



**T33-How Much Of Pre-treatment Local
Kyphosis Can Be Accepted And What Level Of
Kyphosis Is An Indication For Spinal Fixation
And Reconstruction?**

*Yogesh Kishorkant Pithwa, FNB Spine Surgery
Sattvik Spine And Scoliosis Center, Bengaluru, India*





3rd Meeting of the International Consensus Meeting
8-10 of May, 2025 Istanbul



**Yogesh
Kishorkant
Pithwa**



**Benny
Benny**



Phedy Phe



**Aries
Rakhmat
Hidayath**



Feifei Zhou



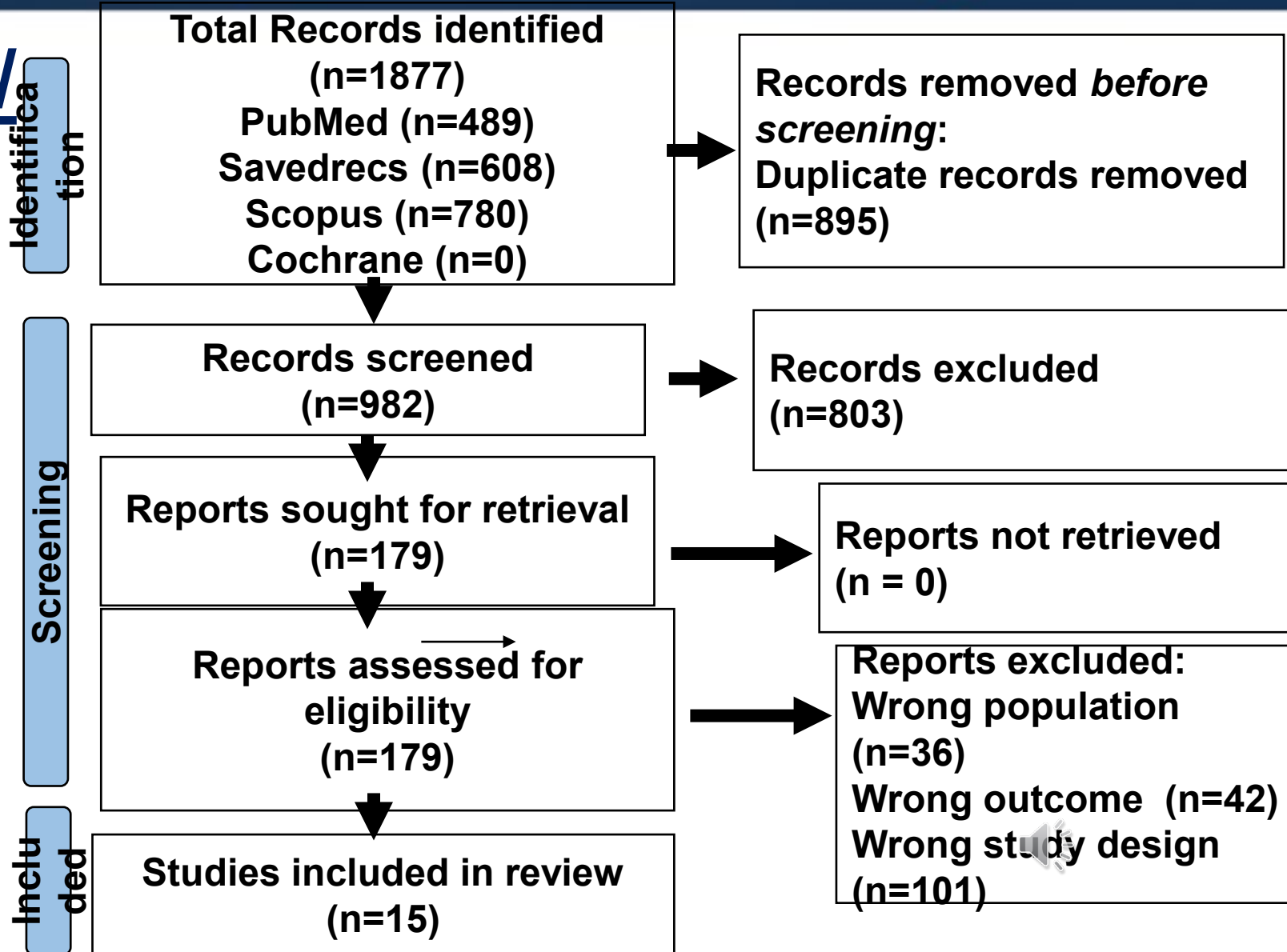
Why Is This Topic Important

- **Kyphosis, if severe, can cause pain and/ or neurological deterioration**
- **However, no UNEQUIVOCAL OBJECTIVE GUIDELINES on critical cut-off values**





Literature Review/ Process



PubMed

Clarivate
Web of Science™

Cochrane
Library



Scopus



Pulmonary Complications

Kyphosis Secondary to Tuberculosis Osteomyelitis as a Cause of Ventilatory Failure*

Clinical Features, Mechanisms, and Management

*Ian E. Smith, MA; Clare M. Laroche; Sarah A. Jamieson; and
John M. Shneerson, MD*

- 7 patients
- Minimum kyphosis 95°





Neurological Complications

Hindawi
BioMed Research International
Volume 2022, Article ID 8555924, 9 pages
<https://doi.org/10.1155/2022/8555924>

Research Article

Predictive Factors for Late-Onset Neurological Deficits in Patients with Posttuberculous Thoracic Kyphosis

Jianquan Zhao, Zhuyun Cai, Yicheng Meng, Xuhui Zhou , and Heng Jiang 

• Kyphosis $>80^{\circ}$



■ SPINE

Tuberculosis of the spine with severe angular kyphosis

MEAN 34-YEAR POST-OPERATIVE FOLLOW-UP SHOWS THAT PREVENTION IS BETTER THAN SALVAGE

• Kyphosis $>65^{\circ}$





CLINICAL ORTHOPAEDICS AND RELATED RESEARCH
Number 398, pp. 85–92
© 2002 Lippincott Williams & Wilkins, Inc.

Paediatric Population

The Problem of Deformity in Spinal Tuberculosis

S. Rajasekaran, PhD

- **Spine-at-risk signs in paediatric spinal tuberculosis**
- **Formula to predict post-treatment kyphosis based on
EXTENT OF VERTEBRAL BODY LOSS**





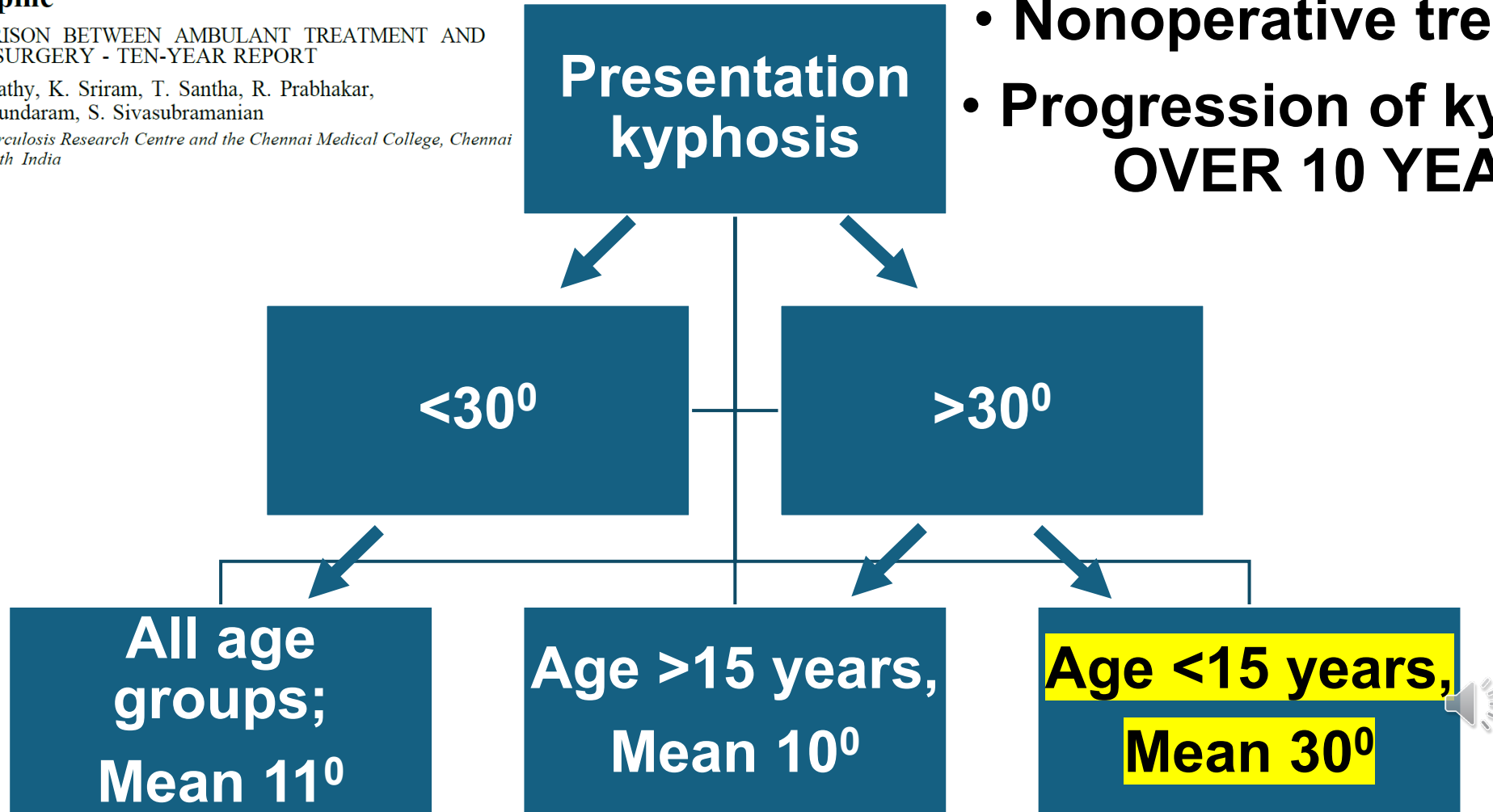
Short-course chemotherapy for tuberculosis of the spine

A COMPARISON BETWEEN AMBULANT TREATMENT AND
RADICAL SURGERY - TEN-YEAR REPORT

R. Parthasarathy, K. Sriram, T. Santha, R. Prabhakar,
P. R. Somasundaram, S. Sivasubramanian

*From the Tuberculosis Research Centre and the Chennai Medical College, Chennai
(Madras), South India*

- Nonoperative treatment
- Progression of kyphosis
OVER 10 YEARS





Adult Population

The Spine Journal 5 (2005) 79–84

THE
SPINE
JOURNAL

Results of nonsurgical treatment of thoracic spinal tuberculosis in adults

Abhay Nene, MS (Orth), Shekhar Bhojraj, MS (Orth), FCPS (Orth), D Ortho*

Acta Orthop. Belg., 2014, **80**, 451–456

ORIGINAL STUDY



Fate of kyphosis in tuberculosis of subaxial cervical spine treated non-operatively

Zhang et al. *Journal of Orthopaedic Surgery and Research* (2016) 11:49
DOI 10.1186/s13018-016-0385-y

Journal of Orthopaedic
Surgery and Research

RESEARCH ARTICLE

Open Access

The outcomes of chemotherapy only treatment on mild spinal tuberculosis

Zehua Zhang, Fei Luo, Qiang Zhou, Fei Dai, Dong Sun* and Jianzhong Xu*



[n=11] lesions

& deterioration

J Neurosurg Spine 6:222–228, 2007

Medical management of Pott disease in the thoracic and lumbar spine: a prospective clinical study

KADIR KOTIL, M.D.,¹ M. SERVET ALAN, M.D., M.Sc.,² AND TURGAY BILGE, M.D.¹

Departments of ¹Neurosurgery and ²Infectious Diseases and Clinical Microbiology, Haseki Education and Research Hospital, Istanbul, Turkey



Question:

How much of pre-treatment local kyphosis can be accepted and what level of kyphosis is an indication for spinal fixation and reconstruction?





❖ **Response:**

Indication for spinal fixation in

1. **PAEDIATRIC** population, kyphosis $>30^{\circ}$
2. **ADULT** population, kyphosis $>40^{\circ}$





Vote:

Agree – 77.8%, Disagree – 0%, Abstain – 22.2%
(Strong Consensus)

