

# **Traditional Growing Rod Graduates of Different Etiologic Categories have Similar Clinical and Radiographic Outcomes**

Hazem Elsebaie MD, FRCS

ICEOS 2019, Atlanta



# Authors



- Behrooz A. Akbarnia, MD, Jeff Pawelek, BS, Pooria Hosseini, MD, Pooria Salari, MD, Nima Kabirian, MD, David Marks, MD, Suken Shah, MD, David L. Skaggs, MD, MMM, John B. Emans, MD, Hazem Elsebaie, MD, George H. Thompson, MD, Paul D. Sponseller, MD, MBA,
- Pediatric Spine Study Group

# Introduction

- Current literature has rarely compared outcomes of GR surgery between the various etiologic categories of EOS.
- This study aimed at comparing long-term results of TGR treatment between different etiologies of EOS.

# Methods

- Retrospective
- Multicenter database query
- 202 patients
- Four etiological categories:

Congenital, Neuromuscular, Syndromic, and Idiopathic.

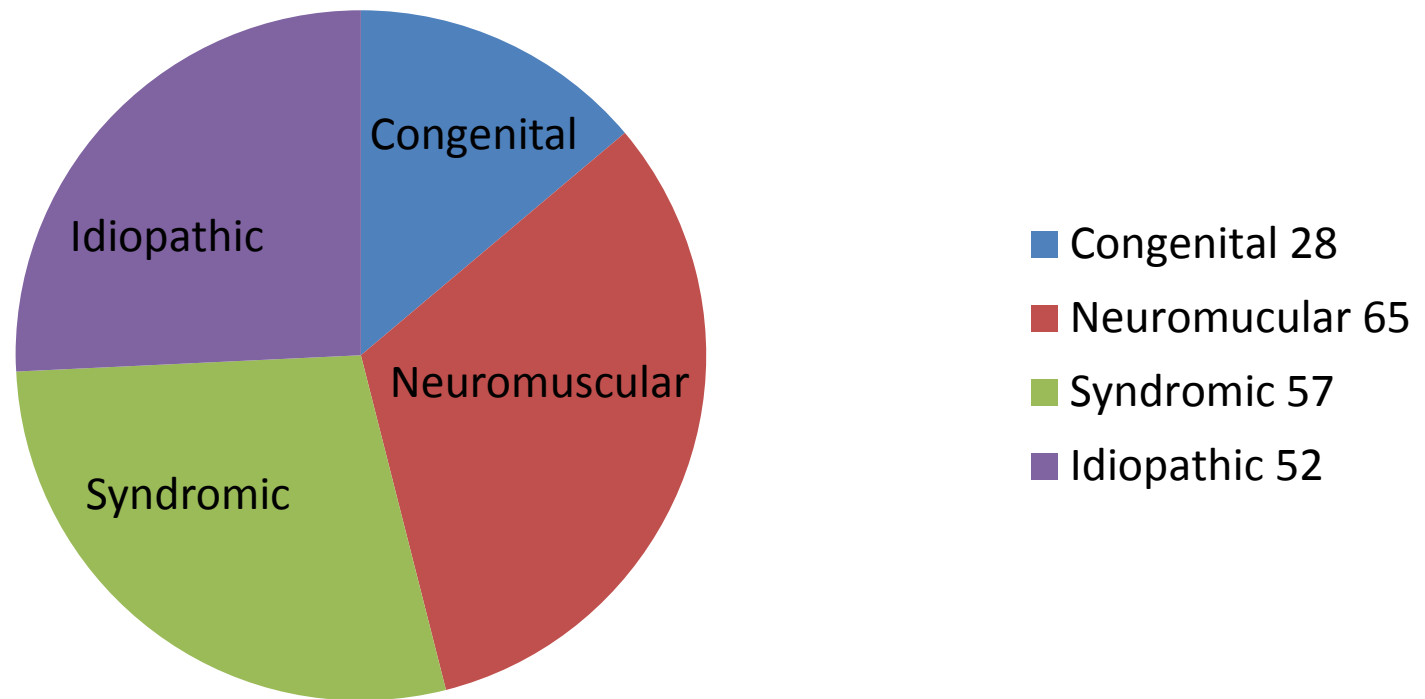
# Results (demographics)

- Age:  $6.7 \pm 3.5$  years
- Females: 125 Males: 77
- Follow up: 7.8 to 8.7 years
- BMI: 16.0 in Syndromic to 17.7 in Idiopathic
- Ambulatory Status:

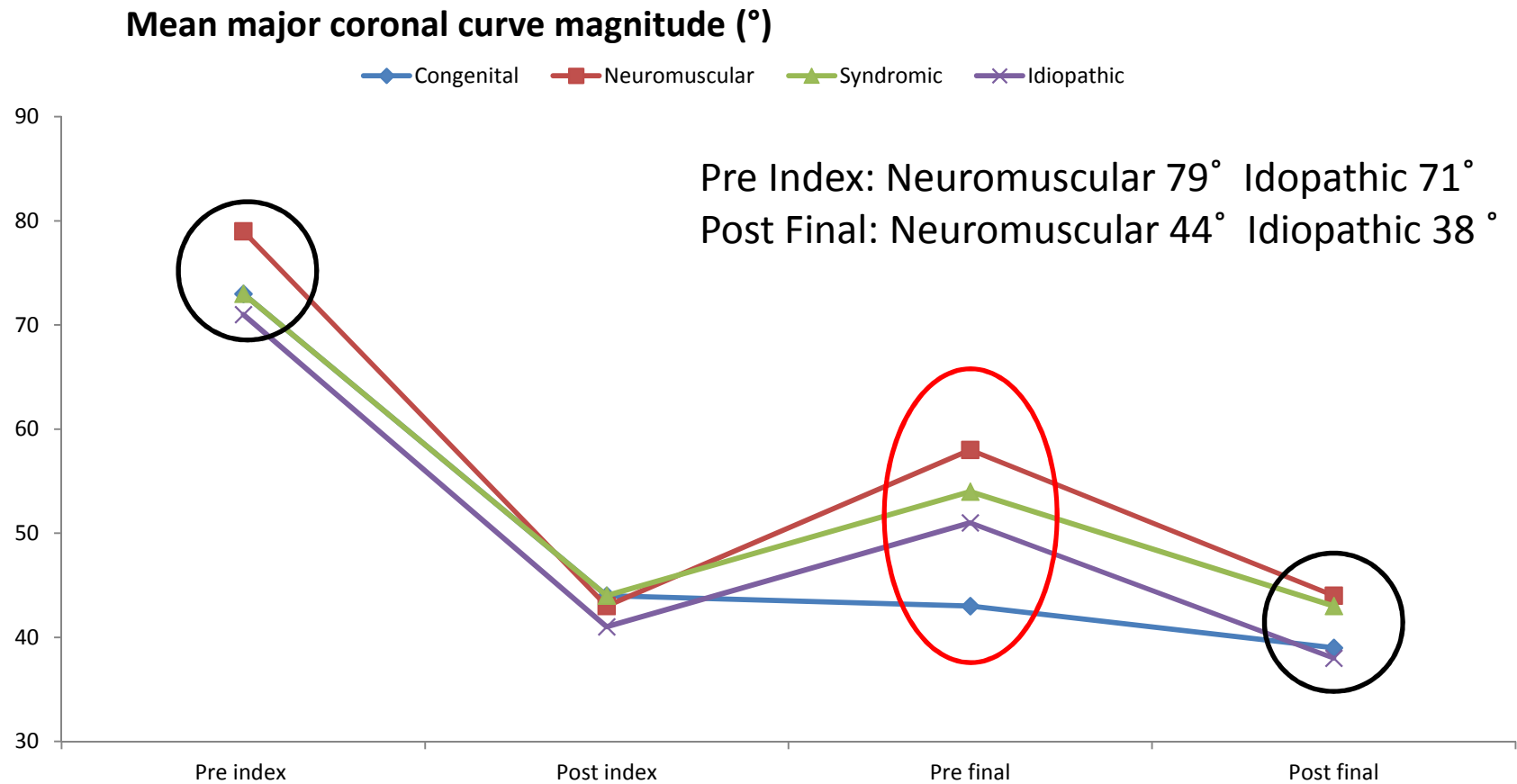
Congenital 95%, Neuromuscular 30%, Syndromic 83%, Idiopathic 100% ( $p < 0.001$ )

# Results

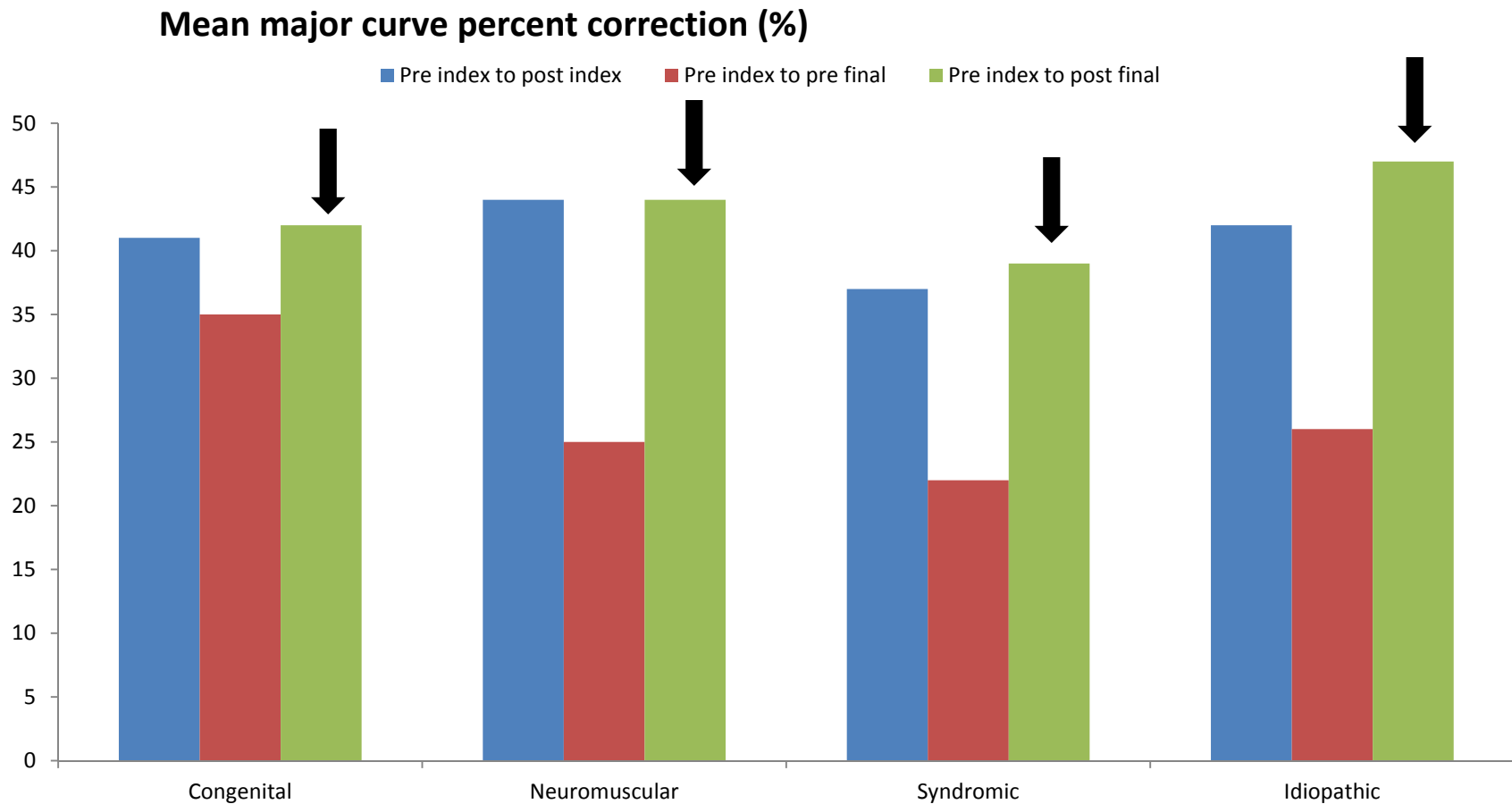
## Etiology



# Results (Major Curve Magnitude)

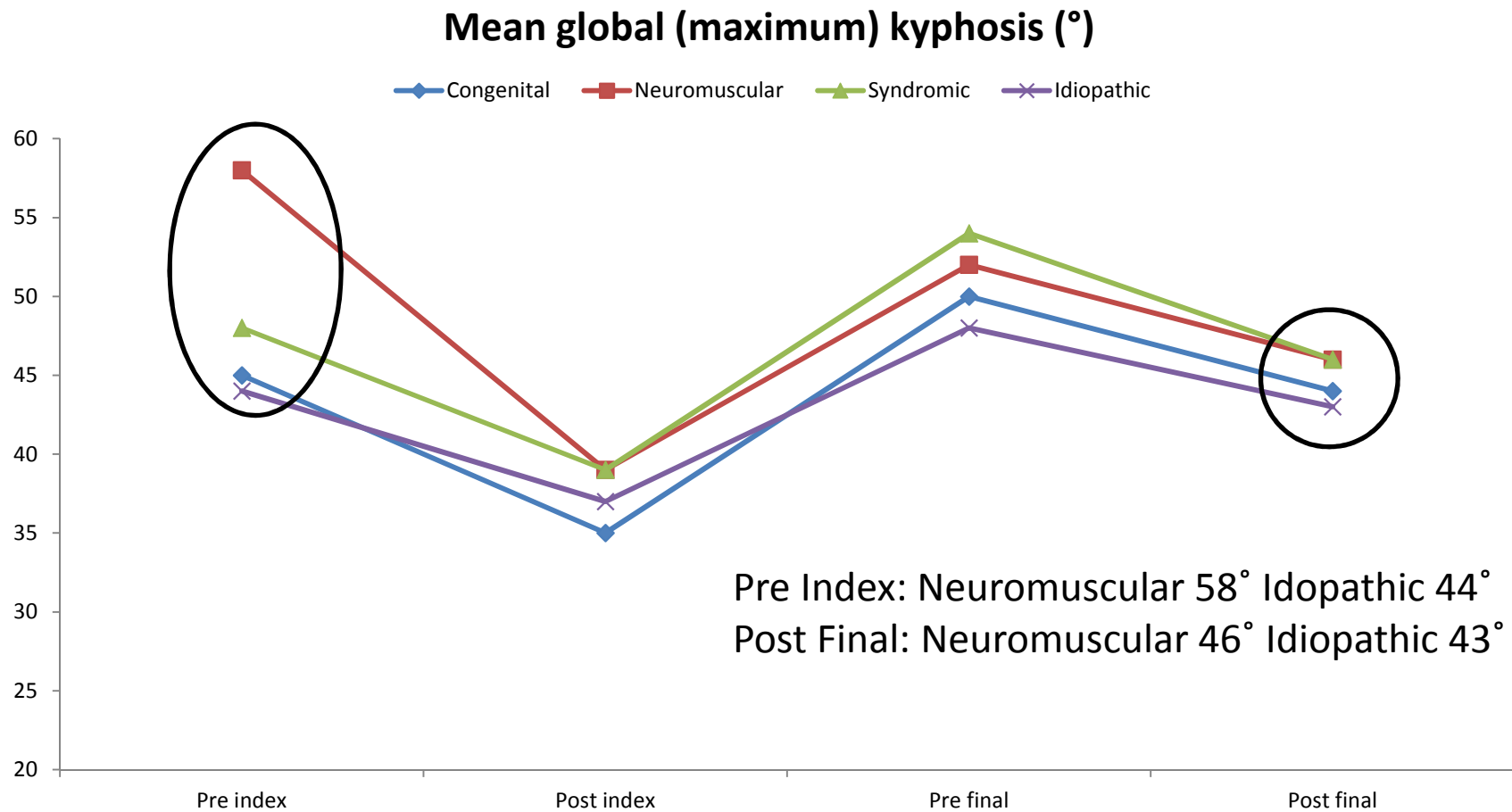


# Results (Major Curve % Correction)

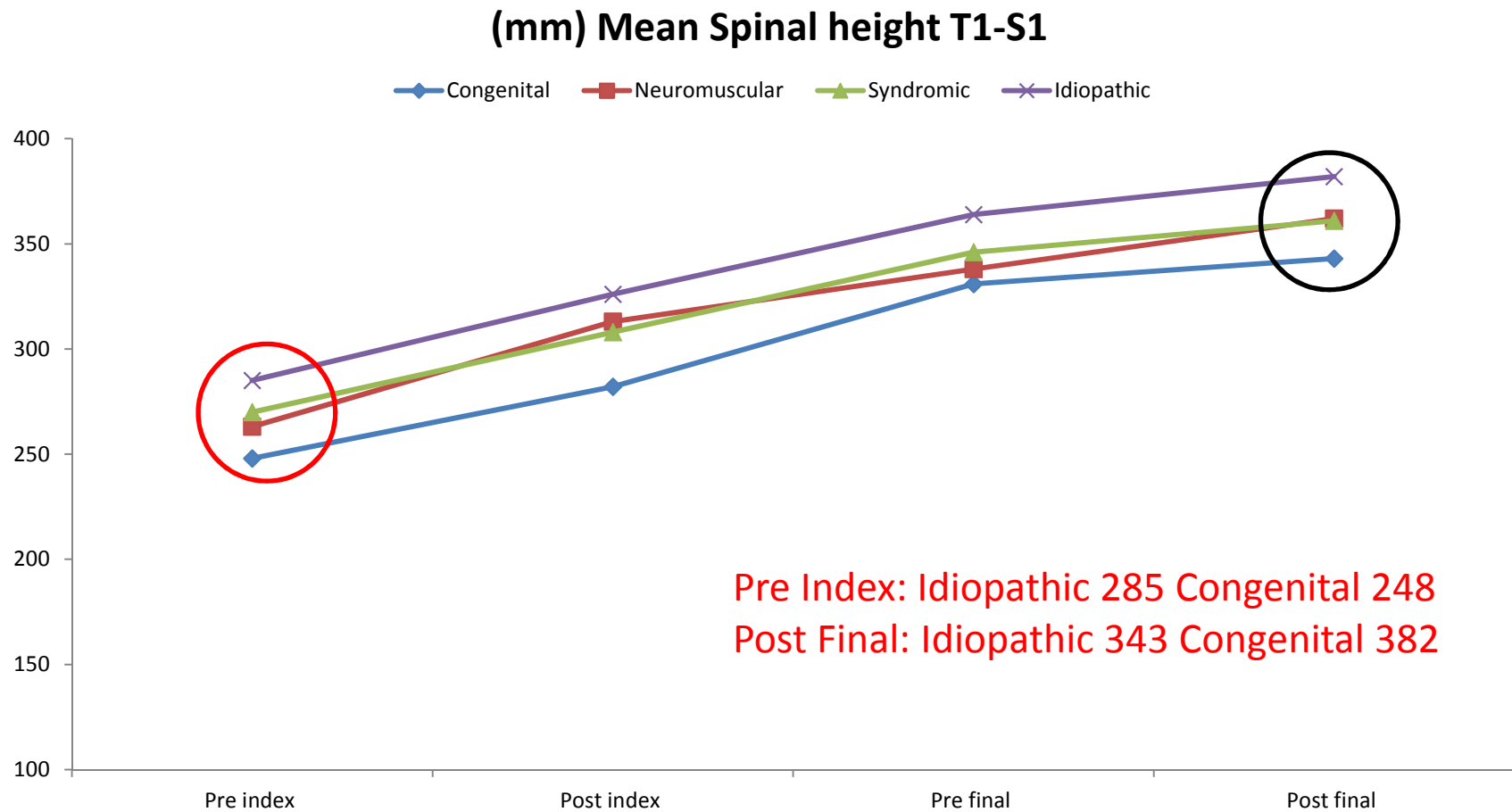




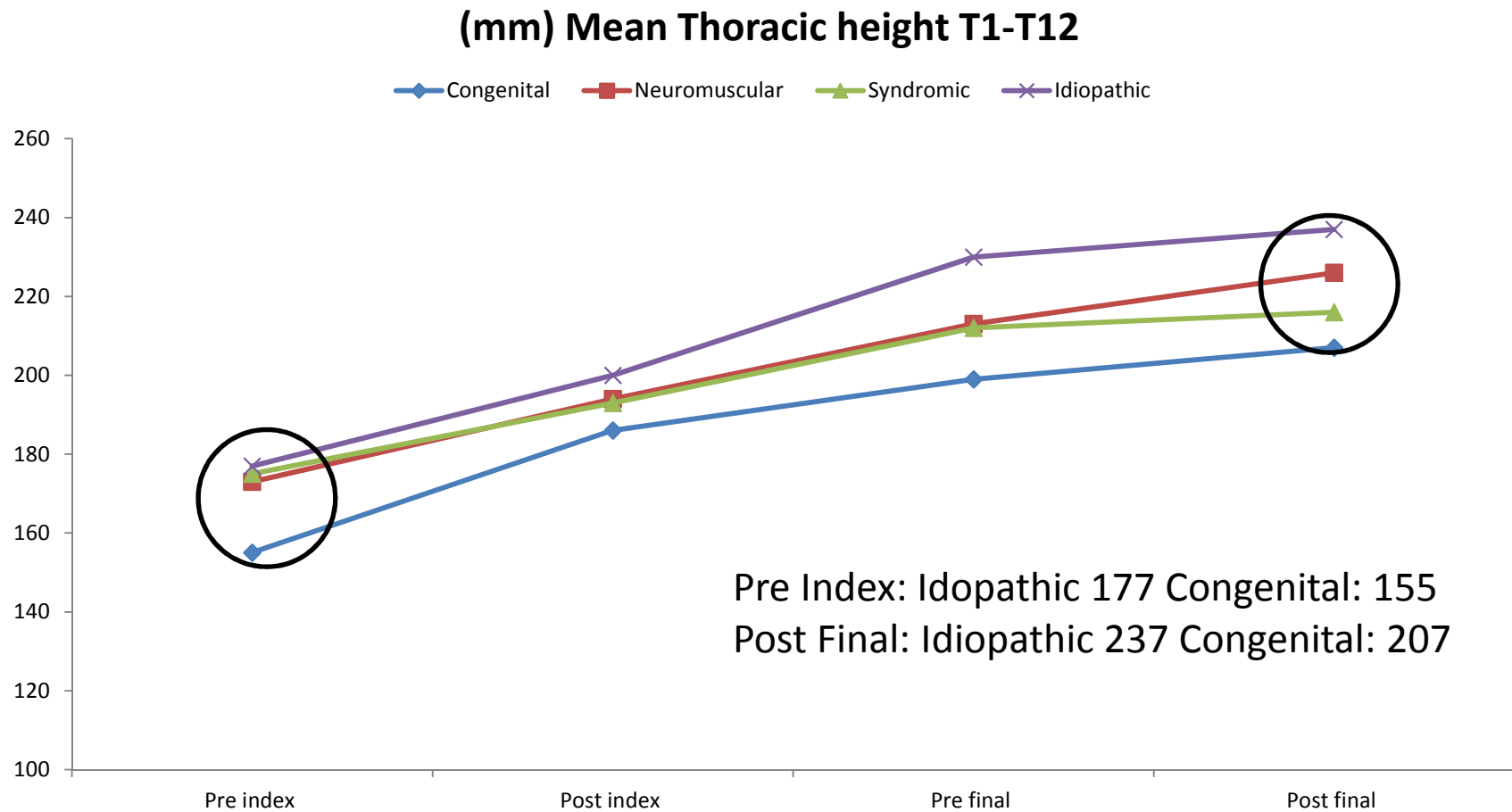
# Results (Global Kyphosis)



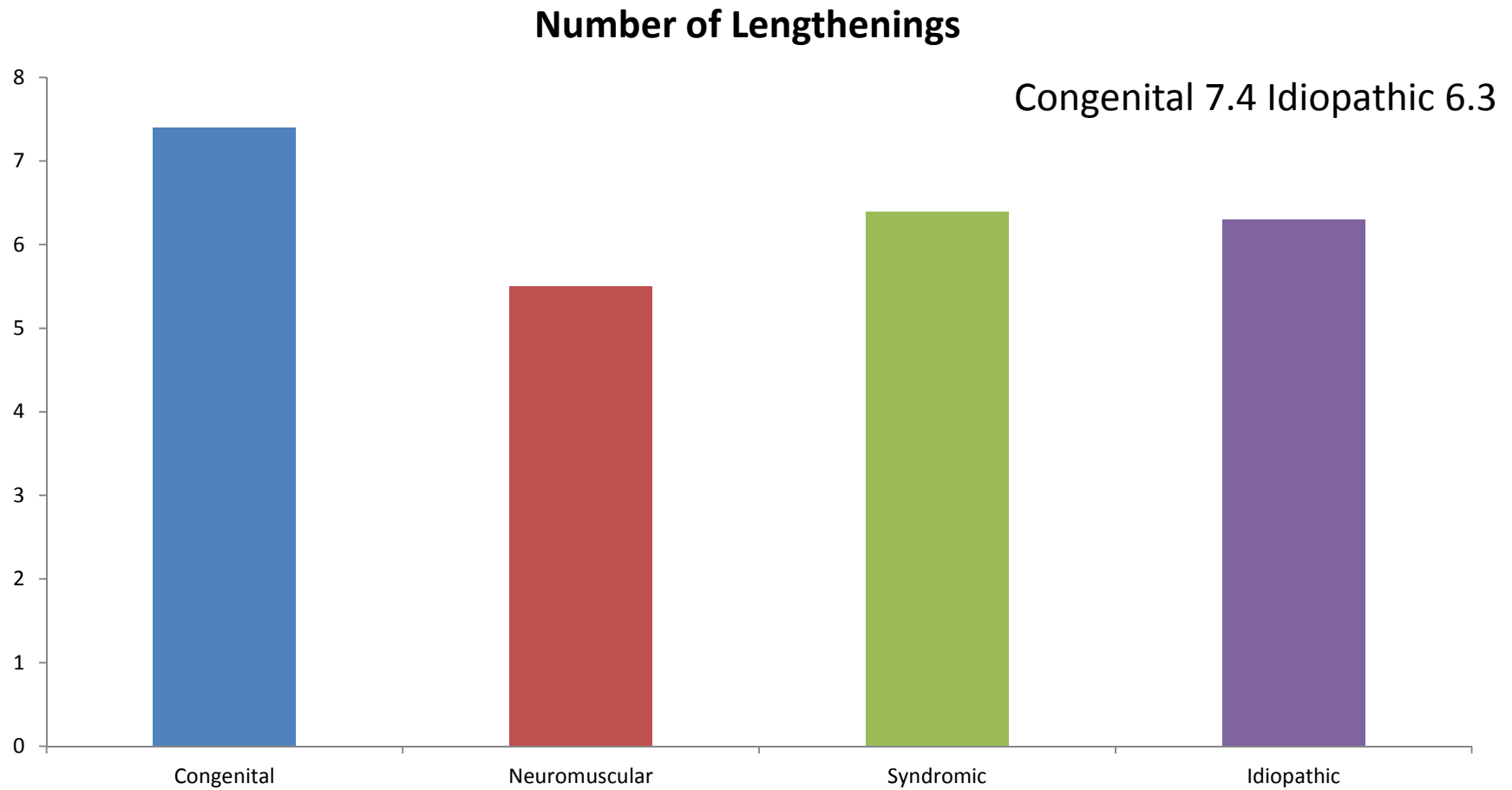
# Results (T1-S1 Spine Height mm)



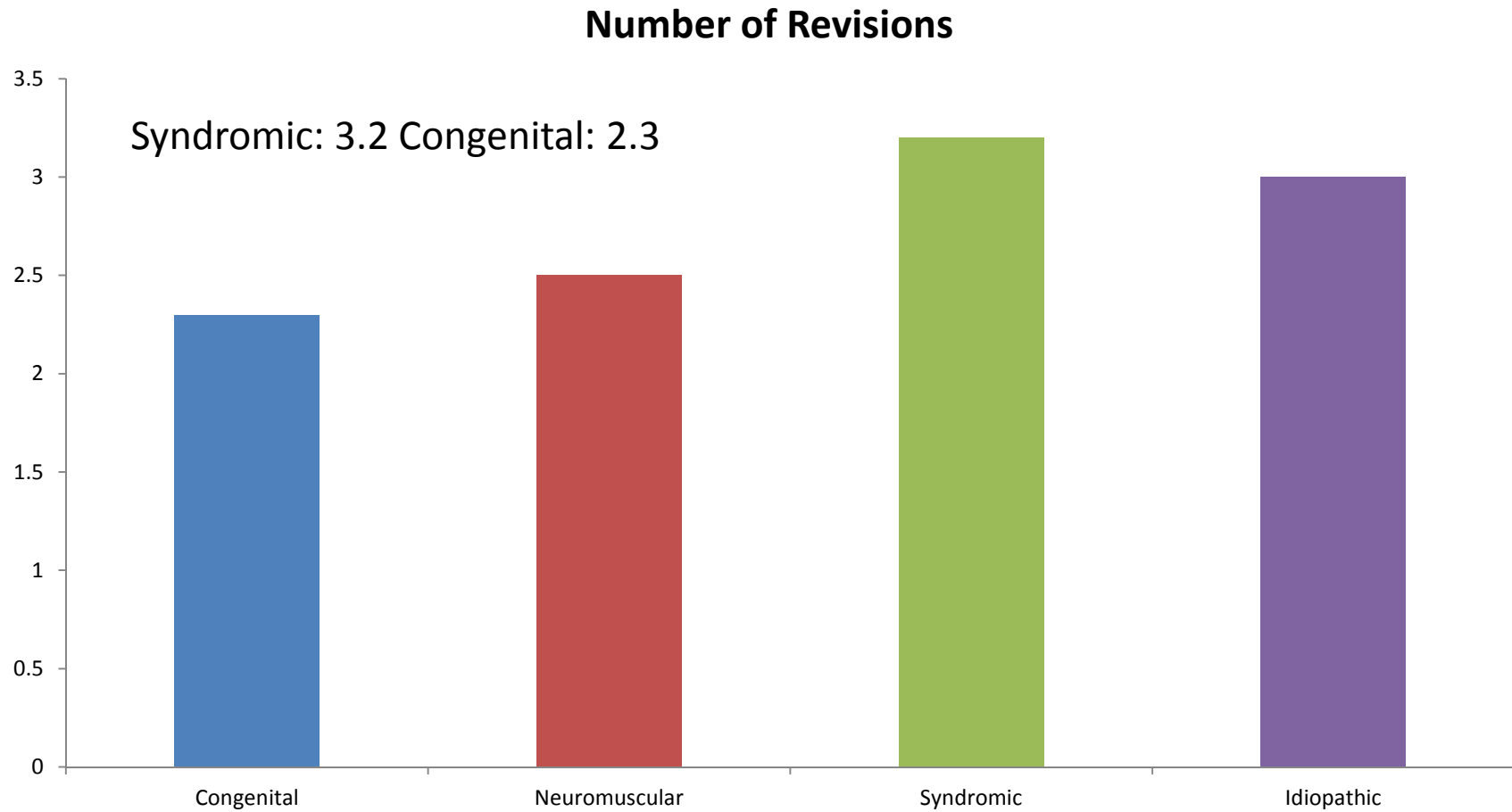
# Results (T1-T12 Spine Height mm)



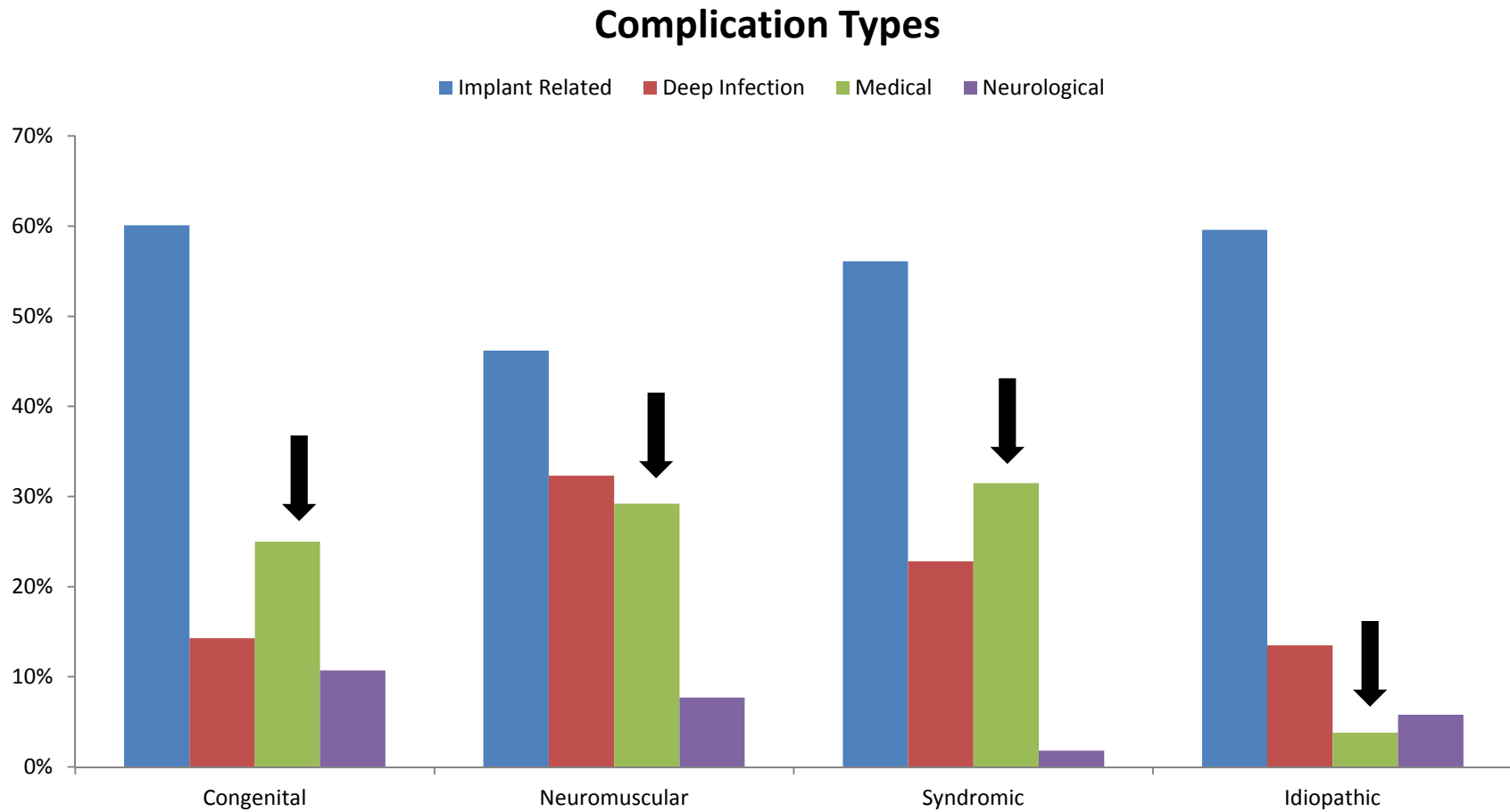
# Results (Lenghtenings)



# Results (Revision Surgeries)



# Result (Complication Types)



# Conlusion

- Major curve correction, maintenance of kyphosis, percentage truncal growth, incidence of deep infection, implant-related and neurological complications were all similar between the four C-EOS etiological groups.
- **Medical complications** were significantly lower among idiopathic EOS patients.

# Conclusion

- The results provide clear evidence that TGR treatment is effective for all EOS categories.



THANK YOU

