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PARACETAMOL DOSING IN HOSPITALISED CHILDREN - A NATIONAL SURVEY

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AIM

This survey aimed to establish how closely paracetamol prescribing for paediatric inpatients reflects dosing guidance in the British National Formulary for Children (BNFC) (1). The project was a joint collaboration between the Neonatal and Paediatric Pharmacists Group (NPPG) and the Paediatric Pain Travelling Club (PPTC).

METHOD

An electronic survey was developed jointly by members of the NPPG and PPTC and generated using Survey Monkey. The e-survey was emailed to all UK members (NPPG n=430 (155 sites) and PPTC n=293 (54 sites)) in July 2020. A reminder was circulated 1 week afterwards and it was open for 3 weeks in total. Descriptive statistics and thematic analysis were used to describe the data.

RESULTS

169 people responded to the survey representing 76 UK sites (57.4% of all UK PPTC sites, 43.9% of all UK NPPG sites). Responses included 103 NPPG members (response rate 23.9%) and 66 PPTC nurses or anaesthetists (response rate 22.5%). Between 1 and 7 people per site responded (mean (IQR) 1(1-2)).

51 (67%) of sites reported using hospital dosing guidelines, rather than BNFC dose recommendations for oral paracetamol. For example, 34% sites use weight-based doses for all inpatients, whereas the BNFC recommends a mixture of age-banded and weight-based doses, depending on indication. 'Appropriate dosing' of oral paracetamol for children >1 month of age generated the most variation, frustration, confusion and disagreement amongst respondents both within and between sites. Strong views on avoiding sub-therapeutic doses in children with pain and not wanting to overdose children of low weight for age were provided. In some cases the views of pain team members contrasted with pharmacists who reported hospital-wide practice, probably reflecting the difference between prescribing for post-operative or severe pain vs treatment of pyrexia or mild-moderate pain.

65% of respondents adhered to the BNFC regimen for IV paracetamol completely. Of the 16 (21.3%) sites not using BNFC doses, 15 (93.8%) had a specialist paediatric pain team. Variation in dosing of IV paracetamol was mainly seen for neonates and patients >50kg. For neonates, respondents reported using the recommended BNFC maximum dose, but many altered the individual dose and/or frequency to optimise analgesia. For example 30mg/kg/day might be achieved using 7.5mg/kg every 6 hours vs the recommended 10mg/kg every 4 hours which would leave a large part of the day without doses able to be given. Patients >50kg were often prescribed IV weight-based doses rather than 1g every 6 hours.

CONCLUSION

Paracetamol dosing for inpatients does not consistently reflect BNFC dosing guidance. Clinical concerns of safety vs efficacy contribute to the variation identified and must be addressed in future dosing guidance in order to optimise safe and effective treatment for paediatric inpatients.