Paediatric Oral Fluid Challenges in London; is there a standard protocol?

REACH
Research, Evaluation & Audit for Child Health

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Paediatric Oral Fluid challenges (POFC) are a widespread, inexpensive intervention for a common presentation to paediatric emergency departments. However, anecdotally there is significant variation with regards to how they are undertaken (eg. indication, fluid type/volume and antiemetic use) and little consensus about what POFC protocol is most successful. A standardised, evidence-based POFC protocol may be able to promote regional best practice, reducing the need for IV fluids and hospital admission This project set out to answer the question - what is current practice in London paediatric emergency departments in terms of indications for POFC and how they are conducted?

Objectives

We aimed to map the range of POFC practices in paediatric emergency department in the London region and to compare physician-reported practice to both the local trust's clinical practice guideline as well as national best practice (National Institute for Clinical Excellence (NICE) guidance for rehydration in gastroenteritis (NICE CG84 [1]).

Methods

We designed a google form survey capturing the following data; indication for POFC, fluid type used, fluid volumes and frequencies used, antiemetic use and pass/fail criteria. The survey was disseminated to local leads of the resident-doctor led London REACH (Research, Education and Audit for Child Health) network [2] in 25 London trusts. Responding trusts were also asked to share local Paediatric Oral fluid Challenges guidelines where available.
Trust's guidelines were compared to their own practitioner reported practice and to the recommendation in NICE CG84 that if dehydration is present 50mls/kg of Oral Rehydration Solution (ORS) is given over 4 hours, without an antiemetic.

Results

We received 22 survey responses; these were analysed and responses were grouped as seen in Table 1.

POFC Practice Points	Responses
Indication	Gastroenteritis (100%)
	Poor oral intake (86%)
	Fever (27%)
Calculating fluid volume used	Weight (45%)
	Age (18%)
	No Calculation Used (36%)
Fluid Used	Oral Rehydration Solution (86%)
	Apple Juice (45%)
	Water (59%)
	Squash (45%)
	Milk - if milk fed (9%)
Antiemetic Used	Yes (59%)
	No (5%)
	Sometimes (41%)
Which Anti-Emetic Used	Ondansetron (100%)
Pass/Fail Criteria	Drinking certain volume (64%)
	Not vomiting (64%)
	Clinical assessment (45%)

Table 1: Practitioner reported Paediatric Oral Fluid Challenge practice points as detailed in a total of 22 survey responses (received from 22 trusts across the London region)

Results

Indication and pass fail criteria for POFC were often reported as a combination of factors, rather than a single criteria. A range of fluids were reported to be used for oral rehydration. Whilst durations of the POFC varied between 1 and 4 hours the fluid was usually given every 5-10 minutes. Trusts were split with regards to the use of an antiemetic, however if used the antiemetic of choice was Ondansetron.

9 trusts provided guidelines (Table 2). Only 2 of the survey responses indicated their guidelines were being fully followed in practice. Only 2 guidelines were fully adherent to the NICE CG84 recommendation of 50mls/kg of Oral Rehydration Solution (ORS) to be given over 4 hours, without an antiemetic.

		(A) Number of responses following own trust guideline	(B) Number of guidelines following NICE CG84 guidance
Fully adherent - no deviations		**2**	**2**
Partially adherent - 1-2 deviations from guideline		**4**	**5**
	Different fluid type	*2*	*2*
	Different fluid volume	*2*	*0*
	Different duration/timings	*2*	*3*
>2 deviations from guideline		**3**	**2**

Table 2: (A) Practitioner survey responses compared to their own guidelines provided and (B) whether these guidelines followed NICE CG84 guidance (50mls/kg of Oral Rehydration Solution (ORS) is given over 4 hours, without an antiemetic) (trusts that provided guidelines= 9)

Conclusions

Our survey shows that clinical practice does not tend to follow NICE nor local guidance fully. This might be due to high variability in the features of individual paediatric patients as well as the range of pathologies leading to dehydration. Whilst it is likely that a pragmatic, adaptable approach to rehydration is needed a standardised evidence based regional guideline might reduce variability in practice. We recommend a systematic review of published best practice regarding POFC protocols, to inform such a best practice guideline that we would aim to implement across the region, to improve the success of POFCs, reducing the need for admission and intravenous fluids.

References

[1] National Institute for Clinical Excellence; Diarrhoea and vomiting caused by gastroenteritis in under 5s: diagnosis and management; Clinical guideline CG84]Published: 22 April 2009. [Available from: www.nice.org.uk/guidance/cg84]

[2] REACH; Research, Evaluation & Audit for Child Health. [Available from: www.reachnetworkldn.com]