

# EARLY OUTCOMES OF TOTAL REPAIR IN TETRALOGY OF FALLOT WITH DIFFERENT PULMONARY ANNULUS Z SCORES



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**Introduction:** The total repair of tetralogy of Fallot (TOF) leaves variable degrees of residual pulmonary stenosis (PS) and pulmonary regurgitation (PR). The surgical strategy for repair of TOF has focused on sparing the pulmonary annulus. The purpose of this study was to find out the relationship between early outcomes of total repair and different pulmonary annulus Z scores.

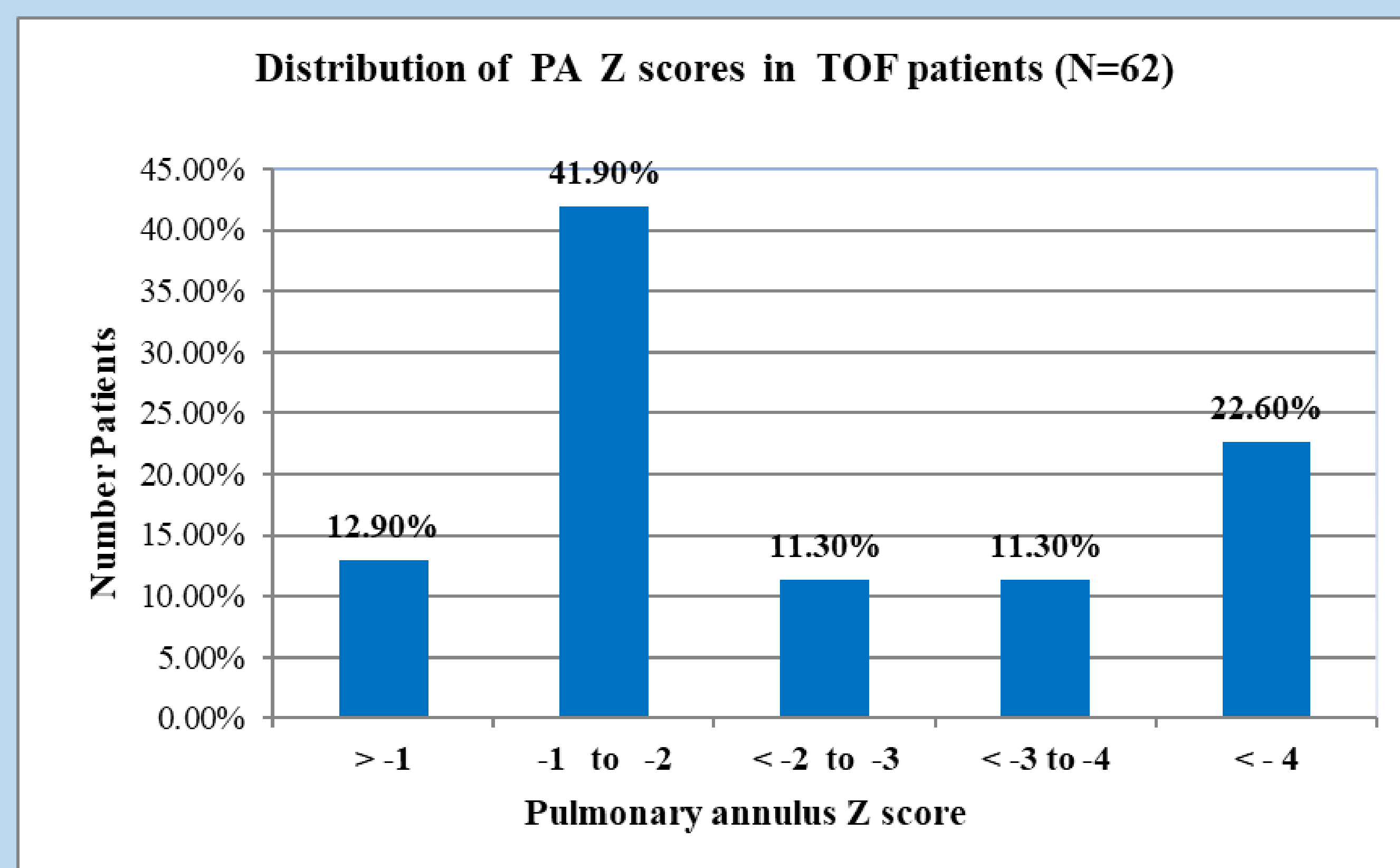
**Aim:** Study the early outcomes of total repair in TOF with different pulmonary annulus Z scores.

**Methods:** This was a hospital based clinical analytical study on 62 TOF patients who underwent total correction in Department of Cardiovascular Surgery, YKCH. Intra-operative measurements of pulmonary annulus Z score, RV pressure and LV pressure were done in every patient. Total correction with pulmonary valve sparing was done in patients with pulmonary annulus Z score  $\geq -4$ , and if the size of PV annulus was less than Z score  $< -4$ , the TAP insertion procedure was done directly. The ICU outcomes and post-operative echocardiographic outcomes such as PS, PR and TR were recorded at discharge, 1 month and 3 months follow up.

**Results:** Among the study population (n=62), the mean age was  $4.94 \pm 2.82$  years and the mean pulmonary annulus Z score was  $-2.36 \pm 1.3$ .

## Types of operative procedure in total repair of TOF (N=62)

Types of procedure	Number	Percentage
Pulmonary Annulus sparing procedure	30	48.3
Conversion to Transannular patch (TAP) from Pulmonary Annulus sparing procedure	18	29.1
Transannular patch (TAP) procedure	14	22.6
Total	62	100



## The relationship between pulmonary annulus Z score groups and mild echocardiographic outcomes at 3 months follow up (N=39)

3 months follow up PA Z scores Group	Mild Pulmonary Stenosis (PS)		Mild Pulmonary regurgitation (PR)		Mild Tricuspid regurgitation (TR)	
	No	%	No	%	No	%
0 to -2 (N=34)	10	29.4	7	20.6	5	14.7
< -2 to -4 (N=12)	1	8.3	5	41.7	4	33.3
< -4 (N=13)	0	0.0	5	38.5	2	15.4
Total	11	18.6	17	28.8	11	18.6
Fisher's Exact test	5.960		2.842		2.118	
p value	<b>0.033</b>		0.298		0.340	

- The intraoperative pressure outcomes and the ICU outcomes were not statistically significant in different pulmonary annulus Z scores group (p value  $>0.05$ ).
- All patients with PV annulus Z score  $>-1$  had valve sparing procedure whilst 84.6% of patient with Z score -1 to -2 had valve sparing and the rest had conversion to TAP procedure. All patients with Z score -2 to -4 had TAP procedure. There was statistically significant relationship between types of operative procedure and different pulmonary annulus Z scores group (p value  $<0.001$ ).
- The relationship between early postoperative outcome and pulmonary annulus Z scores group was statically significant (p value = **0.033**).
- Significant association was found between the types of operative procedure and postoperative echocardiographic outcomes (p value = **0.012** and **0.029**). The total in-hospital mortality in the study was 4.8% (n=3).

**Conclusion:** The types of operative procedure and early postoperative echocardiographic outcomes are associated with the different pulmonary annulus Z scores. The early outcomes of Total Repair are acceptable. Therefore, pulmonary annulus sparing procedure should be encouraged in Total Repair of Tetralogy of Fallot.

## Further Information

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