An established patients transition in Critical Care

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Medical Background

- 18 year old male
- PMH – Epilepsy, x linked microduplication involving MeCp2, Learning Disabilities
- AED: Sodium valproate/lamotrigine/zonisamide
- KDT: 2 years 9 months
- Recurrent chest infection – azithromycin
- Prone to constipation – laxido OD
- Last admission around 7 months prior

Ketogenic Background

- Classical 3:1 and MCT
- 2684kcals, 260g fat, 70g protein, 16g carbs
- No growth concerns - Stable weight of 60kg BMI 22.5kg/m^2
- Pureed food & thickened fluids at risk
- ?Gastrostomy
- Previously discussed weaning from keto diet

Admission

- Severe pneumonia
- Intubated and ventilated
- Infusions included 10ml/hr propofol, alfentanil, metaraminol and maintenance fluids
- Tazocin pxd
- Awaiting NGT for feeding

Reviews

- Joint reviews with keto RDs
- Daily reviews looking specifically at feed deliveries/BM/ketones/meds changes etc to amend feeding plan and advise accordingly
- Linking in with ward round/NIC/paeds neurology team
- Updating staff about changes to plan, reminding them about medical management booklet etc

Patient Journey

Dietetic Journey

- Day 0-16 = NG feeding
- Day 17-20 = TPN
- Day 21 = PN + tropic feeding
- Day 25 = Weaning off PN onto NG feed
- Day 26 = CVC out and no spare port on new CVC
- Day 27 = Fully NG fed
- Gastrostomy placed post ICU stay

Medical Journey

- New twitching - D24 MRI: no acute change, non-epileptic cause
- Tracheostomy day25 – now long term tracheostomy patient
- Seizures now managed by 6 different seizure meds
- Bowels still causing concern but moving more regularly

Dietetic Plan

- Aim 2000-2500kcal, 250-260g fat, 65g protein & 16g CHO
- Ketocal 4:1, protifar, polycal provided by special feeds unit
- Gradually increase feed over 3 days
- D1-3 aim 70% reqs
- 4-hourly Blood sugar and ketones
- Medical management plan provided

Main factors affecting KDT

- Feed delivery
- Medications & IV fluids
- Bowels

Feed Delivery

- Reduced feed rate due to
  - high aspirates
  - Incorrect reduction of feed rate when aspirate <300ml
  - day to day interruptions for investigations etc
  - Abdo distension

- Protein: safe intake 52g vs 65g

Medications & IV fluids

- Propofol dose
- Hartmanns IVI
- Glucose shot
- Carbocisteine
- Paeds dose laxido vs adults
- Meropenem

Bowels

BNO for 3 days = Laxido increased & senna started

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BO - All laxatives stopped

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Smearing & overflow with ++abdomen distension

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Glycerine suppositories, Picosulphate & enemas introduced one at a time

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No improvement

Ketogenic diet in critical care: Did we achieve it?

Unfortunately not this time.

Discussion

What worked well?

- Special feeds unit prepared and delivered feeds as needed
- Good partnership between adult and paediatric dietitian
- Respect for ketogenic MDT
- Collaborative working
- Parents were specialists in KDT
- Good relationship with parents

What did not work well?

- Being caught between paediatric and adults service
- Lack of knowledge and awareness of KDT amongst ICU team
- Lack of continuity with nursing and consultant care

Thank you for listening

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