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OUTCOME IN THE 2 YEARS FOLLOWING A COURSE OF EXCLUSIVE ENTERAL NUTRITION IN A COHORT OF >100 PAEDIATRIC CROHN'S DISEASE PATIENTS

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Introduction EEN is an effective 1st line treatment for active paediatric Crohn's disease (CD). We explored the short & long term effects of EEN including anthropometric parameters and evaluated factors that predicted subsequent disease outcomes.

Methods A retrospective case note review in newly diagnosed CD (<16 years) who completed 8 weeks of EEN. Demographics, anthropometry, disease characteristics and inflammatory markers were taken at EEN initiation and then at 1, 2, 6, 12 & 24 months post diagnosis. Clinical response to EEN was characterised according to the global physician assessment.

Results 110 patients were included (Males 68; Median age: 11.2 years). At diagnosis 34% were thin (BMI ≤ -2 SD), 1% obese (BMI ≥ 2 SD), 10% had short stature (height ≤ -2 SD) and 25% were underweight (weight ≤ -2 SD). By 4 weeks of EEN weight and BMI z-score increased significantly (-1.1 cf. -0.6 and -1.3 cf. -0.4 respectively, $p < 0.02$) with a smaller increase between 4 and 8 weeks (-0.6 cf. -0.4 and -0.4 cf. -0.05 respectively, $p < 0.05$). Children with active disease ($n=12$) gained less weight than those in remission (2.2 vs 5.0 kg respectively, $p < 0.05$). There was a strong negative correlation between weight/BMI z-score at diagnosis and magnitude of change at the end of EEN ($r = -0.76$, $p < 0.0001$). Compared to baseline albumin, CRP and platelets significantly improved and weeks 4 and 8 (Albumin (g/L): 31 ± 6.4 vs 36 ± 4.7 ; CRP (mg/L): 44.1 ± 48.8 vs 16.1 ± 13.9 ; platelets ($\times 10^9$): 525 ± 147 vs 471 ± 165 ; all $p < 0.01$) but not between weeks 4 and 8. ESR improved significantly between 0 and 4 ((ESR (mm/h): 43.5 ± 23.2 vs 24.3 ± 20.7 , $p < 0.00001$) and continuing to fall to 18.8 at 4–8 weeks ($p < 0.01$ cf. 4 weeks).

44 patients completed a 2nd course of EEN; median weight gain improved but was less than the initial course (3.3 vs 5.1 kg, $p < 0.05$). Of these children, 19 achieved remission after both courses and 2 children who had active disease after the first course went on to achieve remission after the second course. BMI z-score at diagnosis was the strongest predictor of BMI z-score at any time point of the follow-up. The size of weight or BMI z-score change at the end of the primary EEN did not predict time to subsequent clinical relapse or anthropometry at follow-up. Median height z-score did not change compared to diagnosis.

Conclusion Anthropometry improves with EEN but the change is smaller in the second half of the initial course or in secondary courses. Weight gain is not a predictor of time to relapse or anthropometry at follow-up to 2 years. Systemic inflammatory markers improve during the 1st 4 weeks of treatment with little improvement at the second half.

Competing interests None.

Keywords anthropometry, Crohn's disease, exclusive enteral nutrition, paediatric.