# HKCP ALUMNI BULLETIN
## Issue-VII, SEPTEMBER- 2012

## From the Editors Desk:

Dear Alumni,

It's all enjoyable time as academic year 2012-13 has been started and college is all set with planning of new activities throughout the year. The first batch of M.Pharmacy in Pharmaceutics. has been started. The students wish to seek admission to M.Pharm course can avail the advantage of achieving the higher education under the guidance of the expertise faculties.

As we know many Indian adults are suffering from type II Diabetes struggling with ups and downs of sugar level every day, it is the boon to have a new drug regimen combating the fluctuations in sugar levels as well as reducing the cardiovascular complications giving a quality life. Jentadueto is the new drug combination in a single tablet of Metformin- Biguanide class first line drug of choice with Linagliptin, a dipeptyl peptidase-4 inhibitor a new target for diabetis. Research Updates in Pharmacy section reveals about research work done by Boehringer Ingelheim and Eli Lilly company.

In 'Success Secret Series' the present issue carries an article on Clinical Data Manager as a career option by Mrs Ojaswi Ghadge,Assistant professor- Department of Pharmaceutical Analysis. The article explains about the role exactly a clinical data manager plays in clinical research and its importance in a long term career growth.

The third issue of College magazine- 'Impulse' is going to be published in the current academic year. Ex-students willing to publish articles are welcome. The E- Mail Id for submitting the article is – editimpulse13@gmail.com .

As ever we always work towards giving you more and more of news about college, do send us your views and suggestions.

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# Campus News:

- **Reorientation programme** was arranged with a view to have more interaction with parents of second, third and final year students on 14-07-2012 in HKCP auditorium . Feedback analysis was conducted.
- **A promotional seminar** was arranged on Clinical Research as a career option speaker was Ms Shilpa Garg Agarwal.
- **Orientation programme** was arranged on 11th August for First year B. Pharm. Students emphasizing on Attendance discipline, Continuous evaluation system, Credit based grading system as per University of Mumbai in order to improve quality and effectiveness of education will be effective from academic year 202-13.

# Prizes:

- Navin Shetty of SemVII and Zaid Temrikar of Sem V won second prize at Oriental College of Pharmacy, Sanpada for poster presentation competition held on 25th August for the topic 'Crowd for Cancer'

- H. K. College of Pharmacy football team was the winner at Football match at Bharati Vidyapeeth, Belapur held on 25th August.

# Photo Gallery:


**Reorientation Programme on 14-07-**


**Award winning poster- Presenter- Zeid temrikar,**

**Winner- Football Team**

# Publications:

**The following articles have been published from the research guidance cell of institute, available in respective journals as well as online:**

1. **Dr. Anubha Khale : "Characterisation study of salbutamol sulphate- phosphatidylcholine liposomes"** Indian Pharmacist, vol X(11), page 61-68, May 2012.

2. **Mrs. Priyanka Goswami: "Natural remedies for polycystic ovarian syndrome (PCOS): A review.** International journal of pharmaceutical and pharmacological research."vol 1(6), Page 396-402 June 2012.

3. **Dr. Anubha Khale: "Development and characterization of freeze dried liposomes containing antiasthma drug."** Indian Pharmacist.vol 11(1), Page 57-60, July 2012.

# Success Secrets Series:

### Article by: Mrs Ojaswi Ghadge

## Clinical Data Management (CDM) - As a Career Option

Pharmacy is very old profession and has been changed profoundly over the years. A Pharma graduate today has variety of career options. The choice is vast but daunting so a domain which has a long-term career growth path is to be chosen. One of the fields in Pharma world is Clinical Research Industry.

The Clinical Research industry worldwide is growing at an exponential rate. It has opened windows of employment for a large number of trained professionals. In India, Clinical Research industry is fast expanding. This is primarily due to the availability of a large and diversified diseased patients-pool. Also the excellent infra structural facilities, cost effectiveness compared to the west coupled with perfect regulatory system have made India one of the Clinical Research hubs in the world.

A pharmacy professional plays a vital role in clinical research. They can serve as clinical research managers, associates, monitors and experts in regulatory affairs. The main purpose for conducting clinical research is to generate new knowledge for improving health care. It is easy to make the connection between pharmacy training and employment of a pharmacist in the manufacture and supply of clinical trial materials. However, the pharmacist is also ideally qualified to be a Clinical Research Associate, Clinical Research Coordinator etc. involved in the planning, monitoring and reporting of clinical trials. A progression from the roles in the clinical trial area can be quality assurance, either of the supply process or of the conduct of the clinical trial which gives the pharmacist a chance to use both technical and interpersonal skills to the full.

Pharmacist can consider Clinical Data Management as a career in order to make use of their analytical skills and clinical knowledge in a setting other than a hospital. Clinical Data Management is a key component of the multidisciplinary team involved in setting up, running and reporting clinical trials. Considering large demand for Clinical Research professional in India pharmacy Graduates may look forward to exciting and rewarding career opportunities in clinical research.

**Introduction to CDM**

Clinical Data Management is a key business process in drug discovery lifecycle. In simple words CDM is the process of collecting, entering, cleaning, and reporting of data recorded in clinical trials. CDM refers to the management of the data capture and data flow processes in the conduct of a clinical research.

What type of data?

As we all know, clinical trial is a research study to answer specific questions about drugs, biologicals, medical device, new therapies, surgical procedure, etc. They are used to determine whether new drugs or treatments are both safe and effective. Various kinds of trials are designed to address various trial hypotheses and to find the right answers from a potential drug candidate. Data generated at clinical trial sites (hospitals / clinics where eligible patients are enrolled in clinical trials and provided the drug treatment as per a well-defined protocol) are captured on

paper forms called the Case Report Form (CRF) and increasingly also in electronic forms called eCRF. Non-CRF data includes -Laboratory, ECG, patient diary, questionnaires, medical images, etc., which are simply uploaded and imported onto a Clinical Data Management System (CDMS). The data vary from project to project and is also dependent on the type of data collection tools and methodologies.

CDM is responsible for ensuring that clinical study data collected throughout the study are complete, accurate and of the highest quality and integrity available for statistical analysis. To ensure safe and fair conduct stringent guidelines are used, such as ICH GCP, GCDMP, 21-CFR-Part11. A very systematic and mature practice is required to handle the data in a secure, tamper-proof, and monitored way.

**Clinical Data Management System**

CDM operations are technology intensive and involve medical coding and database programming. There are various technology and software vendors offering suites of applications for effective clinical data management. Most companies have experimented with various forms of remote data entry, where computerization of the data is performed at the collection site. Fax technology and optical character recognition have also been piloted. Other technological advances that have affected data management include the use of video- and internet-conferencing facilities.

- Some of the popular applications used globally for CDM are: Oracle Clinical, Clintrial, SAS Pheedit, ClinForce, etc. The popular Electronic Data Capture (EDC) platforms Oracle RDC, Inform, Openclinica and Rave etc.

- **Coding Dictionary**: Medical coding dictionaries primarily in use are –MedDRA ( Medical Dictionary for Regulatory Activities), WHO- DD (World Health Organization-Drug Dictionary)

- **Data Analysis**: Clinical Trials data analysis is another core function that follows data management activities. It consists of analyzing and reporting the clinical study data to the regulatory authorities. This encompasses Data Extraction, Transformation, development

of Statistical Analysis Plan (SAP), carrying out Statistical Analysis, followed by report generation. SAS® is the most widely used software suite for this purpose today.

**Clinical Data Management Flow**

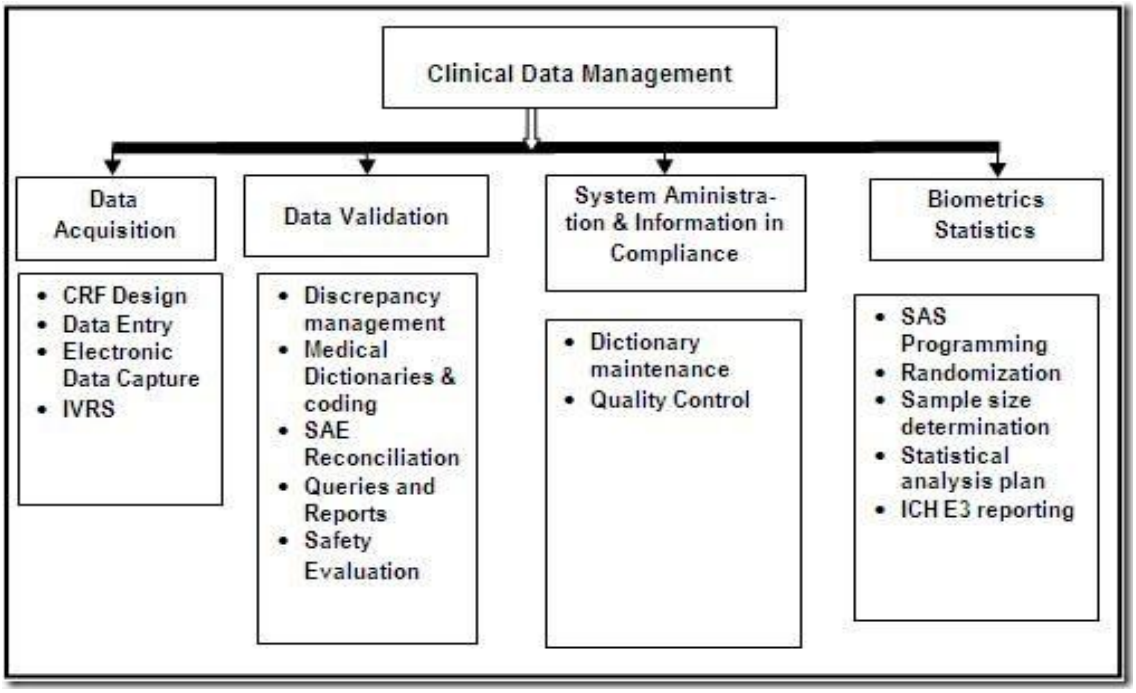
**CDM Process Flow**

- **Study Initiation:**

Once the sponsor allocates a project, a kick-off meeting is held with the sponsor and other team members in which the protocol is discussed in brief and the technicalities involved in the trial are discussed. All the team members are provided training on protocol and the activities are executed as per the scope of work. The protocol and the CRFs are reviewed in detail and the database is built as per the standards (e.g. CDISC) and sponsor specifications. The database is then programmed with edit checks for the purpose of data validation, in order to ensure the correctness and reliability of data coming from investigator's site.

- **Study Management:**

While the study is going on, there is a continuous flow of CRFs from the sites, which are tracked and then entered into the database. To check the validity of data, the programmed edit



checks are run on a batch schedule (Batch Validation). Discrepancies get populated in the database, if the CRF data do not meet the protocol specifications. The queries are raised to the investigator's site to get the clarifications in the form of Data Clarification Forms (DCFs). The database is then updated based on the resolved DCFs. The medical (e.g. Adverse Events, Medical History, etc.) and medication terms are coded utilizing standard medical dictionaries (MedDRA, WHO-DD, etc.).

- **Study Close Out:**

When all the queries are resolved and database is updated, the database is declared as clean and ready for lock. To ensure the quality of the data entered and updated, a quality control procedure is done, in which data listings are drawn from the database and reconciled with CRF and DCFs for both critical and non-critical data points. The error rate should be below the acceptable limit as specified in the data management plan. On the other side, the safety data i.e., adverse events is reconciled (SAE Reconciliation) with the Pharmacovigilance SAE data and it should be mapped one to one in both the listings. Once the entire checklist is identified and verified, the database is locked/freezed and ready for transfer as per sponsor requirements. All the irresolvable data issues are captured in the irresolvable data handling report (IDHR)

**Data Management Team**

A team is selected and assigned for a project which primarily consists of –

- Program Manager / Project Data Manager
- Lead / Senior – Data Entry Associate
- Data Entry Associate
- Senior Clinical Data Coordinator
- Clinical Data Coordinator
- Medical Coder
- Database Programmer
- SAS Programmer
- Quality Associate

Data management team comprises of physicians, pharmacy graduates/ post-graduates, information technologists, biotechnologists, project managers, clinical programmers, clinical data specialists, and life science graduates. They work in close collaboration with biostatisticians, research coordinators, clinical staff, medical writers, regulatory agencies, safety teams and other external contributors to ensure timely project deliverables.

The key activities which consistently appear in all the CDM projects are identified and translated into Standard Operating Procedures (SOPs). These are very critical to the success of every project and efforts shall be made to comply with SOPS in each and every aspect of project deliveries. Data Management Plan (DMP) forms the foundation for every project and are based on SOPs followed for the data management operations. DMP includes all the general and study-specific data management processes.

**Roles and Responsibilities**

Roles and responsibilities of all the key team members and sponsor are briefly described below to gain a better understanding of their functions.

| **Roles** | **Responsibilities** |
|---|---|
| **Sponsor** | Responsible for signing off on the project. Reviews and approves budget and scope changes, which have impact on cost, time and quality deliverables. Reviews and authorizes study documents. |
| **Project Data Manager (PDM)** | Primary contact person and will interact directly with the sponsor and sites to ensure the quality and timely completion of study within the project plan. PDM will focus primarily on project specific training needs, resource allocation, milestone planning and tracking, turn-around times on project deliverables, leading and managing a cross-functional team and ensuring that projects are progressing according to quality standards, SOPs and regulatory guidelines. PDM shall be responsible for all the project related activities and ensure to forecast & identify the risks that are expected in a project life cycle and develop contingency plans for the same. |
| **Manager-** | Responsible for managing the collection/tracking of CRFs. Responsible to allocate |

| | |
|---|---|
| **Data Entry Operation** | the data entry resources with various projects. Ensure the man power is well trained before putting on live projects to minimize data entry errors. Also reviews the CRFs designed and the validity of the database structure and data entry screens. |
| **Data Entry Associate** | Data Entry Associates are responsible for keying the data into the database. They are also responsible for ensuring data quality, process optimization & meeting CDM deliverables. |
| **Clinical Data Coordinator** | Responsible for performing all data coordination activities and data validation on CDM projects. Also to ensure the completeness and validity of the clinical trial data that has gone through data entry. Responsible to review and resolve data discrepancies identified by the system or through manual checks as identified in the study validation plan. |
| **Medical Coder** | Responsible for coding of medical terms like adverse events, concomitant medications, concurrent diseases, medical history etc., Responsible for resolution of coding issues with sponsor. |
| **Database Programmer** | Responsible for gathering end-user requirements, solutions to clients (internal and external), design, implementation and validation of databases, data validation checks, data listings/reports and data import/export procedures. |
| **SAS Programmer** | Responsible for generating views, data sets, listing and tables to meet protocol requirements and reporting for regulatory submission. |
| **Quality Associate** | Responsible for ensuring data quality issues in end to end process of CDM by verifying study documents, databases referring SOPs, project plans. Quality process documents etc. and ensure compliance at all levels. |

## Career Opportunities

As globalization occurs within the field, there will be continuing industry demand for people with strong skills in handling large data generated by clinical trials. The students of the program will have an understanding of the processes involved in biotechnology, medical device and pharmaceutical industry. Students will become eligible for occupations involving drug or medical device submissions and quality assurance functions and roles. The individuals who are interested in pursuing a career in Clinical Research and Clinical Data Management would get a thorough understanding of current applications to the development and commercialization of drug, biologic and bio device products. The Clinical Data Management program provides professionals with the specialized knowledge required to help biotechnology, medical device and pharmaceutical companies to manage their data and generate job opportunities in data management.

## Job Opportunities

Following positions can be sought as a Clinical Research Career:

- ✓ Product Physician
- ✓ Protocol Writer
- ✓ Case Report form (CRF) Designer
- ✓ Medical Writer
- ✓ Medical Translator
- ✓ Trial Monitor
- ✓ Medical Communicator
- ✓ Trial Pharmacist
- ✓ Ethics Committee Member
- ✓ Regulatory Manager
- ✓ Clinical Data Managers
- ✓ Biostatisticians

**Summary**

Clinical Data Management is a key business and technology driven process of collecting, entering, cleaning, validating, and reporting of voluminous data recorded in clinical trials and are performed in accordance with applicable FDA and International Conference on Harmonization (ICH) guidelines and regulations. Acquisition or collection of clinical trial data can be achieved through various methods. There are various technologies and software vendors offering suites of applications for effective clinical data management, which further need to be 21 CFR Part 11 compliant. CDM involves intensive database programming, medical coding, data validation and statistical analysis. CDM process flows through a complete life cycle of study initiation, management and close out. Data management team comprises of personnel from various sections and varied backgrounds. A data manager defines how these data are collected, tracks the data and checks their completeness, accuracy and the consistency. Pharmacist may develop an interest in the wider drug development process e.g. coding of medication and wish to move into clinical data management role to explore these interest. Pharmacists have the multiple career pathways in Clinical Research.

# Research updates

## Jentadueto® (linagliptin/metformin hydrochloride) tablets receive approval for the treatment of adults with Type 2 Diabetes in Europe

**New treatment will provide a single tablet option for adults who need to reduce their blood sugar**

**For Non-U.S. and Non-UK Media**

**Ingelheim, Germany, 25 July, 2012** – Boehringer Ingelheim and Eli Lilly and Company (NYSE: LLY) received Marketing Authorisation from the European Commission for

Jentadueto® which combines the DPP-4 inhibitor, linagliptin and metformin in a single tablet.[1] Linagliptin/metformin hydrochloride (HCl) will provide a new, single-tablet treatment option, taken twice-daily, for adults with Type 2 Diabetes.[1]

"We're delighted that linagliptin/metformin hydrochloride (HCl) will soon be available across Europe to help people with Type 2 Diabetes," said Prof. Klaus Dugi, Corporate Senior Vice President Medicine, Boehringer Ingelheim. "Many patients need more than one treatment to adequately manage their diabetes. Linagliptin/metformin hydrochloride (HCl) offers a simplified, single tablet dosing option, to improve glycaemic control and with a favourable side effect profile."

The European Commission has approved linagliptin/metformin hydrochloride (HCl) for use alongside diet and exercise to improve glycaemic control in adults with Type 2 Diabetes who are inadequately controlled on their maximal tolerated dose of metformin alone, metformin and a sulphonylurea, or those already being treated with the combination of linagliptin and metformin.[1] It may also be used with a sulphonylurea.

In clinical trials, statistically significant, placebo-corrected mean reductions in haemoglobin A1c (HbA1c or A1C) levels of -1.7 percent were observed in patients with inadequate glycemic control when the maximum dose of 2.5 mg linagliptin/1,000 mg metformin HCI was administered twice daily.[1.2] HbA1c is measured in people with diabetes to provide an index of blood glucose control for the previous two to three months. In clinical studies, linagliptin/metformin HCl did not cause any significant change in body weight, and can be used alone or in combination with a sulphonylurea, a commonly prescribed medication for Type 2 Diabetes.[1]

**Linagliptin/Metformin HCl Clinical Trials**

In a 24-week, randomised, double-blind, placebo controlled study evaluating 791 patients with Type 2 Diabetes and inadequate glycaemic control with diet and exercise, 2.5 mg linagliptin/1,000 mg metformin HCl twice daily demonstrated the following:[1]

- Statistically significant, placebo-corrected mean HbA1c reductions of -1.7 percent
- Statistically significant reductions in fasting plasma glucose (FPG) of -60 mg/dL. FPG is used to determine glucose levels in a fasting state (usually upon waking in the morning)

The approval of linagliptin/metformin HCl tablets was based on clinical trials that evaluated linagliptin and metformin as separate tablets. Bioequivalence of linagliptin/metformin HCl was demonstrated in a previous study, with co-administered linagliptin and metformin tablets in healthy subjects with Type 2 Diabetes.[1,2]In clinical studies, adverse reactions were uncommon. Gastrointestinal disorders occurred most frequently during initiation therapy with linagliptin/metformin HCl or metformin HCl and tended to resolve spontaneously. A comparable rate of diarrhoea was reported with linagliptin/metformin HCl treatment versus metformin plus placebo.[2] Due to the impact of background therapy, hypoglycaemia was more commonly reported in patients treated with the combination of linagliptin/metformin HCl and sulphonylurea compared with those treated with the combination of placebo, metformin and

sulphonylurea.[1]Linagliptin (5 mg, once-daily) is marketed as Trajenta® across Europe and Canada, as Tradjenta® in the US, and Trazenta® in Japan, as well as in additional markets.

**About Linagliptin/Metformin HCl**

Linagliptin/metformin HCl is not intended to be used in patients with Type 1 Diabetes or for the treatment of diabetic ketoacidosis (increased ketones in the blood or urine).[1,3]The use of linagliptin/metformin HCl in combination with insulin has not been adequately studied.[1,3]Linagliptin/metformin HCl will be made available in the following twice-daily doses in Europe: 2.5 mg linagliptin/850 mg metformin tablets and 2.5 mg linagliptin/1,000 mg metformin tablets.[1]

**About Linagliptin**

Linagliptin is an inhibitor of the enzyme DPP-4 (dipeptidyl peptidase-4) which is involved in the inactivation of the incretin hormones GLP-1 and GIP (glucagon-like peptide-1, glucose-dependent insulinotropic polypeptide). Linagliptin glucose-dependently increases insulin secretion and lowers glucagon secretion thus resulting in an overall improvement in the glucose homoeostasis.[1]Linagliptin (5 mg, once-daily) is marketed as Trajenta® across Europe and Canada, as Tradjenta® in the US, and Trazenta® in Japan, as well as in additional markets.[4,5]Linagliptin is a prescription medicine that is used along with diet and exercise to lower blood glucose in adults with Type 2 Diabetes.4,5 Linagliptin is not for people with Type 1 Diabetes or for people with diabetic ketoacidosis (increased ketones in the blood or urine). [4,5] It is not known if linagliptin is safe and effective when used with insulin.[5]

**About Diabetes**

An estimated 366 million people worldwide have Type 1 and Type 2 Diabetes.[6] Type 2 Diabetes is the most common type, accounting for an estimated 85 to 95% of all diabetes cases.[7] Diabetes is a chronic disease that occurs when the body either does not properly produce, or use, the hormone insulin.[8]This press release contains forward-looking statements about linagliptin and linagliptin/metformin HCl tablets for the treatment of Type 2 Diabetes. It reflects Lilly's current beliefs; however, as with any such undertaking, there are substantial risks and uncertainties in the process of drug development and commercialisation. There is no guarantee that future study results and patient experience will be consistent with study findings to date or that linagliptin and linagliptin/metformin HCl will prove to be commercially successful.