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Disclosure(s) Nothing to disclose

P29 A SMARTPHONE APPLICATION TO MONITOR NAUSEA IN PEDIATRIC CANCER PATIENTS DURING CHEMOTHERAPY

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Background Nausea is a common and distressing side effect for children in chemotherapy. Antiemetic recommendations are based on limited literature and prospective evaluation of antiemetic efficacy is required. Smartphone applications (apps) may collect patient-reported outcomes with precision and effectiveness¹. We developed a smartphone app to track nausea in pediatric cancer patients during chemotherapy.

Methods Medical researchers, pediatric oncologists and software engineers worked synergistically in the development. We translated the validated Pediatric Nausea Assessment Tool to score nausea severity². We conducted three rounds of patient-feedback and modification.

Results The app has a definition module where the child centers the attention to the concept of nausea. The child can then express nausea severity with four faces and the child's own definition of nausea is incorporated in the question². The app includes a notification system to ensure high response rates. All participants felt that the app was user-friendly, intuitive and that time spent was acceptable.

Conclusion The app is a user-friendly tool to assess nausea in pediatric cancer patients that can ease future pediatric antiemetic trials.

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P30 LIMITED SAMPLING STRATEGIES TO PREDICT VALGANCICLOVIR EXPOSURE IN KIDNEY TRANSPLANTED CHILDREN

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Background Ganciclovir and its pro-drug, valganciclovir, are anti-viral drugs used in cytomegalovirus infections treatment in kidney transplanted children. Both present a high pharmacokinetic variability requiring dosage individualization and Therapeutic Drug Monitoring to ensure optimal therapeutic exposure. This retrospective monocentric study aimed to develop a Limited Sampling Strategy (LSS) predicting Area

Under the Curve (AUC_{0-24h}) reducing the number of blood samples to improve and facilitate kidney transplanted children medical care.

Methods Pediatric kidney transplanted children treated with valganciclovir were included. Rich pharmacokinetic data from ganciclovir plasmatic dosages (sampling times at 0h, 1h, 2h, 4h, 8h, 12 h and 24 h) were collected between February 2005 and November 2018. Ganciclovir exposures at steady-state (AUC_{0-24h}) were calculated using the trapezoidal method. The LSS was developed using a multilinear regression approach to predict AUC_{0-24h}. The overall patients population was divided into two groups for model development and validation purposes.

Results 129 patients were included: 46 girls and 83 boys, mean age at transplantation was 11.3years ± 5.1. Multilinear regression models were developed on 85 pharmacokinetic profiles (85 patients, mean AUC_{0-24h}=64µg.h/mL ± 27, creatinine clearance=72.4 mL/min per 1.73 m²) and validated on an independent group of 73 pharmacokinetic profiles (44 patients). Regressions based on samples collected at 0, 2, 4 h (R=0.946) or 0, 2, 8 h (R=0.968) presented the best AUC_{0-24h} predictive performances (RMSE=7.5 and 6.6, MAE=5.7 and 4.8 respectively) with an average difference between reference and predicted AUC_{0-24h} of -0.52 and 0.67µg.h/mL respectively.

Conclusions To date, this is the largest cohort of valganciclovir treated pediatric transplanted children used to develop a LSS. This LSS allows to accurately predict ganciclovir AUC_{0-24h} in pediatric transplanted patients using 3 pharmacokinetic blood samples at 0h, 2h, and 4 h post-dose. Beside other Bayesian estimators developed in the literature, this multilinear regression can be easily implemented into daily practice facilitating patients care.

Disclosure(s) Nothing to disclose

P31 NO INTERACTION BETWEEN DOXAPRAM AND CAFFEINE FOR THE TREATMENT OF PRETERM NEONATES WITH APNEA

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Background In preterm neonates with apneas, co-administration with doxapram is often initiated in case of inadequate response to caffeine alone. While doxapram is exclusively registered for adults, there is limited information on its use in preterm infants. To examine whether the observed effects of doxapram are actually due to doxapram itself, and not a pharmacokinetic interaction between both respiratory stimulants, we studied the pharmacokinetics (PK) of caffeine in a population of preterm neonates receiving both caffeine and doxapram.

Methods Caffeine concentrations from patients in the DINO study (NCT02421068) who received both caffeine and doxapram were analyzed using NONMEM V7.3. A PK model of caffeine in preterm neonates was used as a basis to estimate the PK parameters of caffeine when co-administered with doxapram with F fixed to 1 and k_a fixed to 1.48 h⁻¹.¹ The