**Introduction**

The current management of constipation in children is largely based on good clinical practice rather than evidence-based data. The relatively recent availability of paediatric formulations of macrogol 3350 plus electrolytes (PGE+E) for children has been shown to be effective in both paediatric faecal impaction in an inpatient setting and subsequent maintenance therapy. This study covered a period of disimpaction between January 2001 and 2006, but macrogol 3350 is an outpatient setting compared to enemas and suppositories and manual evacuation in the hospital setting for disimpaction based on actual clinical practice in England and Wales.

**Methodology**

Study Design

The data was retrospective review of the case notes of a cohort of children with faecal impaction who initially received either macrogol 3350 or enemas and suppositories or manual evacuation from five centres in England and Wales.

Patient Selection

Patients were eligible for inclusion in the study if they were 2-11 years of age and suffering from constipation judged severe enough to require disimpaction and initially disimpacted between 1st January 2001 and 31st January 2006.

Patients were excluded if they had any condition contraindicating the use of macrogol 3350, enemas and suppositories.

Eligible patients were identified from paediatric medical case notes and prescribing databases.

All eligible patients for whom records were available were included in the study.

**Results**

**Clinical Outcomes**

Ninety-seven percent of macrogol 3350-treated children were successfully disimpacted within 5 days, compared to 73% of those treated with enemas and suppositories and 88% of those who underwent a manual evacuation (Table 1). A mean of 20 children (SD 15) of macrogol 3350 and 38 children (SD 11) of those o/p the placebo plan formulation were required for successful disimpaction within 5 days.

A mean of 36 children (SD 14) were required for successful disimpaction within 5 days together with 1 (SD 1) 2 suppository.

**Use Resource**

There were no significant difference between treatments in terms of outpatient visits (Table 3). However, patients initially disimpacted with macrogol 3350 had significantly lower hospital admission rates than disimpacted with the other intervention and occupied fewer beds. The number of hospital admissions reduced by 5,726 (92%) from 5,884 to 2,168 over the study period. No significant difference was seen in costs associated with each treatment pathway would change by varying different parameters within the model.

**Sensitivity Analyses**

Sensitivity analyses were undertaken using Monte Carlo simulations (1,000 iterations) by simultaneously varying the probability and resource use values within the model. In addition, descriptive sensitivity analyses were performed to identify how the healthcare costs associated with each treatment pathway would change by varying different parameters within the model.

**Discussion**

Disimpaction with macrogol 3350 was found to be more effective across all paediatric outpatients than among inpatients (10%, 38% vs 31% respectively). Disimpaction was achieved within 4 days in 54% of the inpatient clinical practice compared to 73% of outpatient clinical practice. No patients required manual evacuation with macrogol 3350 and also suppositories was found to be as comparable to that observed in clinical trials and was significantly lower for those who initially received enemas and suppositories or underwent a manual evacuation (Table 2).

Understanding these intercentre variances the outcomes and level of healthcare resource use observed in the analysis would be indicative of other centres across the UK.

**Conclusion**

Within the limits of our model, use of macrogol 3350 affords the NHS a clinically effective and cost-effective treatment that facilitates the disimpaction of children suffering from faecal impaction. The results of this model have the potential to release healthcare resources for alternative use within the system.