



Sint Maartenskliniek

# CASTING AND BRACING IS EFFECTIVE IN JUVENILE IDIOPATHIC SCOLIOSIS

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# Juvenile Idiopathic Scoliosis (JIS)

- Progressive disease:
  - Restriction lung development & cardiopulmonary problems
  - Early treatment crucial
- Surgical treatment with growing rod systems:
  - Restriction longitudinal growth
  - High incidence and severe complications
- Conservative treatment with casting and bracing:
  - Infantile (0-3 yrs): success → surgery rates <16%<sup>1,2</sup>
  - Juvenile (3-10 yrs): less success → surgery rates 27% - 100%<sup>3,4</sup>





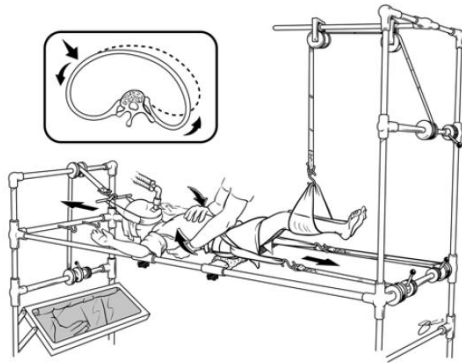
# Aim

Evaluation of the effect of casting and/or bracing in a single centre, consecutive series of juvenile idiopathic scoliosis





# Casting



Elongation Derotation Flexion (EDF)  
technique on a Cotrel table

# Bracing



Boston brace:  
> 18h/day



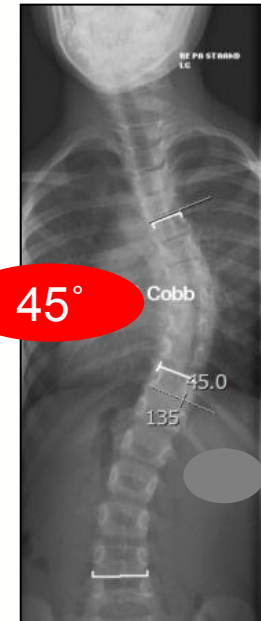
Charleston brace:  
"night" brace





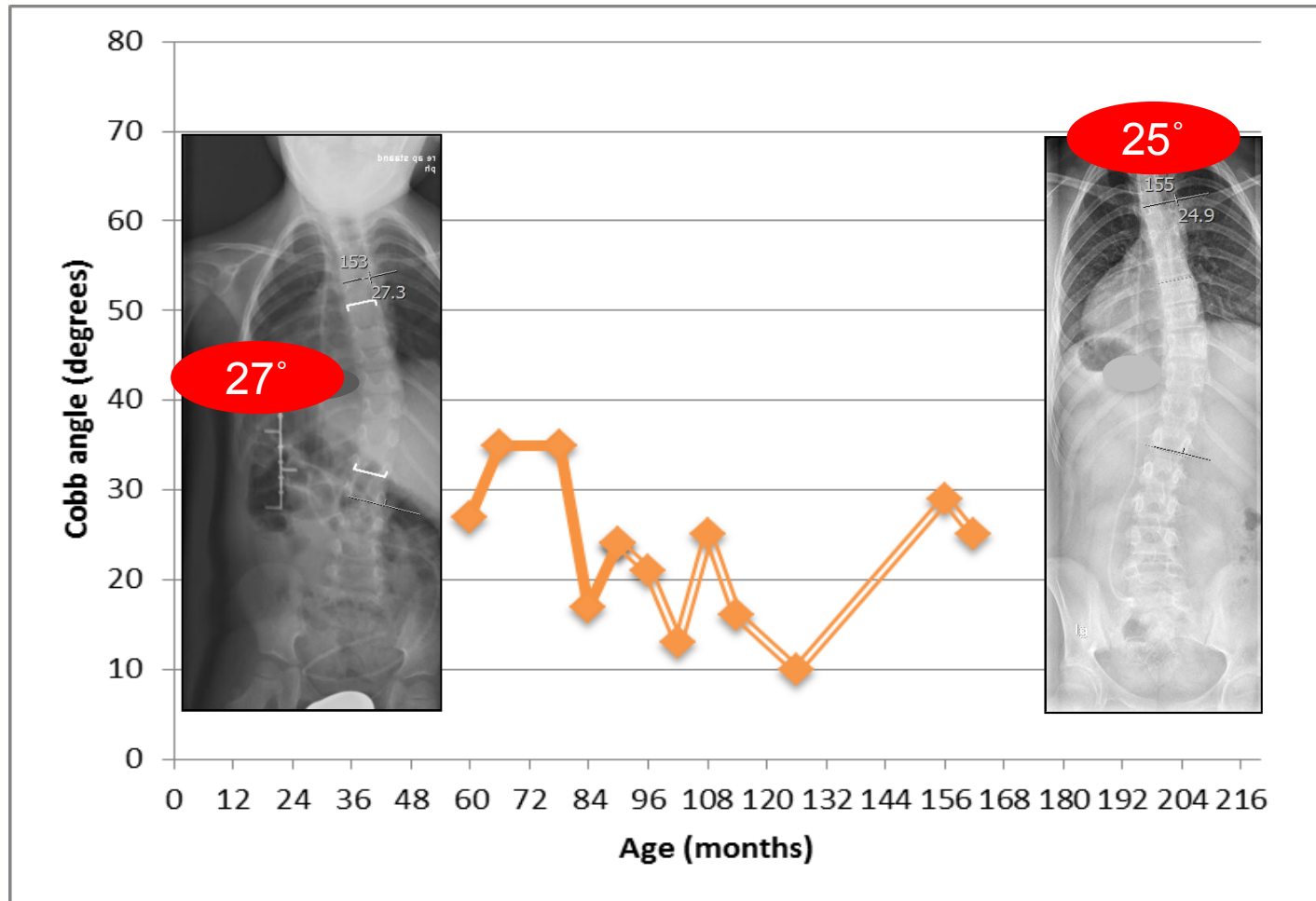
# Method

- JIS patients started treatment between 2003-2010
  - Cobb-angle  $>25^\circ$
  - 3-7 yrs at start treatment; M:F=2:6
  - Median follow-up 4 yrs (range 2.4-9.5 yrs)
- Treatment with EDF-cast and brace: n=4
- Treatment with brace: n=4
- Full spine X-rays: measurement Cobb-angle
- Succes: no indication for surgery at present
  - Cobb-angle:  $\leq 5^\circ$  progression  $\rightarrow$  Stabilizer
  - Cobb-angle:  $> 5^\circ$  improvement  $\rightarrow$  Responder





# Stabilizer

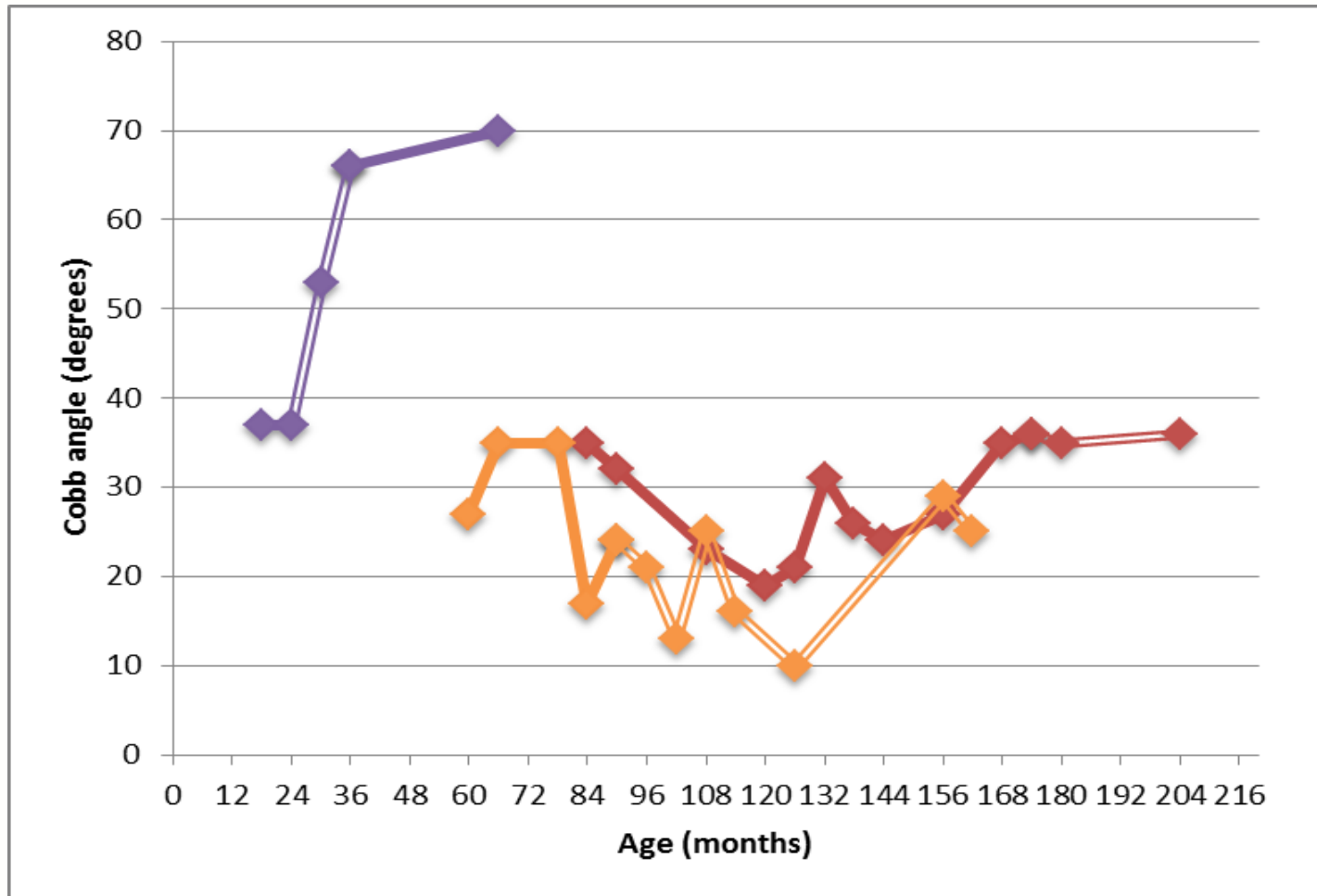


Dashed line:  
no active treatment





# Stabilizer: n=3

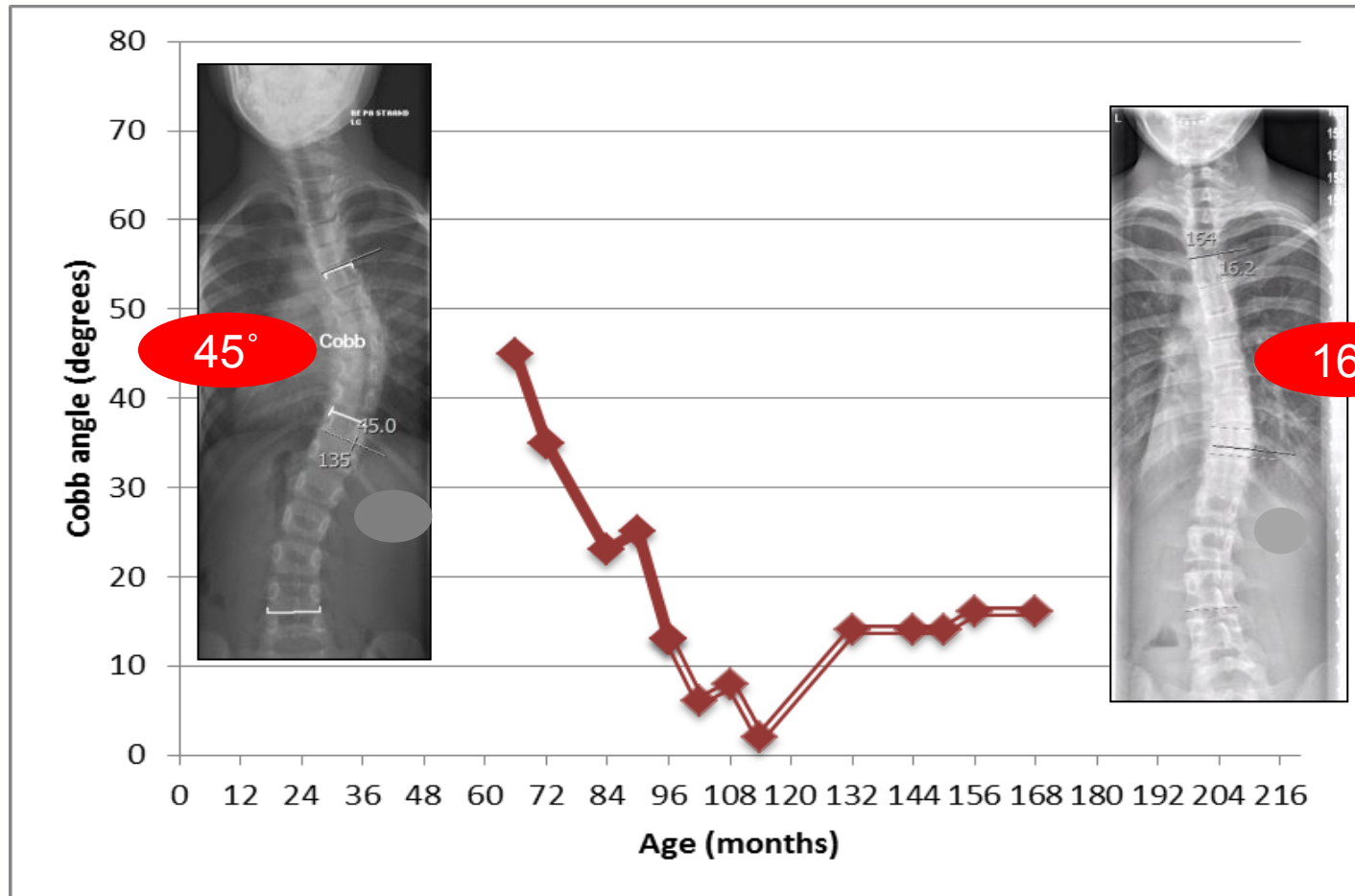


Dashed line:  
no active treatment





# Responder



Dashed line:  
no active treatment







# Responder: n=5



**median decrease of the Cobb angle: 32%**

Dashed line:  
no active treatment





# Summary

- To date, no indication for surgery = 100% success
  - 5 responders: median decrease of Cobb angle = 32%
  - 3 stabilizers
- No major complications from brace or cast treatment
- Up to now, we have managed to prevent surgery for at least several years in all patients.





# Conclusion

- Casting and/or bracing is effective in treating juvenile idiopathic scoliosis.
- Conservative treatment should be considered a valuable low risk treatment modality for progressive juvenile idiopathic scoliosis.



# Thank you



*None of the authors has any potential conflict of interest*

