

Results of magnetically controlled devices parallel to the spine in children with scoliosis due to spinal muscular atrophy (SMA)

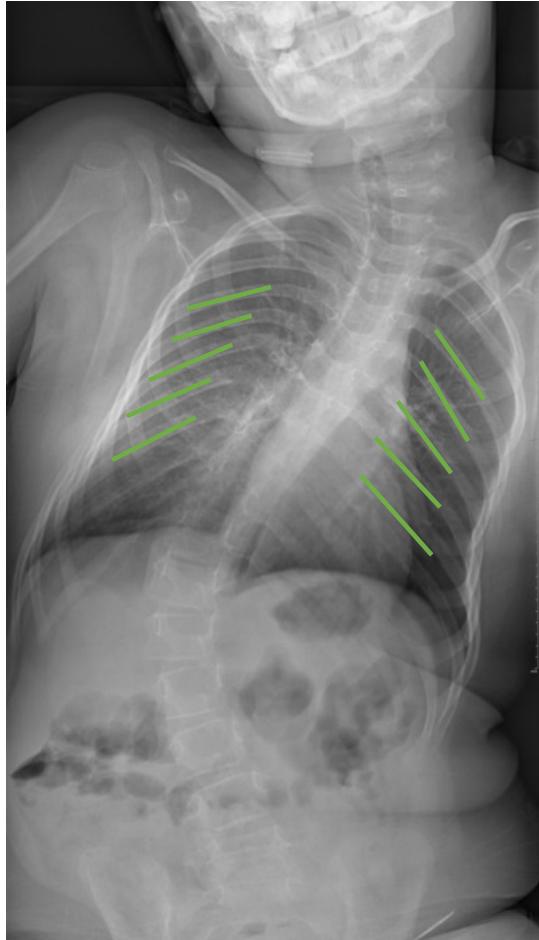


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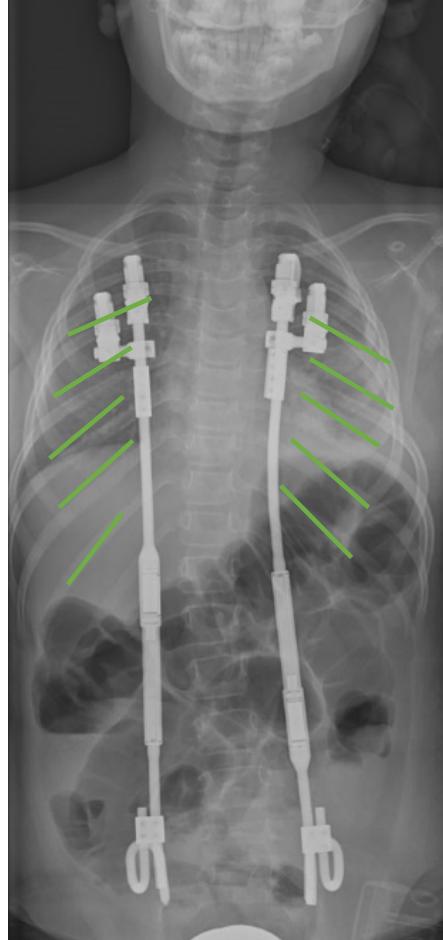
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* Disclosures: Research support from Ellipse/Orthovative

Introduction



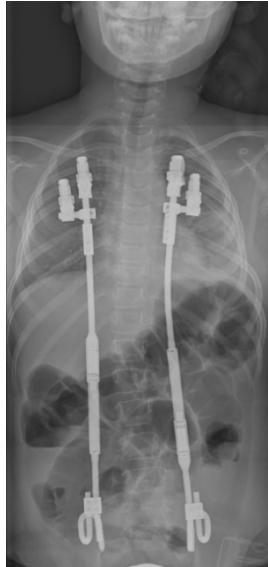
SMA II



Children with spinal muscular atrophy (SMA)

- Severe progressive scoliosis at early age
- Flexible deformities
- “collapsing parasol” ribs
- Brace not tolerated because of lung function impairment
- Early spinal surgery necessary
- Repeated surgeries - PICU

Introduction

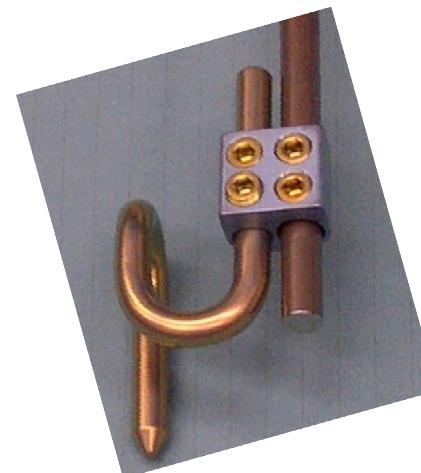


Ideal for MCGR treatment

- No lengthening surgeries
- No MRI follow-ups

Ideal for VEPTR / MAGEC combination

- Open up “parasol”
- Improve sitting balance



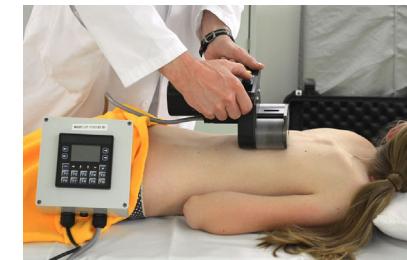
Campbell RM, Smith M, Hell-Vocke AK.
Expansion thoracoplasty: the surgical
technique of opening-wedge thoracostomy.
JBJS Am 2004; 86-A Suppl 1: 51-64

Methods

- n= 21 with SMA
- 10 female, 11 male
- Bilateral VEPTR-MAGEC construct



- Magnetically controlled lengthening
5 mm every 3 months
- Analysis of 704 x-rays



Results

Age at MAGEC implantation

- av 7.8 years (5-11.5)

Magnetically controlled lengthenings

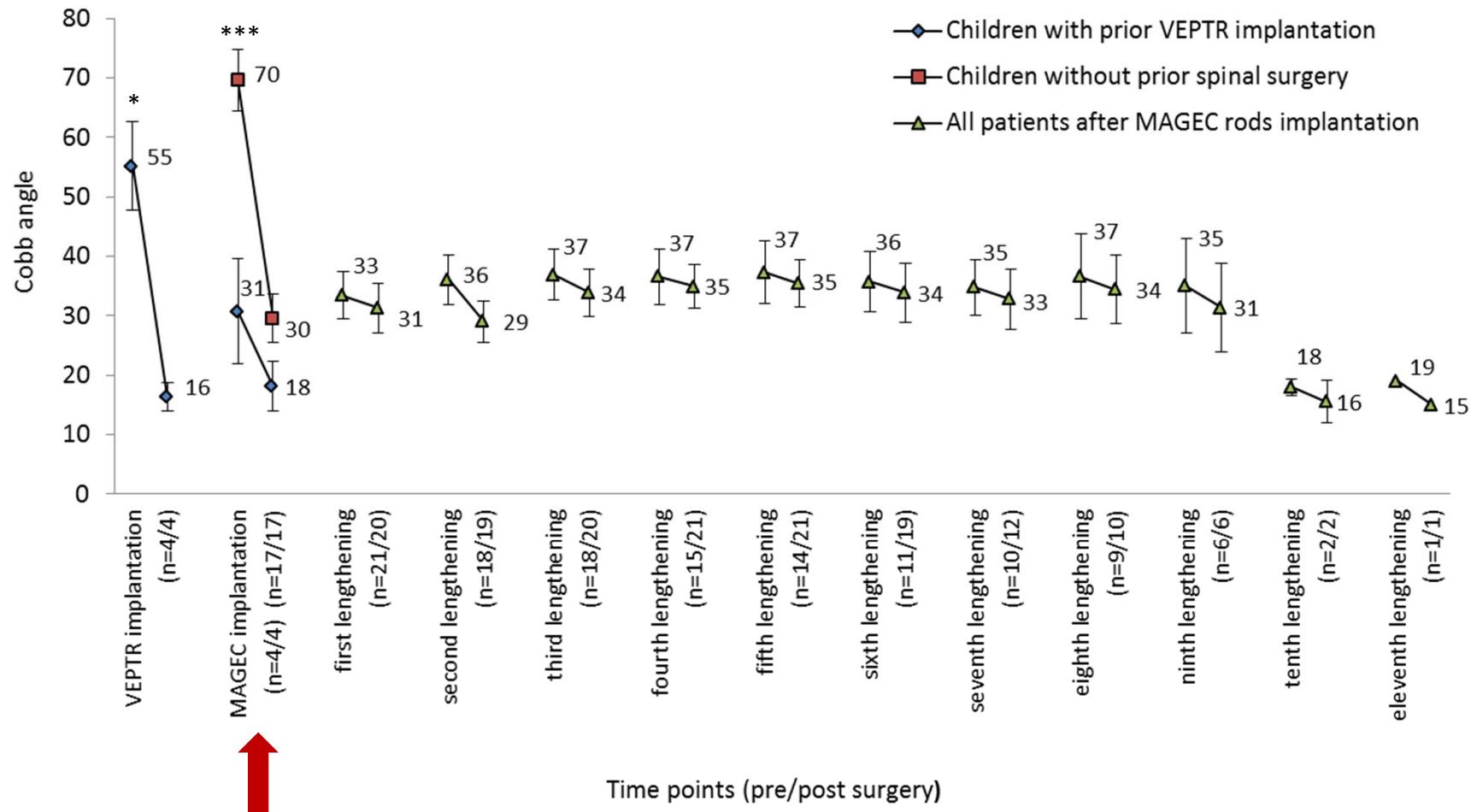
- av 6.7 (5-11)

Follow-up

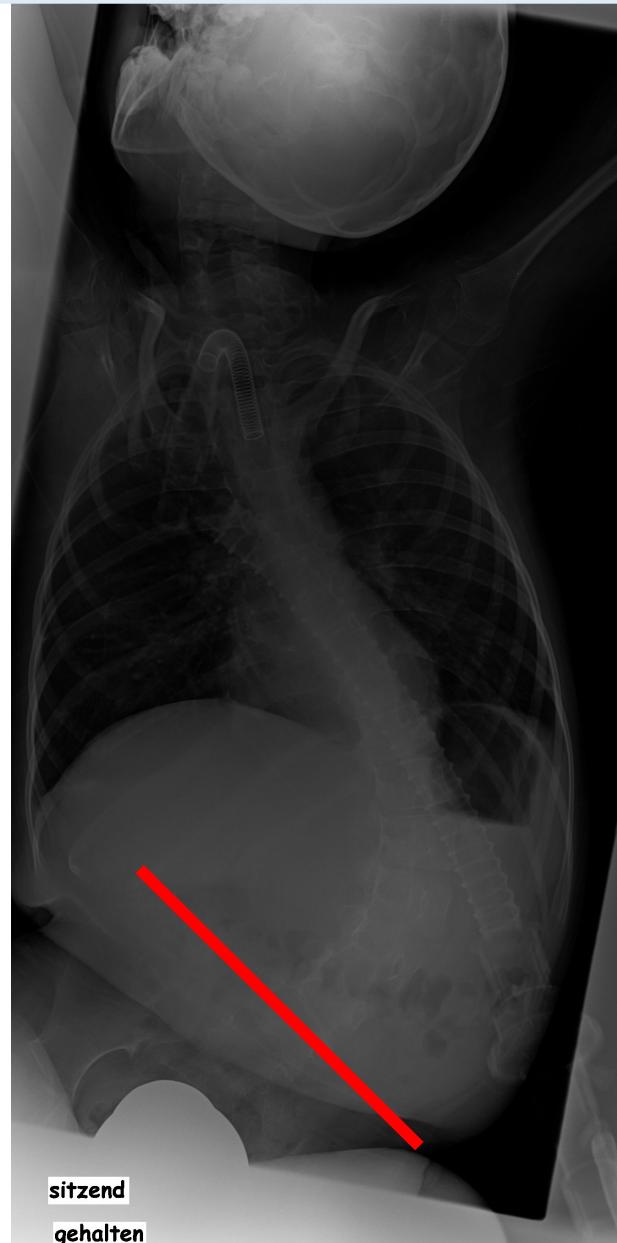
- av 24.8 months (17-40.6)



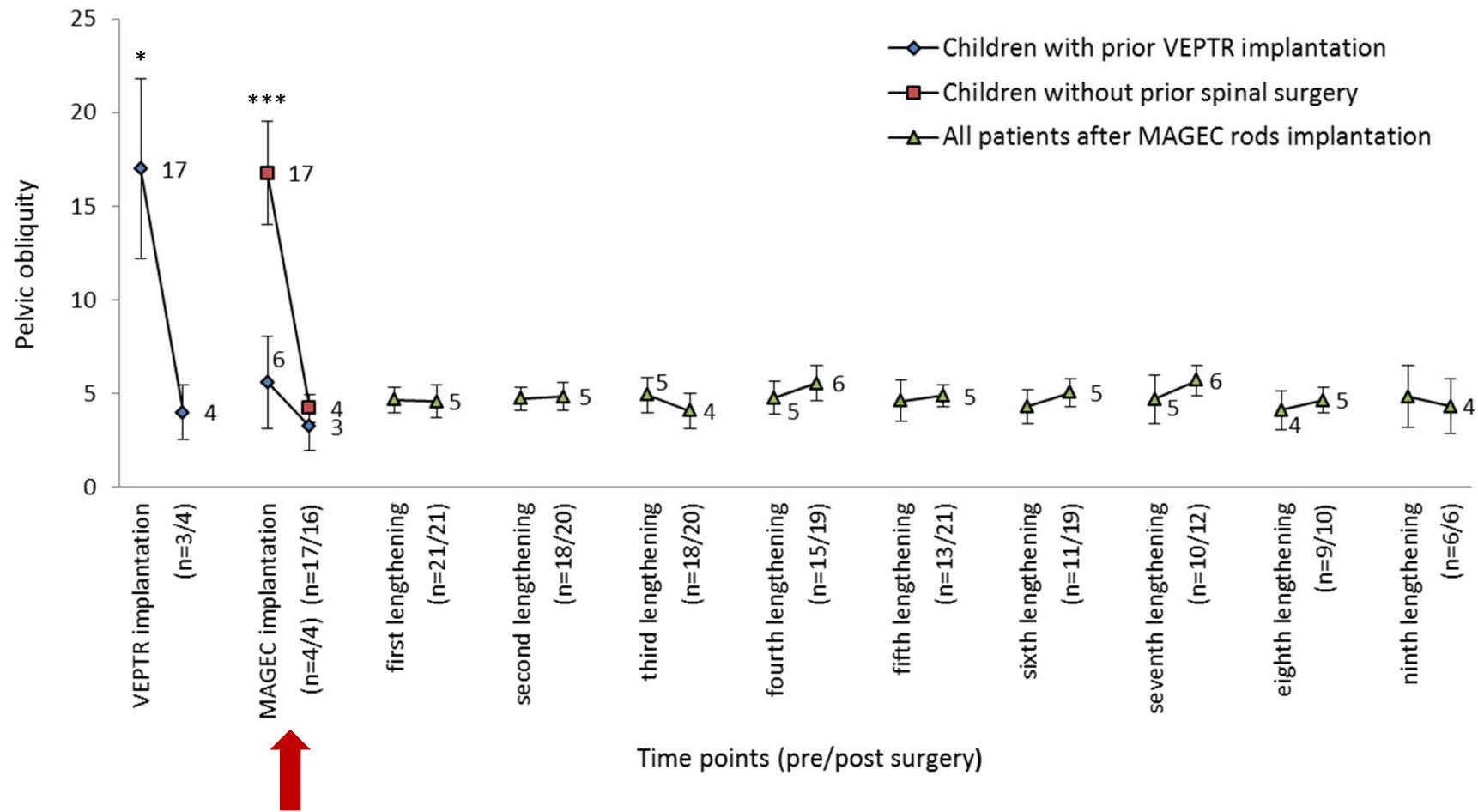
Results – Cobb angle



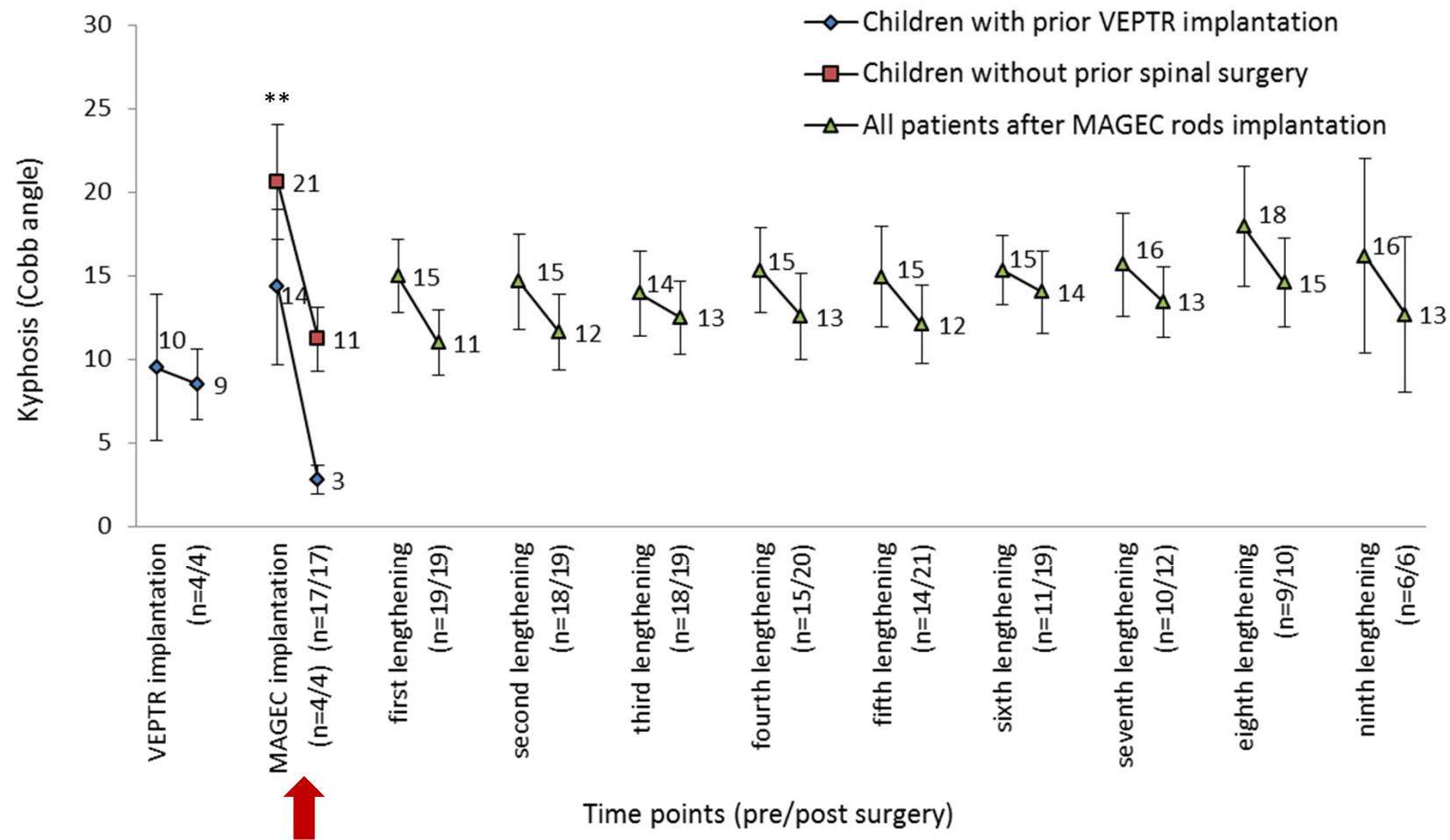
Results – Pelvic obliquity



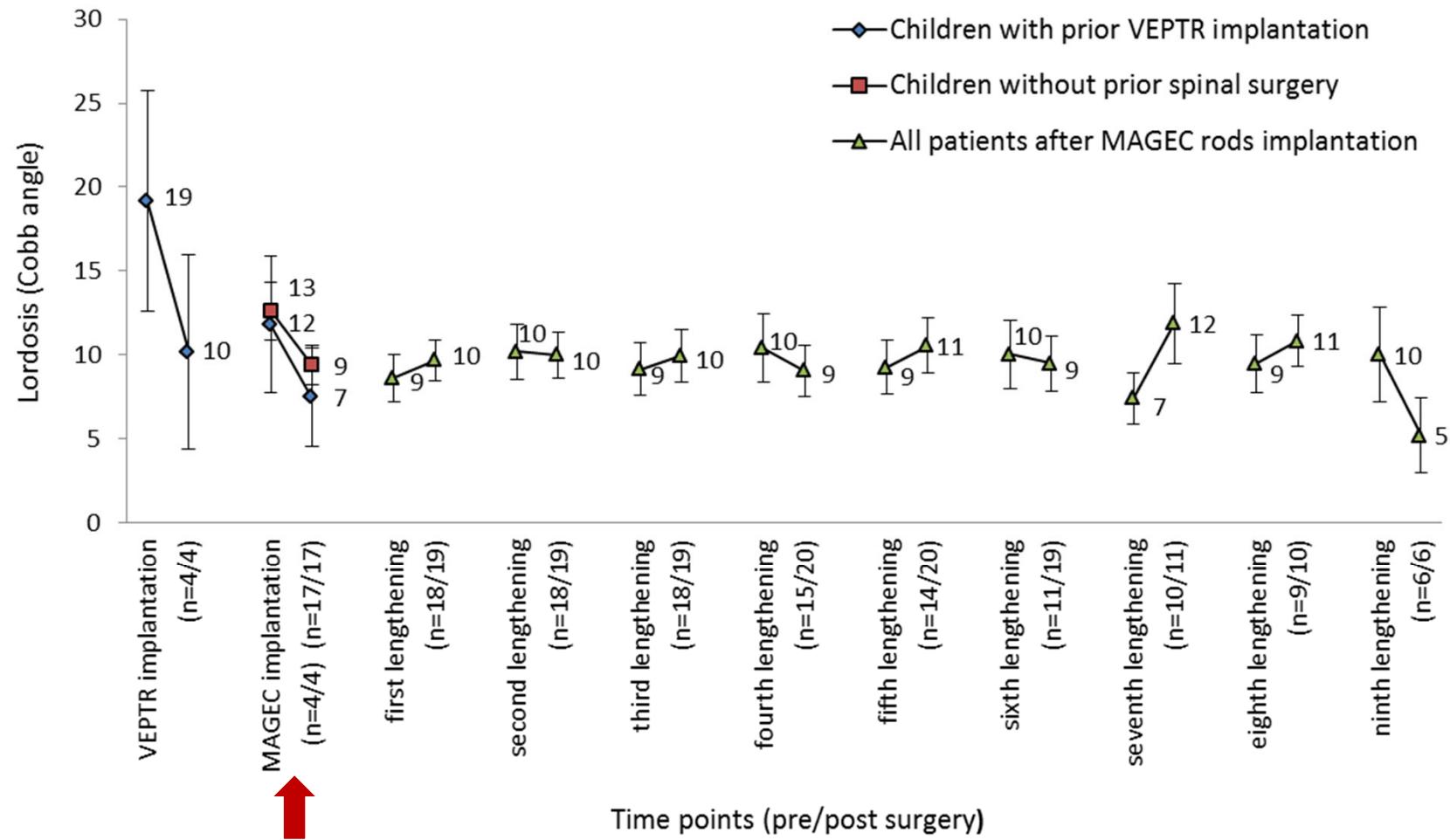
Results – Pelvic obliquity



Results - Kyphosis



Results – Lordosis



Conclusions

Bilateral VEPTR/MAGEC construct is a very effective method in treating flexible scoliosis in children with SMA

- > 2 years follow-up shows
 - significant reduction of cobb angle
 - normalization of pelvic obliquity
 - good control of kyphosis and lordosis



