FDA - University of Maryland CERSI - ADEPT 8: Workshop on drug dosing in Pediatric Patients with Renal Impairment

11/30 and 12/01 2023 - FDA White Oak Campus

Opportunities for generating clinical trial data to assess impact of renal impairment on pharmacokinetics in pediatric patients

Industry (and pediatric clinical trialist) perspective

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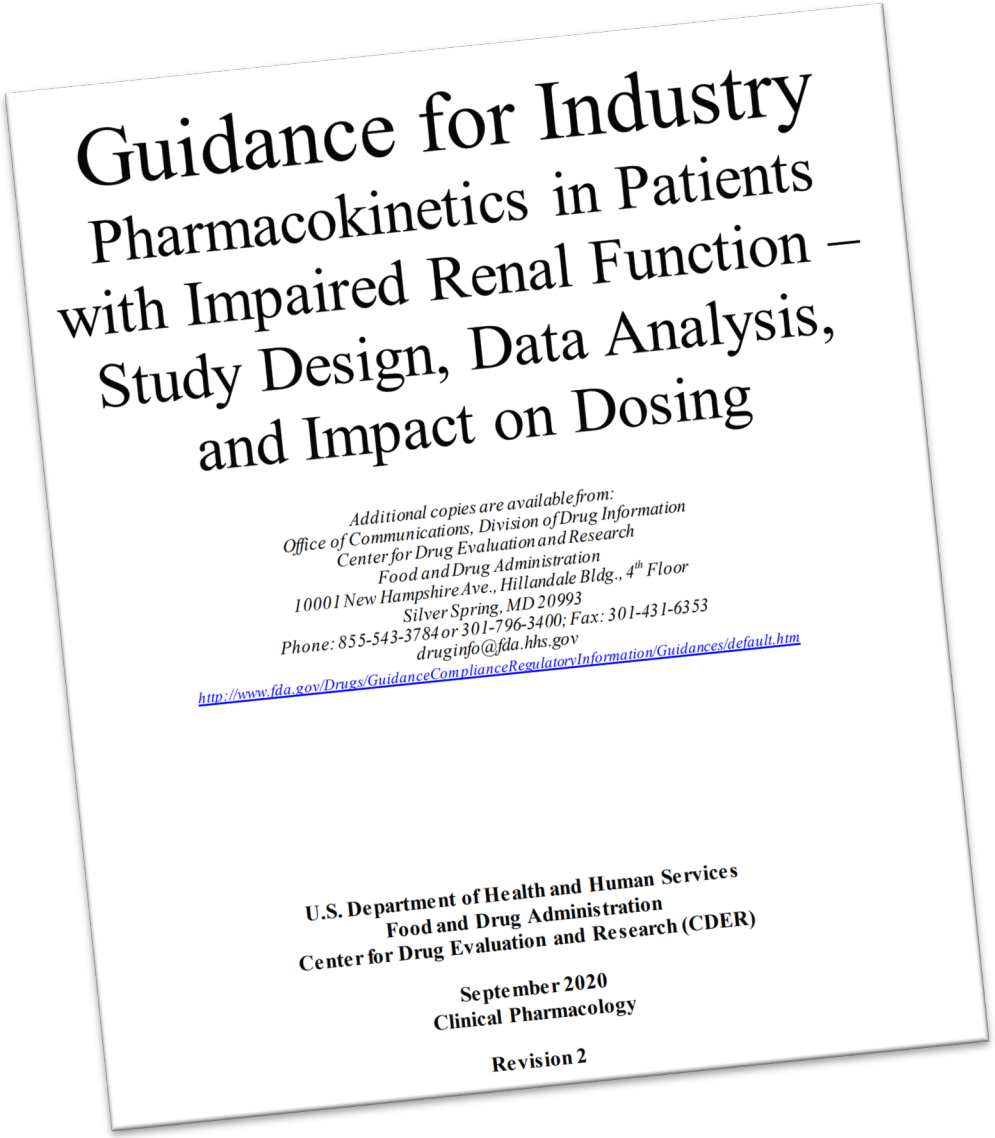
Disclosures

- Jan Marquard is employee of Boehringer Ingelheim Pharmaceuticals, Inc.
- Views and opinions expressed at this workshop are those of the speaker and do not necessarily reflect the views or positions of Boehringer Ingelheim.



Guidance for Industry

Pharmacokinetics in Patients with Impaired Renal Function – Study Design, Data Analysis, and Impact on Dosing

Additional copies are available from:
Office of Communications, Division of Drug Information
Center for Drug Evaluation and Research
Food and Drug Administration
10001 New Hampshire Ave., Hillandale Bldg., 4th Floor
Silver Spring, MD 20993
Phone: 855-543-3784 or 301-796-3400; Fax: 301-431-6353
druginfo@fda.hhs.gov
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Food and Drug Administration
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September 2020
Clinical Pharmacology

Revision 2

Drug dosing in Pediatric Patients with Renal Impairment

- When do we need data, and what kind of data do we need?
  - Is the drug likely to be used in pediatric patients with RI?
  - Is impaired renal function likely to alter the PK of the drug or its active metabolites because they are substantially eliminated by the renal route?
  - Do we have PK data from adult phase 2/3 studies and dedicated PK studies in adult patients with RI (incl. in patients receiving dialytic therapies)?

It's important to define the PK data needed to plan evidence generation appropriately – in line with feasibility:

- Full PK data in a sufficient number of pediatric patients over a range of renal function (incl. RI) and age ranges?
- PK modeling* based on PK data in adult patients with and without RI and pediatric patients with normal renal function – extrapolation to pediatric patients with RI?
- Post-marketing data collection to monitor PK in pediatric patients with RI?
- No data needed (e.g., topical use only without systemic exposure)?

RI Renal Impairment; PK Pharmacokinetics; *PK modeling includes popPK analyses and physiologically based PK modelling (PBPK)

Considerations for inclusion of pediatric patients with RI in clinical trials 1/2

- Recruitment challenges in pediatric diseases, especially rare ones.
- How can we address unmet needs and include special populations, such as patients with renal impairment, hepatic impairment, significant comorbidities, premature infants, and others?
- Consider how to include patients from special populations/ with RI without affecting the clinical development timelines for the populations needing new treatment options.
- Is the data in pediatric patients with renal impairment needed at the time of approval, or can the data be obtained in a post -marketing setting using real -world data collection?
  - When/how and where to collect the PK data – is a clinical trial needed?

RI Renal Impairment; PK Pharmacokinetics

Considerations for inclusion of pediatric patients with RI in clinical trials 2/2

- Can patients with RI be included in clinical trials without losing efficacy and compromising the primary efficacy endpoint?
- Explore alternative trial designs to accommodate patients with RI without compromising study timelines, e.g., ancillary open -label active PK assessment in pediatric patients with renal impairment.
- Key inclusion and exclusion criteria for discussion related to pediatric patients with renal impairment:
  - Renal Function
  - Age
  - Concomitant Medications
  - Disease Severity
  - Other Comorbidities

RI Renal Impairment; PK Pharmacokinetics

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Potential success criteria:

- Develop standardized methods for assessing renal function in pediatric patients.
- Support the use of innovative trial designs to include pediatric patients with RI with the aim of keeping studies feasible.
- Establish standardized criteria for PK models based on adult data and define criteria for extrapolation to pediatric patients with RI.
- Enhance post-marketing real-world data collection to monitor the PK, safety, and efficacy of drugs in pediatric patients with renal impairment.
- Establish a global pediatric clinical trials network for special populations (including RI) to facilitate patient recruitment and data sharing.
- Provide incentives for conducting clinical trials in pediatric patients with RI/ other special populations, such as fast-track approval processes.
- To further encourage collaboration between regulatory agencies, pharmaceutical companies, and academic institutions to share data and resources for pediatric drug development in patients with RI.

RI Renal Impairment; PK Pharmacokinetics

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Thank you!