

The study begs the authors to take the next step of determining if the same promise of therapy can be applied to the super elderly population such as those of 80, 85 or 90 years of age.

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Improvement in vesicoureteral reflux grade on serial imaging predicts resolution

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Purpose: When children are initially diagnosed with vesicoureteral reflux most undergo a period of antibiotic prophylaxis followed by serial imaging. Although improvement in reflux grade through time presumably predicts eventual resolution, the significance of changing grade through time is unknown. We examined whether improvement in reflux on serial imaging predicts resolution.

Materials and Methods: We retrospectively reviewed 1,761 children diagnosed with vesicoureteral reflux, of which 965 had a minimum of 2 years of follow-up. We examined initial reflux grade and grade on serial imaging up to 5 years after the original diagnosis. For each child it was determined whether reflux was resolved, eventually resolved or never resolved. Groups were further stratified by clinical characteristics.

Results: Multivariate analysis revealed that male gender (HR 1.33, $p = 0.05$), age younger than 1 year at diagnosis (HR 1.35, $p = 0.004$), lower grade at presentation (grade I HR 2.2, grade II HR 1.96, grade III HR 1.33; $p < 0.001$) and unilateral reflux (HR 1.39, $p = 0.001$) were all independent predictors of reflux resolution. Multivariate analysis also showed that reflux improvement on imaging 1 year after diagnosis (HR 3.14, $p < 0.0001$) and improvement from the previous year at any point during follow-up (HR 1.8, $p = 0.009$) were independent predictors of reflux resolution.

Conclusions: Consistent with previous findings, male gender, lower reflux grade at presentation, age less than 1 year at presentation and unilateral reflux were all predictive of reflux resolution. Our analysis also demonstrated that improvement in reflux grade on imaging study 1 year after diagnosis was predictive of resolution, and that reflux improvement from the previous year at any point during follow-up was an independent predictor of resolution. This information will prove valuable in clinical counseling and therapeutic decision making.

Editorial Comment

The authors utilized their database of over 1,700 children with vesicoureteral reflux to determine whether improvement in reflux grade on serial imaging would predict resolution of reflux. They were able to identify 965 patients who had 2-5 years of follow-up for the study and then performed a multivariate analysis to identify predictors of resolution. Nuclear cystograms were performed routinely for follow-up studies in these children, therefore they considered Grade I reflux on a nuclear cystogram to be equivalent to a grade 1 on VCUG study. A nuclear cystogram with Grade II reflux was equivalent to a VCUG with Grade II and III on VCUG and Grade III reflux on nuclear cystogram was equivalent to Grade IV and V reflux on VCUG. Their

results demonstrated that male gender, age less than one year at diagnosis, lower grade of reflux at presentation and unilateral reflux were all predictors of spontaneous resolution, which is consistent with previous studies. In addition, they were able to demonstrate that reflux improvement on imaging one year after diagnosis, as well as improvement in reflux grade from the previous year at any point during follow-up, were both independent predictors of resolution.

This study has important clinical implications when counseling with parents over the decision to continue waiting for spontaneous resolution versus pursuing surgical correction of reflux. Though many of us have assumed that improvement in the grade of reflux is a positive indicator of a greater likelihood for spontaneous resolution, we now have data to back up our assumptions.

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Incidence of new onset metabolic acidosis following enteroplasty for myelomeningocele

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Purpose: Extant literature is mixed regarding risk of metabolic acidosis after enteroplasty for myelomeningocele. This study is the first known attempt to describe the pattern of developing metabolic acidosis in a group of children who underwent enteroplasty and served as their own controls. Multiple preoperative and postoperative laboratory measures for each child were obtained for comparison.

Materials and Methods: This retrospective cohort study allowed participants to serve as their own controls for pre-intervention and post-intervention analysis. The setting was a tertiary, university affiliated, interdisciplinary spina bifida program. All patients followed in the spina bifida program who had undergone ileal or colonic enteroplasty were included for review (total 113). Strict exclusion criteria were preoperatively diagnosed renal insufficiency, preexisting metabolic acidosis consistent with renal tubular acidosis (pH less than 7.35, bicarbonate 20 mmol/l or less) and history of augmentation using gastric or ureteral tissue. Final analysis included 71 children who met inclusion criteria. Children in our spina bifida program periodically undergo routine laboratory evaluation of electrolytes, blood urea nitrogen, creatinine, blood count, and venous blood gases including pH, bicarbonate and partial pressure of carbon dioxide. Primary outcome measures were comparative shifts in blood gases and electrolytes that would confirm the new onset of metabolic acidosis after enteroplasty. Changes in electrolytes and serum creatinine were secondary outcome measures to identify potential markers for postoperative effects. With each child as his/her own control, analysis included paired t tests.

Results: No statistically significant differences ($p < 0.05$) were found when comparing laboratory values before and after bladder augmentation, including pH, bicarbonate, partial pressure of carbon dioxide and electrolytes. No child had metabolic acidosis based on the aforementioned criteria. Followup ranged from 1 to 138 months after enteroplasty (mean 46.8). Respiratory compensation was considered in the analysis, and no difference in partial pressure of carbon dioxide following surgery was noted ($p = 0.65$).

Conclusions: To our knowledge no previous study has examined the matched paired results of before and after development of metabolic acidosis among children (serving as their own controls) with myelomeningocele