PhUSE 2007

Paper PO08

Pharmacokinetic data file(s) creation process

Ann Cuijpers, Hilde Wuyts, Iris Van de Vliet
Johnson & Johnson Pharmaceutical Research and Development,
Biometrics & Clinical Informatics – and -
Clinical Pharmacology, Beerse, Belgium

ABSTRACT

In order to start a pharmacokinetic(PK)(/pharmacodynamic(PD)) analysis, the Clinical Pharmacology(CP) department needs to obtain data from different sources, different departments:

- Clinical database: raw- and analysis data (sampling/dosing information, demographics, adverse events, co-medication, age…)
- Bioanalytical database (analyte concentrations)
- Other: e.g. Protein binding information, Drug content information

These source pharmacokinetic/pharmacodynamic data are combined in one or more data files by the Biometrics and Clinical Informatics(BCI) Statistical programmer analyst (SPA). The required derived variables will be added by this SPA.

For all clinical studies that have PK/PD data, these data files will be generated by BCI for CP.

Creation of the draft data files for PK/PD analysis will start after a draft PK Data Files Specifications (DFS) document is discussed and agreed upon by the PK analyst and SPA, when applicable with input from the Advanced Modelling & Simulation (AM&S) scientist and the BCI project statistician, and before clinical data base closure.

The final data files, holding the actual concentration data, are created after clinical database closure and are considered complete after they are transferred to and approved by CP within a week after clinical database closure.
The generated data files will be used to start the PK/PD analysis, including the calculation of the PK parameters and may be used to support a regulatory submission afterwards. Therefore the files need to be eSub compliant.

INTRODUCTION

This paper is mainly intended for statistical programmers and/or PK analysts but also for anyone who is involved or interested in the creation of PK data files needed for the calculation of PK parameters and the analysis of PK data. The paper will describe the main principles and functionalities of the pharmacokinetic data file creation process before and after database lock.

1. PREPARATION OF THE PK DATA FILE(S) CREATION PROCESS BEFORE DATABASE LOCK

The PK data file(s) creation process starts prior to database lock by the creation of the PK data file(s) specification document by the PK analyst. This document shows which variables: raw, analysis and derived, the PK analyst requires to do his PK analysis.
The main task for the programmer at this point is to draft .csv files holding the specified variables. The files will be created based on raw clinical data and clinical analysis data. The raw data include the bio-analytical sample data available via a view on the Bio-analytical department's database. No concentration data will be revealed prior to database lock; since they could unblind the trial data.
The PK analyst will check whether the file(s) received is/are as specified. If not, appropriate programming adjustments can be made by the BCI SPA prior to database lock.

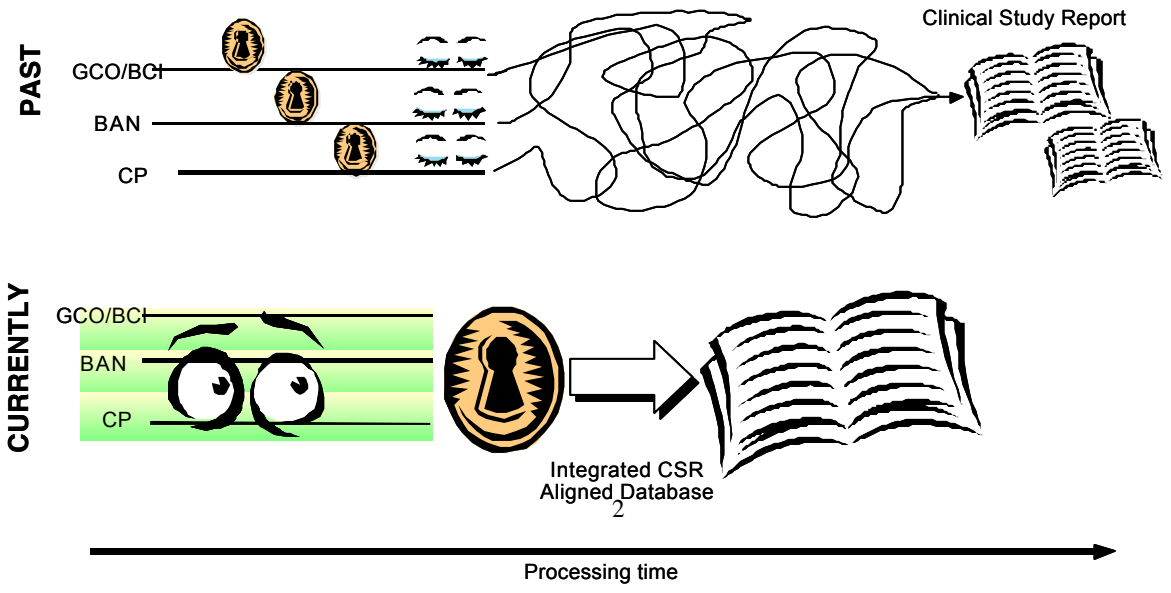
2. THE PK DATA FILE(S) CREATION PROCESS AT DATABASE LOCK

At database lock the bio-analytical department releases the drug concentration data. Via a view the data become available in the raw clinical database.
Together with all other clinical data the concentration data as well as the randomization data are delivered to the BCI SPA as SAS datasets.

3. THE PK DATA FILE(S) CREATION PROCESS AFTER DATABASE LOCK

Within a weeks time after clinical database lock the final PK data files are delivered to the CP dept. Only in exceptional cases changes need to be made to the delivered files as they are always well prepared. Sometimes the analysis data sets need to be recreated after database lock. For example when there is a re-opening (modification) of the clinical database or when there are updates made to the analysis data set definitions. Whenever the analysis data sets are recreated the PK data files are recreated as well. At the same time data set specific .txt files will serve as documented evidence for all changes that occur after database lock.

4. OVERVIEW



CONCLUSION

A major benefit of the PK data file(s) creation process for the company is that a lot of valuable disk space, time and resources are saved by performing a specific task or capturing the same data only once. Through this process a lot of tasks can be done in parallel and pro-actively rather than being done sequential on the critical path. The process also reduces, for instance, the number of copies kept of the same data. It reduces the effort of validation. Provides the opportunity to work more streamlined together over different departments towards submission. And not to forget sheds a bigger light on the big picture of what a clinical trial is about for each individual whether it's an employee, an auditor, someone working at the authorities we submit our data to.

ACKNOWLEDGEMENTS

Special thanks go to the different departmental heads for granting the time and resources to work out this streamlined process.
We also like to thank all BCI programmers/statisticians and PK analysts for providing input on how the process can be improved even more.

CONTACT INFORMATION

Your comments and questions are valued and encouraged.

You can contact the following people by e-mail:

Process developers	Ann Cuijpers(BCI), Hilde Wuyts(BCI), Iris Van de Vliet(CP)
Company	Johnson & Johnson Pharmaceutical Research & Development, Janssen Pharmaceutica N.V.
Address	Turnhoutseweg 30
City/Postcode	2340 Beerse BELGIUM
Work Phone	+32 14 60 3036, +32 14 60 6249, +32 14 60 7124
Fax	+32 14 60 5309
Email	acuijper@prdbe.jnj.com, hwuyts1@prdbe.jnj.com, ivdvliet@prdbe.jnj.com
J&JPRD web	http://www.jnj.com/