SUPPORTING ORAL EATING SKILLS IN CHILDREN ON DIALYSIS

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BARRIERS TO EATING

- Uremic toxins
- Altered smell and taste perception
  - Decreasing taste function with decreasing GFR
- Multiple medications and their side effects
- Gastroesophageal reflux
- Gastric motility disorders
- Constipation
- In infants with polyuria, thirst for water rather than feed, and stomach fullness from high water intake
- Comorbidities (hypertension; cardiac, pulmonary, or liver disorders)
- Abdominal fullness from dialysate or enlarged organs (eg, multicystic or polycystic kidney disease)

BARRIERS TO EATING

Accumulation of appetite-regulating cytokines and hormones that affect appetite and satiety (eg, interleukin-1,interleukin-6, tumor necrosis factor-α, leptin, ghrelin)

- Leptin is a hormone produced predominantly by adipose cells. Inhibits hunger.
- Leptin levels elevated in predialysis, HD and PD patients
- Not well eliminated in HD
- Ghrelin is a hormone produced in the gastrointestinal tract. In it's acylated form induces hunger and increases gastric acid secretion and gastrointestinal motility. Unacylated ghrelin inhibits appetite and increased levels might contribute to protein-energy wasting. Plasma total ghrelin mainly reflects unacylated ghrelin.
- Rises with elevating GFR, especially 5 and 5D
- Eliminated in HD, less so in PD

INFANT FEEDING

- Breastmilk and infant formula, possibly modified with modular components (carbohydrates, fat, protein)
  - In combination with renal-specific formula
- Introduction of solid foods
  - According to child's cues and oral motor skills
  - As varied as possible
  - Consideration for healthy eating habits
  - Inclusion of renal-specific formula allows for a more free diet

HOW TO HELP THE VOMITING CHILD

Need to ensure sufficient nutrition for growth and development

To reduce vomiting and nausea

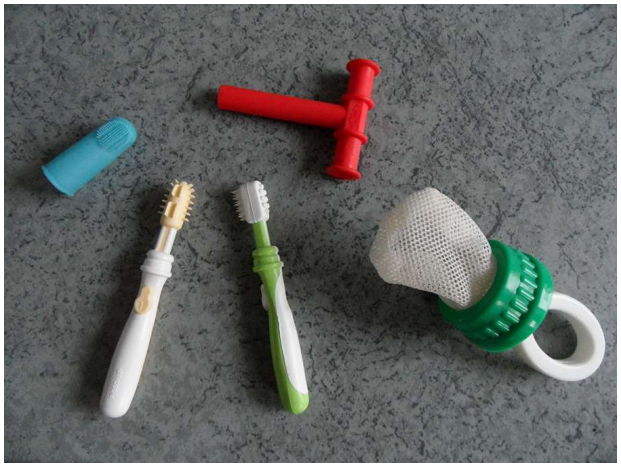
- Is dialysis adequate?
- Constipation well taken care of?
- A trial with feed thickeners
- Lower protein intake – lower urea levels
- Tolerance for feed volume vs. concentration
- Smaller, more frequent feeds
- Temperature of the feed
- Continuous feeds overnight

ORAL EATING CONSERNS WITH CHILDREN ON DIALYSIS

- Tube feeding affects on oral eating
- Dialysis during certain sensitive periods of different ages may disturb learning new eating skills
- Without practise motoric and sensoric skills develop slowly
- Connection between eating and speaking
- Challenges in feeding the child in a typical way may cause negative feelings in parents

SMOOTHER TRANSITION FROM TUBE TO ORAL EATING

- Discussion with parents
  - before, while and after dialysis
  - listen and encourage
- Practising motoric skills
  - with food, chewy tubes, safety feeder etc.
- Practising sensoric skills
  - with positive touching, food, toys, brushes etc.



MEAL TIMES DURING DIALYSIS

- Should be pleasent experiences
  - no force feeding
  - family eats together
  - switching routins
- Goal is to keep interest on food
- You can always do something nice or fun with food
  - if you cannot eat, you can taste, if you cannot taste, you can touch…
- Quality not quantity

AFTER TRANSPLANTATION

- In ideal case
  - positive relationship with food
  - motoric and sensoric skills are good enough to start oral eating
- Many children need support
- Appetite may return but feeling hunger may not due to extra fluid
- Different support approaches
  - meetings with families
  - individual speech therapy (eating therapy)
  - Playpicnic
  - SOS (Sequential Oral Sensory) approach

THANK YOU!

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