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P002

MEDICINE USE AND OPTIMISATION FOR CHILDREN AND YOUNG ADULTS AGED 0–18 YEARS OLD – MEDICATION ADMINISTRATION AND ADHERENCE OF PARENT/CAREGIVER AND CHILD

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Aim To systematically review all published evidence related to medication administration accuracy and its relation to improving medication adherence among paediatric population. The objectives are to identify, the main issues and challenges that the patients or their parents, caregivers or healthcare professionals face when administering or taking a medication any published methods or tools that improves medication administration accuracy and adherence among the paediatric population; and the health literacy and knowledge of parents/caregivers/healthcare professionals concerning medication administration.

Methods A systematic search of the literature to identify any related studies to medication administration among paediatrics was performed using the following bibliographic databases: PubMed, Scopus and Cochrane Library. The list of various synonyms of the keywords was defined following the PICOC model and a discussion between the authors. An information specialist was contacted to ensure the accuracy of the developed search terms. Search terms included a list of synonyms relating to i) paediatric ii) medication administration accuracy iii) medication adherence and iv) medication error. The search was limited to studies published in English. Only studies that report paediatric patients aged from 0 up to 18 years of age who are prescribed medication that requires administration by the parent, caregiver or themselves were included. Studies including mixed paediatric and adults were further investigated and data related to paediatric were extracted. Quality assessment will be integrated into the review process using 'CASP' checklist at the data extraction stage.¹ The study protocol was registered on PROSPERO.

Results All databases were systematically searched (in April 2018). Overall, 1,018 citations were found; of which 994 remained after removal of duplicates. After screening of titles and abstracts, 46 studies were considered eligible for inclusion in this review. At data extraction stage, 12 studies were excluded, owing to the lack of paediatric specific information or medication-related errors. 34 studies were further investigated, among which, 30 (30/34, 88.2%) studies reported that dosing errors are the most common type of medication errors and are associated with parents or caregivers with inadequate health literacy. Over-the-counter liquid medications and antibiotics are commonly associated with dosing errors among parents and caregivers. Two (2/26, 7.7%) experimental studies indicated that both droppers and cups are the prime causes of dosing errors that occur via parents. Two (2/34, 5.9%) review studies indicated that medication administration errors are common among children with prescribed inhalers. Finally, two (2/34, 5.9%) observational studies identified that labels and information sheets of the medication contribute to medication administration errors.

Conclusion The preliminary findings of this review suggest that further integrated education strategies between healthcare-professionals and parents or caregivers is a priority to reduce medication administration and dosing errors among children and young adults. To our knowledge, limited studies were conducted in the UK about this topic, hence, further work is required to highlight the issue of medication errors among children and its association with parents or caregivers health literacy in the UK.

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P003

INTERMITTENT VANCOMYCIN IN PAEDIATRICS: IMPLEMENTATION AND AUDIT OF A NEW GUIDELINE

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Aim A guideline for the use of intermittent intravenous vancomycin in children was designed and implemented in our Trust in 2016. This introduced the use of a loading dose, increased dosing and increased frequency compared to the BNFC recommendations. The changes were based on the outcomes of a national NPPG project and local focus groups. The aim of this audit was assess compliance with the guideline and to establish if the time taken to reach target vancomycin levels had been reduced as a result of using the new guidance.

Methods 30 paediatric patients (≥ 1 month old) prescribed intermittent intravenous infusions of vancomycin were identified by ward pharmacists over a 2 month data collection period. 4 patients required treatment with adult dosing due to their weight. 2 patients were switched onto continuous infusion following pharmacist intervention. The results of the remaining 24 patients were compiled into an excel spreadsheet for analysis.

Results Audit pre-implementation of the guideline had highlighted the lack of a support for staff to use appropriate dosing and monitoring.¹ Overall, usage of the new guideline was positive. The loading dose was used appropriately in 83% patients. Levels were taken at appropriate times in 90% patients. The percentage of levels in therapeutic range at 48 hours increased from 7% to 40%. 100% of patient had a review at this time. Half of the patients out of range at 48 hours had treatment stopped or changed to a more appropriate treatment, reducing the need for unnecessary complex dose adjustment/monitoring plans. At 48 hours, there remained 30% of the total patient group requiring dose adjustment in order continue vancomycin treatment. The main area of concern was that review of these out of range levels was only carried out in accordance with the guideline in 40% of cases. This was improved to 80% with pharmacist intervention. A limitation of this data was the small patient group size. One patient had the level taken at the wrong time so could not be interpreted properly.

Conclusion Compliance with the new guideline was good overall. This audit has shown that the use of the new guideline improved the percentage of patients with vancomycin levels in range at 48 hours from 7 to 40%. The main theme from this audit was that pharmacist intervention was the key to directing the medical teams towards prescribing the most appropriate form of treatment. Education can only improve