- Member, IUPHAR-IOSP International Committee
- Member of Consumer Awareness Task Force, Ministry of Health and Family Welfare
- Member, National Environmental, Engineering Research Institute, Nagpur
- Member, Editorial Board: Indian Journal of Experimental Biology, Indian Journal of Pharmacology, Journal of Ecophysiology and Occupational Health, Annals of Neurosciences, Indian Journal of Medical and Pediatric Oncology

Dr. Surender Singh

1. Project Evaluation committee, Department of AYUSH, Govt. of India.
2. Pharmacopoeia Committee (U), Department of AYUSH, Govt. of India
3. Apex Appraisal Committee, AICTE, Govt. of India.
4. Inspection Committee, Pharmacy Council of India, Govt. of India.
5. Expert Committee (PGDPSM), IGNOU, Govt. of India.
6. Board of Research Studies, Jamia Hamdard, New Delhi.
7. Board of Research Studies, UP Technical University, Lucknow (UP).