considering the available drug products for administration or the therapeutic range of the drug. This can lead to lack of consistency in dosing and drug administration errors, which affects many children of all ages treated with medicines.[1] There are no established standards for dose-banding in national or international healthcare systems. This project aimed to establish dose-banding limits for paediatric medicines, to be used for prescribing and administering accurate, safe, and effective drug doses.

Method A list of the most common oral prescribed medications was established from the medication dispensing database of four hospitals in the UK. Then the evidence for safe and effective dose ranges for each drug on the list was identified from paediatric reference books, Summary of Product Characteristics (SPC) and published literature. After using these data to develop dose bands based on body weight, we used a Delphi process to achieve healthcare professionals' consensus about the suggested dose bands for each drug on the list.

Results A total of 45 drugs for 45 specific indications were included. Four categories of dose-banding limits were established; drugs with 2-weight bands; 3-weight bands; 4-weight bands and 5-weight bands. Overall, for 53.3% (24/45) of the included drug, all their suggested dose-banding limits reached consensus after two rounds of Delphi. For 92% (22/24) of them, consensus was achieved on all their suggested bands in the first round. Only for 2 drugs the agreement was achieved after the second round. For the drugs included in 2-weight band and 5-weight band categories, all their suggested dose-banding limits received total consensus after round 1 of the Delphi process. For 9 drugs included in the 4-weight bands category, the agreement was achieved only on either one or two of their suggested dose bands. For 12 drugs, no agreement was reached on any of their suggested bands.

Conclusion The study results provide healthcare professionals with a set of recommended dose-banding limits for commonly prescribed drugs in the UK. These recommended limits could establish the basis for change in clinical practice to improve health care provided for children.

Acknowledgement This work is part of a larger project funded by the Neonatal and Paediatric Pharmacists Group.

REFERENCE

1. Rashed AN, Tomlin S, Arenas-Lópes S, *et al*. Evaluation of the practice of dose-rounding in paediatrics. *Int J Pharm Pract* 2019 May 29. doi:10.1111/ijpp.12549. [Epub ahead of print]

P47 EXTENT OF PAEDIATRIC EXPOSURE TO PHARMACEUTICAL EXCIPIENTS: AN EXPLORATORY STUDY

[1]Mohammed AbouDaya*, [2]Stephen Tomlin, [3]Asia N Rashed. *[1]Evelina London Children's Hospital, Guy's and St Thomas' NHS Foundation Trust, UK; [2]Great Ormond Street Hospital for Children NHS Foundation Trust, UK; [3]King's College London, UK; Evelina London Children's Hospital, Guy's and St Thomas' NHS Foundation Trust, UK*

10.1136/archdischild-2020-NPPG.56

Aim The assumption that excipients are inactive therefore non-harmful to patients is a declining opinion due to raised safety concerns of excipient activity, particularly in children.[1] There is limited data on the safety of excipients in children and a lack of standardisation of the risk-benefit use of excipients in the different paediatric populations.[2] This study aimed to investigate the extent of excipient exposure in children taking long-term oral liquids, admitted to Hospital, and to identify whether patients could be switched to a solid alternative due to the harm posed from liquid formulations.

Method A prospective observational study conducted in a UK paediatric hospital. The electronic medication chart for hospitalised children aged 0–18 years on long-term (for ≥6 weeks) oral liquid medicines, were reviewed over a four-week period. A priority list of eight excipients (called harmful excipients) with known reported hazards was developed based on literature: propylene glycol, ethanol, parabens, benzyl alcohol, aspartame, sorbitol, polysorbate 80 and benzoic acid. The list was used to determine the extent of children exposure to the harmful excipients. Considering patient factors (age, swallowing ability, treated condition), prescribed dose and availability of solid dosage forms, the included long-term liquid medicines were assessed for a potential solid form alternative by a specialist paediatric clinical pharmacist.

Results A total of 302 oral liquid medicine formulations prescribed for 60 patients (age range 10 days – 17 years) were included in the study, of which 68.9% (208/302) were long-term oral liquid formulations. The 208 oral liquid formulation contained a total of 1044 excipients resulted in 17.4 (± 9) excipients per patients. Majority of patients (98.3%, 59/60) were exposed to at least one harmful excipient in their medicines. Children aged 2–11 years and 6–11 years were exposed the most to harmful excipients (mean 8.2 ± 4.9 exposure per patient). Parabens (81.7%, 49/60) was the most common harmful excipient patients were exposed to, followed by sorbitol (76.7%, 46/60), ethanol (75.0%, 45/60) and propylene glycol (70.0%, 42/60). Considering patient factors, prescribed dose and availability of solid formulations, it was found that almost third of the prescribed long-term oral liquid medicines (33.0%, 68/208) could be switched to tablet or capsule forms by pharmacist without any change to the prescribed dose. While for another 3.4% (7/208) long-term liquid medicines could be switched to solid dosage forms with prescriber approval, as prescribed doses would need to be adjusted slightly.

Conclusion The study highlights the extent of excipients exposure in children on long-term oral liquid medicines, many of which could potentially be harmful. Healthcare professionals should aim to reduce the long-term risks of excipients by providing an oral solid substitute to replace oral liquid formulation, where possible, and ensuring excipients are within safe, acceptable limits.

REFERENCES

1. Fabiano V, Mameli C, Zuccotti GV. Paediatric pharmacology: remember the excipients. *Pharmacol Res* 2011;**63**:362–365.
2. Buckley L, Salunke S, Thompson K, *et al*. Challenges and strategies to facilitate formulation development of pediatric drug products: Safety qualification of excipients. *Int J Pharm* 2018; **536**:563–569.

P48 AN AUDIT OF COMPLIANCE OF AGE AND CRITICAL DRUG RELATED MONITORING CRITERIA/REQUIREMENTS FOR PATIENTS RECEIVING CARBOPLATIN DOSES WITH THERAPEUTIC PHARMACOKINETIC DRUG MONITORING

Lamia Samrin-Balch*, Cindy Cheng. *Great Ormond Street, London*

10.1136/archdischild-2020-NPPG.57

Aim To determine the level of compliance to age and critical drug monitoring parameters required for patients receiving