

# **The Effect of Early Fusion at 10yrs or Earlier for Early Onset Scoliosis: Comparison between 43 Early Fusion Patients and 39 Growing Rod Patients**

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# Introduction:1

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## Early fusion for early onset scoliosis



**Short Trunk**

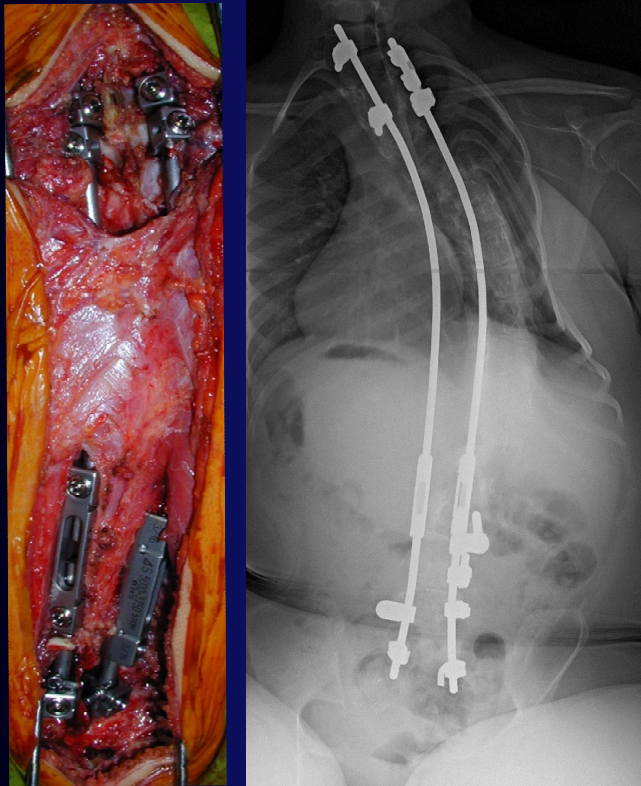
**Crankshaft phenomenon**



**Pulmonary Disturbances?**

# Introduction:2

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## Dual Growing Rod



Spinal growth  
Lung Space growth

Early fusion vs Dual growing Rod ?

# Purpose

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**To compare the surgical outcome of the early fusion to dual growing rod , especially with respect to spinal growth and lung function**

# Materials

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## Early Onset Scoliosis 82 cases

	Age at surgery	Ave. Follow Up
<b>Early fusion Group 43 cases</b> (Male 16, Female 27)	<b>8.1 yrs old</b> (3~10yr)	<b>7.5yrs</b> (2yrs~19yrs)
<b>Growing Rod Group 39 cases</b> (Male 17, Female 22)	<b>8.3 yrs old</b> (3~10yr)	<b>4.2yrs</b> (2yrs~10yrs)

# Pathology

	FG	GRG
Idiopathic	10	8
Congenital	0	6
NF	11	4
Marfan or Marfanoid	6	0
Syndromic	3	3
Arthrogryposis	2	0
CP	1	0
Myelomeningocele	1	1
Others	9	17
	43	39

# Measurement

Preinitial → Postinitial → Final f/u

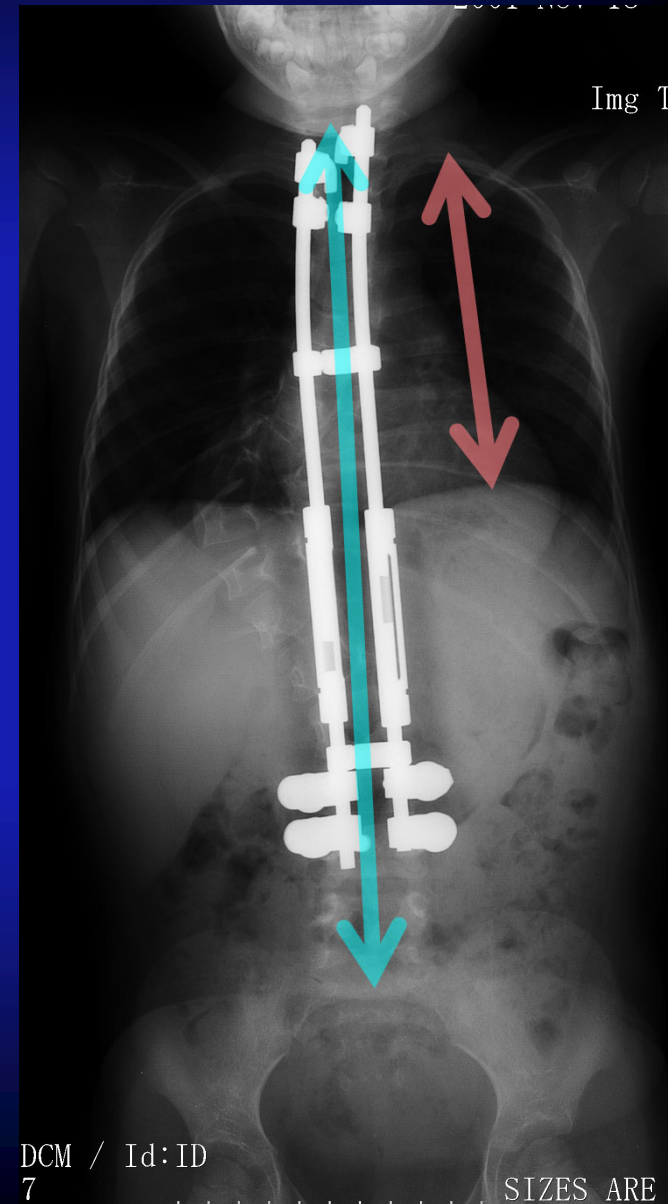
Major Curve

Kyphosis ( T5-12)

Trunk Balance

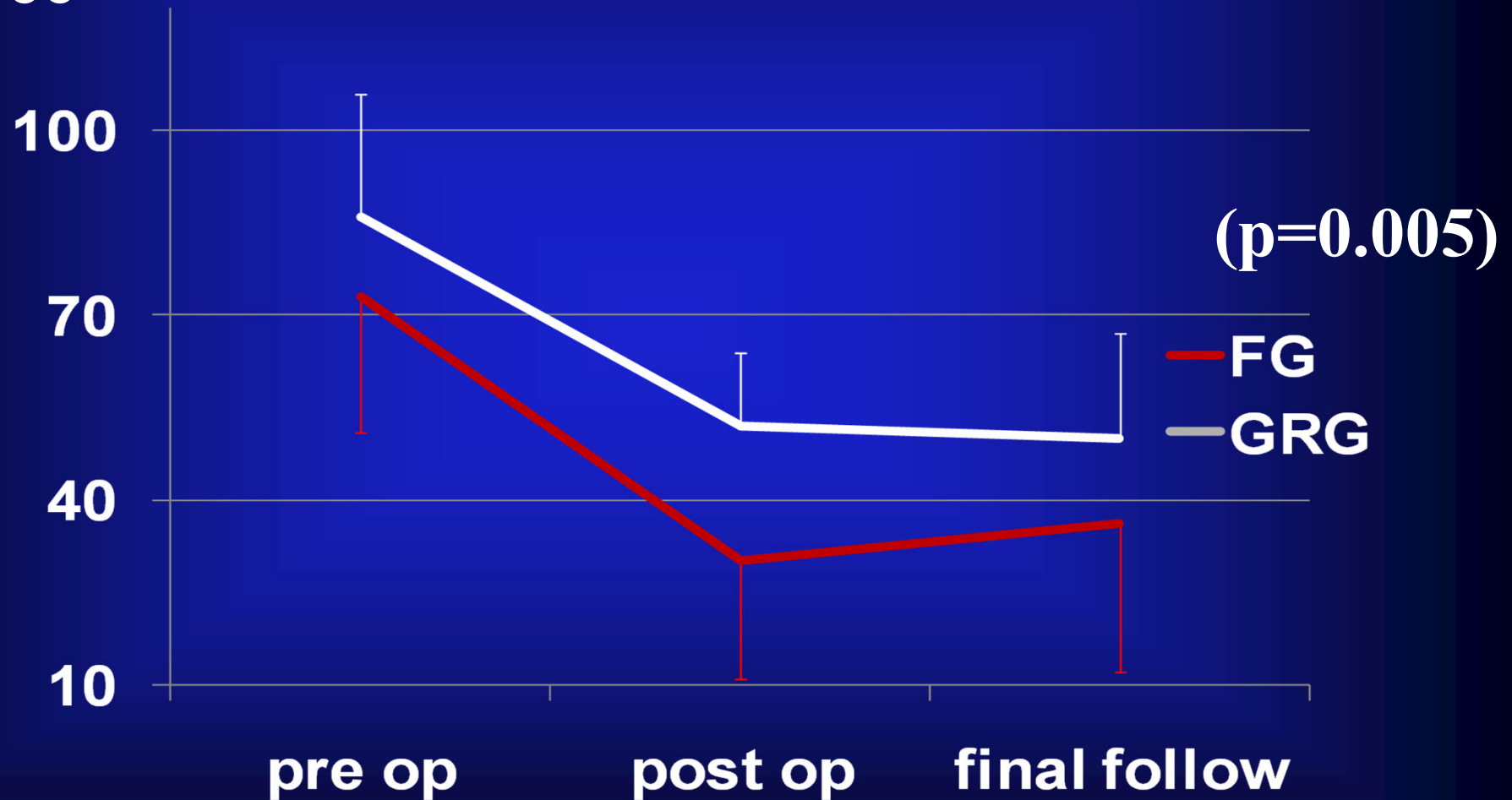
T1-S1 Length

Lung Space Concave



# Curve Correction(Scoliosis)

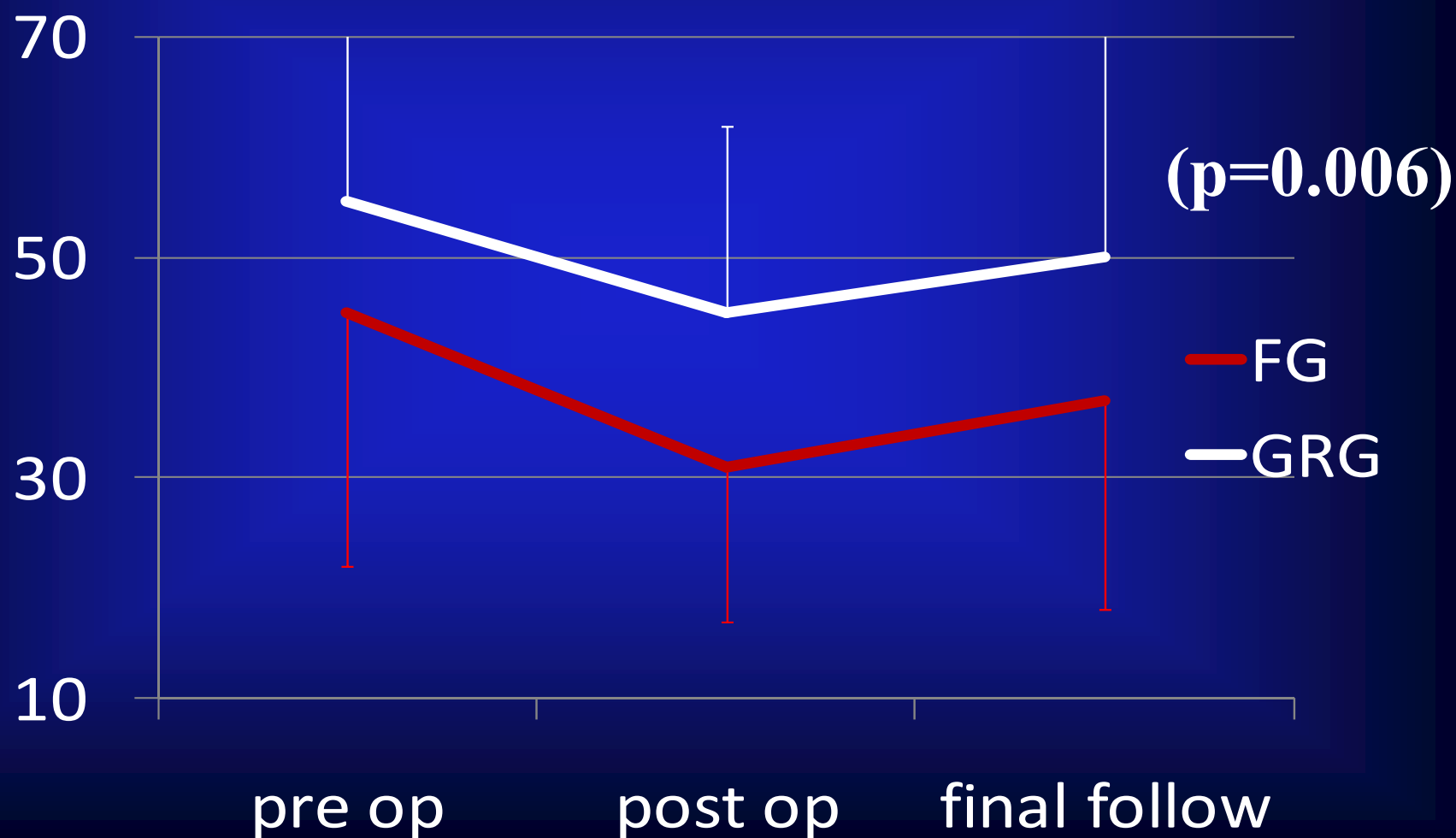
Degree





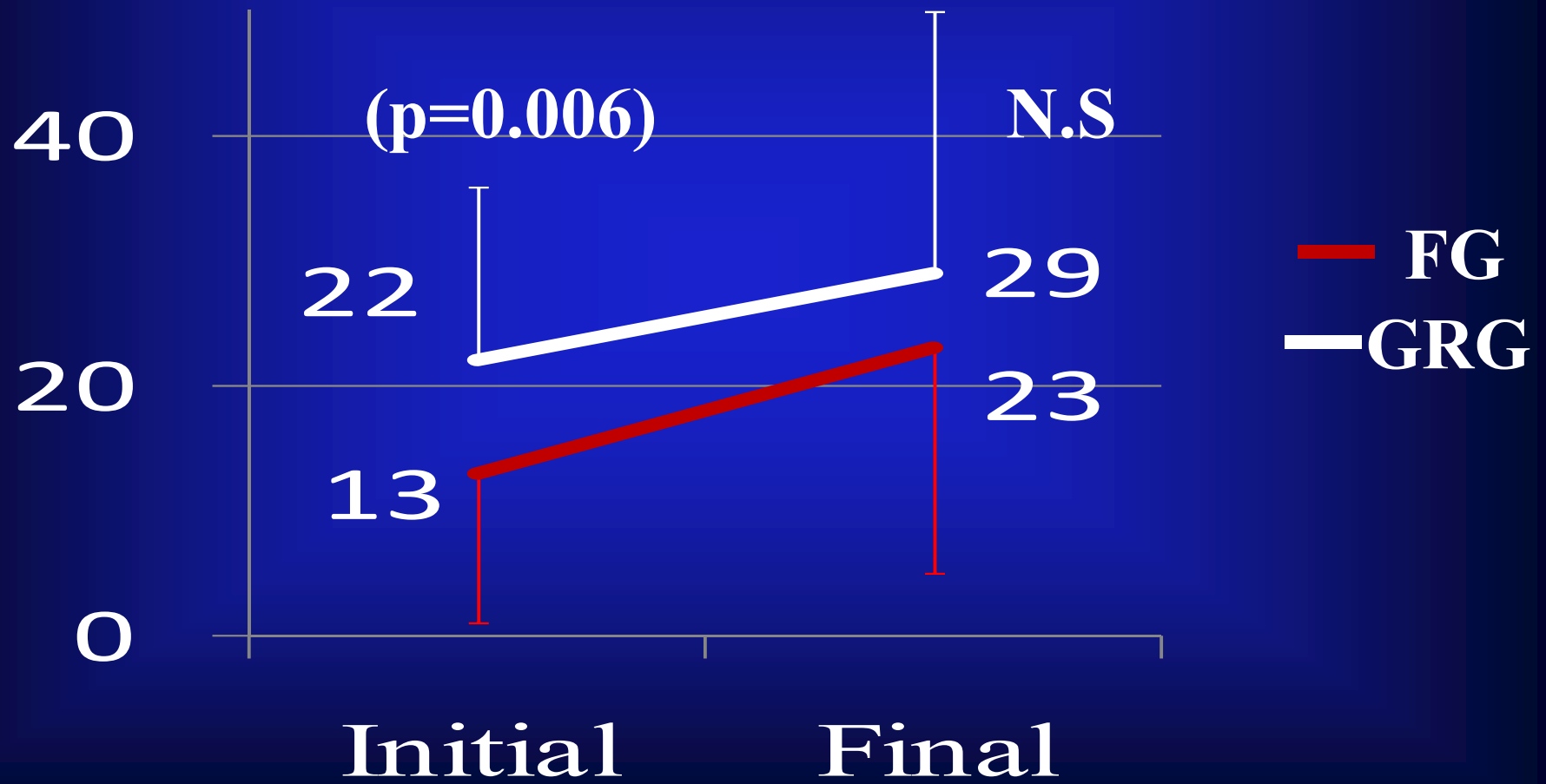
# Curve Correction(Kyphosis)

Degree

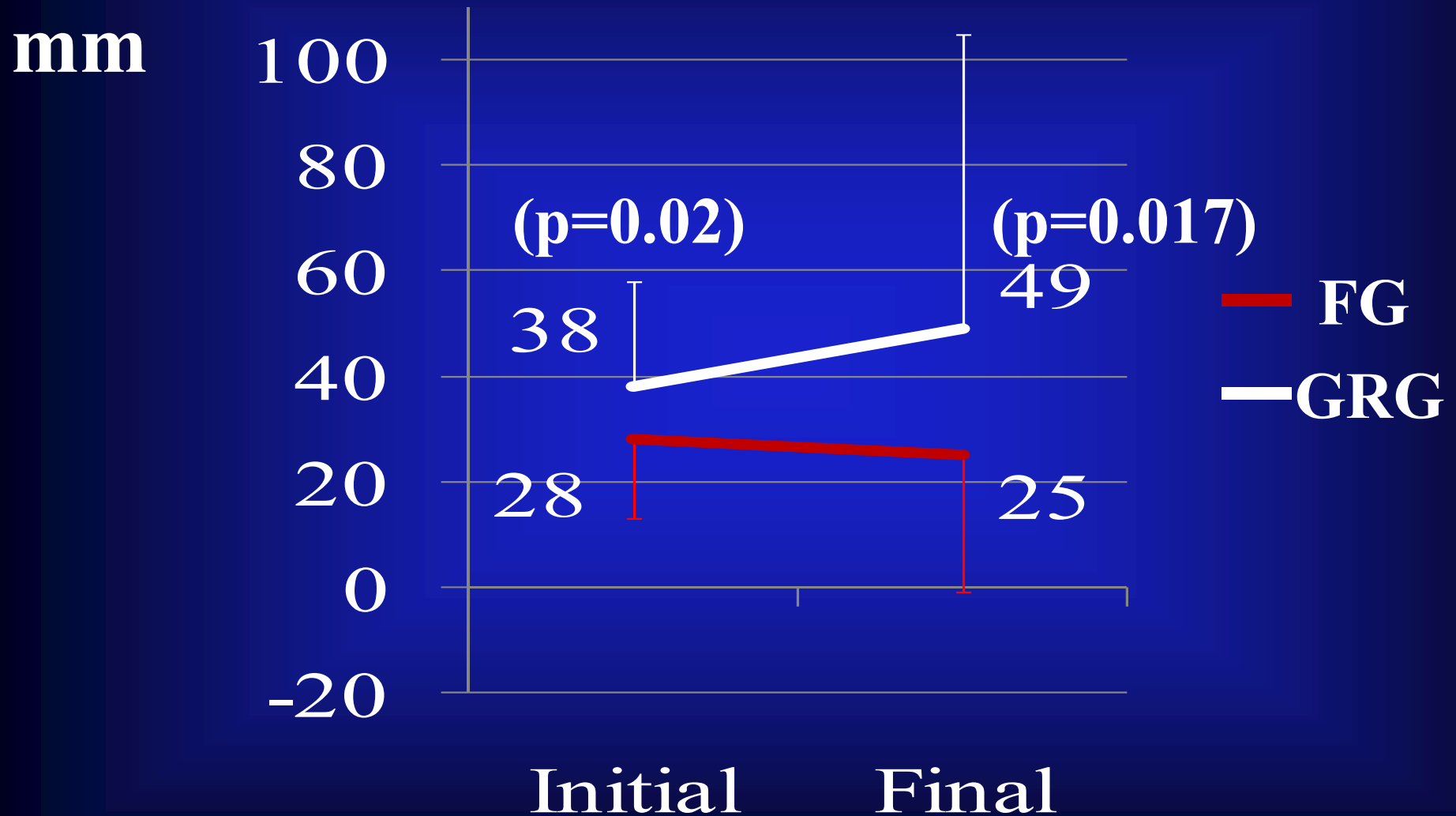


# Lung Space(Concave)

mm



# T1-S1 Length Gain



# Summary

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- **Surgical outcome of 43 early fusion cases(FG) and 39 dual growing rod cases(GRG) were compared.**
- **Better correction of the curve was obtained and maintained in FG.**
- **Spine elongation(T1-S1 gain after surgery) over the treatment and lung space gain between pre and post operative period was significantly less in FG with longer follow up.**
- **The clinical significancy of these results need to be examined.**