

Press release

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Basic information

Name: Sabine Frølich Maarbjerg

Email: Sabine.froelich@midt.rm.dk Phone: 22165904

Department of: Clinical Medicine

Main supervisor: Associate professor Birgitte Klug Albertsen

Title of dissertation: Piperacillin Pharmacokinetics and Target Attainment in Childhood Cancer

Date for defence: 3. december at (time of day): 14.00 Place: Auditorium G206-145, indgang G, G206

Press release (Danish)

Optimering af piperacillin behandling til børn med kræft og infektion

Moderne kemoterapi hos børn med kræft er forbundet med mange bivirkninger, og infektion er den hyppigste, potentielt livstruende, bivirkning. På trods af markante fremskridt i behandlingen, er infektioner fortsat associeret med en øget dødelighed. Med kun få antibiotika, der er godkendte til anvendelse hos børn, samt begrænset udsigt til udvikling af nye antibiotika til behandling af resistente bakterier, er det afgørende at optimere indgiftsmetode og dosis for allerede godkendte antibiotika. Piperacillin-tazobactam bruges i vid udstrækning til behandling af infektioner hos børn med kræft. Men optimal dosering af stoffet er fortsat en udfordring idet evidensen omkring omsætningen af stoffet hos denne gruppe børn er sparsom.

Med det overordnede formål at optimere antibiotikabehandlingen af infektioner hos børn med kræft, beskrives spektret af bakterier, der gaver ophav til disse infektioner samt resistens overfor de hyppigst anvendte antibiotika. Desuden undersøges, hvordan børn med kræft omsætter piperacillin-tazobactam samt hvorvidt optimale antibiotika-koncentrationer i blodet opnås ved standard bolus-indgift og kontinuerlig infusion af stoffet. Resultaterne er sammenfattet i et nyt Ph.d.-projekt fra Aarhus Universitet, Health. Projektet er udført af Sabine Frølich Maarbjerg.

Forsvaret af ph.d.projektet er offentligt og finder sted d. 3. december 2021 kl 14:00 i Auditorium G206-145, indgang G, G206, Aarhus Universitetshospital, Palle Juul-Jensens Boulevard 99, 8200 Aarhus N.

Titlen på projektet er "Piperacillin Pharmacokinetics and Target Attainment in Childhood Cancer".

For yderligere oplysninger, kontakt venligst Ph.d. studerende Sabine Frølich Maarbjerg, email: sabine.froelich@midt.rm.dk, Tlf: +45 22165904

Bedømmelsesudvalg:

Jan Maxwell Nørgaard, Associate professor (Formand for bedømmelsesudvalget)
Department of Hematology, Aarhus University Hospital, Aarhus, Denmark

Thomas Lehrnbecher, Professor
Pediatric Hematology and Oncology, Hospital for Children and Adolescents
Johann Wolfgang Goethe University, Frankfurt am Main, Germany

Lillian Sung, Professor
Division of Haematology/Oncology
The Hospital for Sick Children (Sick Kids), Toronto, Ontario, Canada

Press release (English)

Piperacillin Pharmacokinetics and Target Attainment in Childhood Cancer

Contemporary, intensive chemotherapy in childhood cancer patients is highly burdened by acute toxicities, and febrile neutropenia is the most common, potentially lethal toxicity. Despite notable improvements in infection management, bloodstream infections still adversely impact clinical outcome and increase mortality rates. With only few antimicrobials approved for pediatric use and a long pipeline for new antimicrobials to treat resistant bacteria, optimization of type of administration and dosing regimens for available antimicrobials becomes exceedingly important. Piperacillin-tazobactam is frequently used to treat pediatric febrile neutropenia, however, optimal dosing remains a challenge due to limited pharmacokinetic data.

With the overall purpose of optimizing the antibiotic therapy of pediatric febrile neutropenia, this PhD project provides new insights into epidemiology and antimicrobial susceptibility of bloodstream infections, assess piperacillin pharmacokinetics and evaluate achievement of therapeutic targets with various dosing regimens of piperacillin-tazobactam in childhood cancer patients. The Ph.d. project was carried out by Sabine Frølich Maarbjerg.

The defence is public and takes place on December 03th, 2021 at 14:00 in Auditorium G206-145, indg. G, G206, Aarhus University Hospital, Palle Juul-Jensens Boulevard 99, 8200 Aarhus N.

The title of the project is "Piperacillin Pharmacokinetics and Target Attainment in Childhood Cancer" For more information, please contact PhD student Sabine Frølich Maarbjerg, email: sabine.froelich@midt.rm.dk, Phone +45 22165904

Assessment committee:

Jan Maxwell Nørgaard, Associate professor (Chair of the committee and moderator of the defence)
Department of Hematology, Aarhus University Hospital, Aarhus, Denmark

Thomas Lehrnbecher, Professor
Pediatric Hematology and Oncology, Hospital for Children and Adolescents
Johann Wolfgang Goethe University, Frankfurt am Main, Germany

Lillian Sung, Professor
Division of Haematology/Oncology
The Hospital for Sick Children (Sick Kids), Toronto, Ontario, Canada

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