

# ***THE LONG TERM OUTCOME OF PATIENTS WITH INTERVENTIONAL TREATMENT OF PULMONARY VALVULAR ATRESIA/STENOSIS***

**I. Spadoni, A. Lunardini, I. Kristo, L. Ait-Ali, V. De Lucia, S. Giusti**



**Pediatric Cardiology and GUCH Unit**

**Heart Hospital, "G. Monasterio" Tuscan Foundation Massa, Italy**

# BACKGROUND

- ✓ Transcatheter approach has become the first option for treatment of neonates with critical pulmonary valvular stenosis (PVS) and pulmonary atresia with intact ventricular septum (PAIVS), owing to its excellent immediate and intermediate-term results
- ✓ Long-term follow-up results are less well documented. However, available data are encouraging and compare favourably with surgery

# AIM

To evaluate the long-term outcome of neonates with pulmonary atresia and intact ventricular septum (PAIVS)/critical pulmonary valvular stenosis (PVS) undergone successful transcatheter treatment

# METHOD

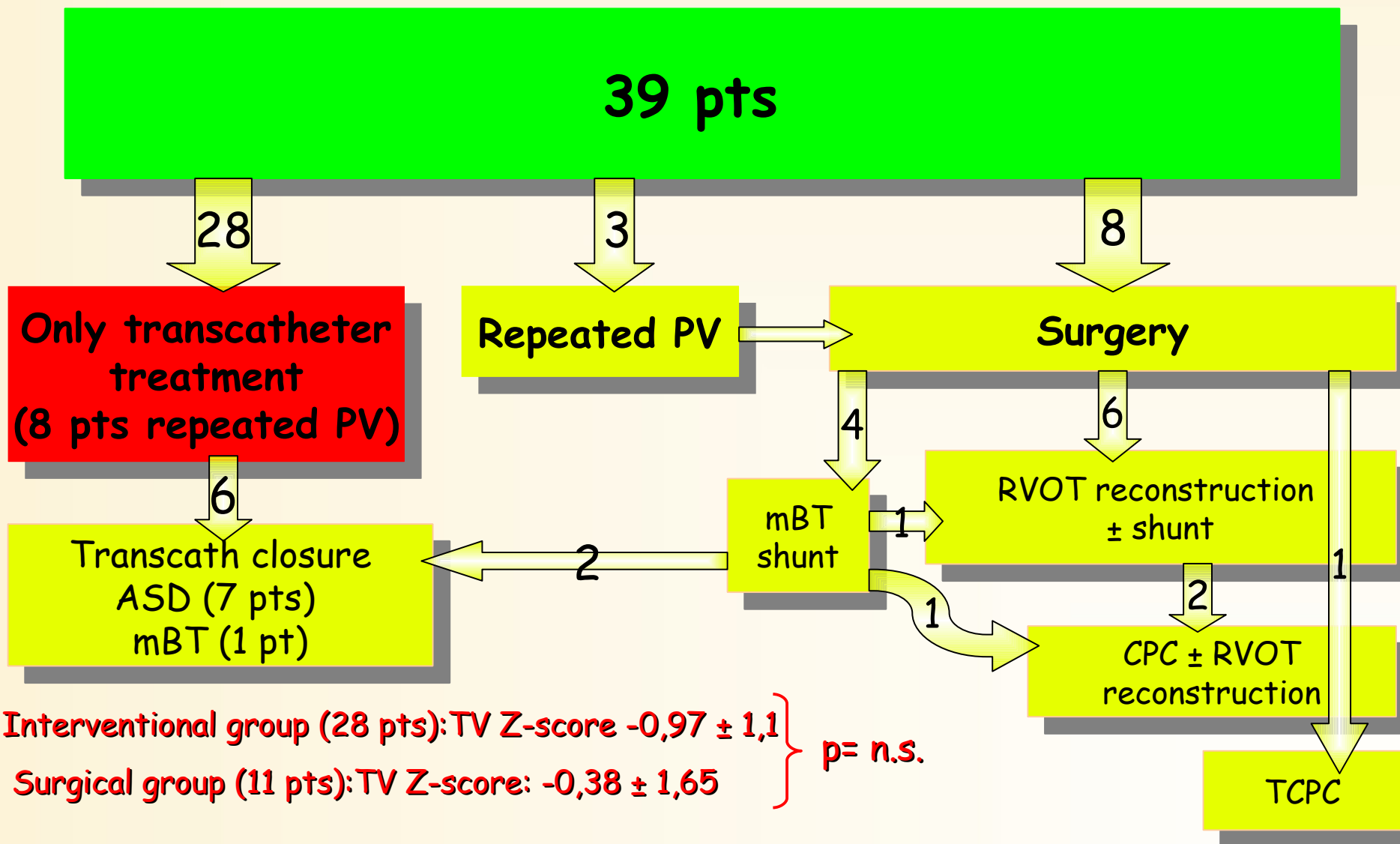
- ✓ Patients (pts) with successful transcatheter treatment of critical pulmonary valvular stenosis/atresia performed in neonatal age
- ✓ Minimum follow-up period after the procedure of 2 years
- ✓ Surgical and interventional procedures performed after the first treatment were noted
- ✓ Clinical and echocardiographic data at follow-up were retrospectively analysed.

# Study population

✓ Patients	39
• Critical PVS	27
• PAIVS	12
✓ Age*	3 (1 -19) days
✓ Weight*	2,9 ± 0,5 (1,9 - 4) Kg
✓ FU	9 ± 4 (2 - 16) yrs

\* Age and weight at percutaneous treatment

# Results



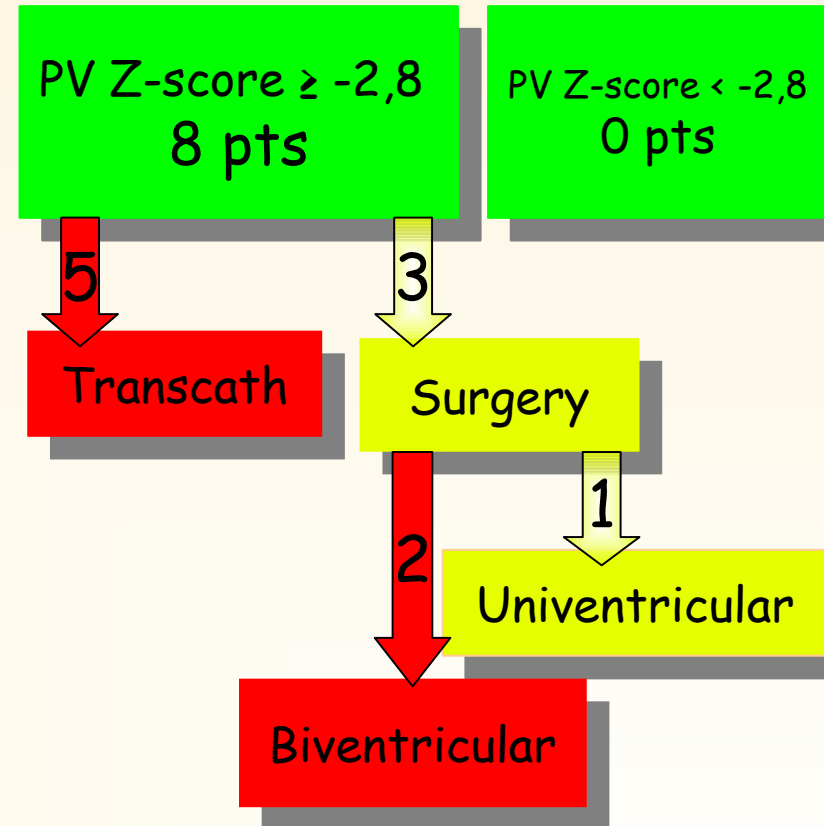
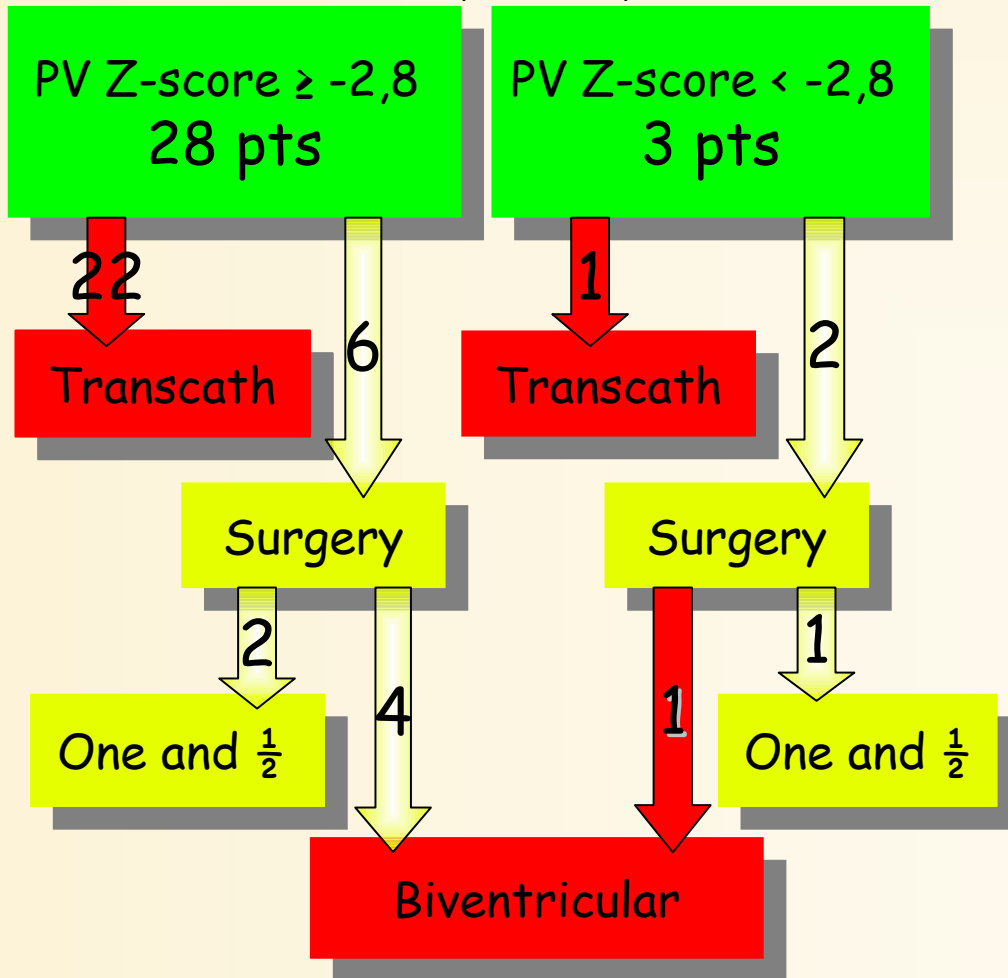
# Results

**TV Z-score  $\geq -2$  (31 pts)**

Mean  $-0,38 \pm 1,12$

**TV Z-score  $< -2$  (8 pts)**

Mean  $-2,26 \pm 0,18$



# Results

- ✓ Twenty-eight pts (72%) were treated only with interventional procedures (interventional group)
- ✓ No significant difference of TV Z-score between the interventional group and the pts who required surgery
- ✓ Six pts of the interventional group, with unfavourable TV/PV Z-score, achieved biventricular circulation



# Follow-up results Interventional group\*

*Follow-up duration/age  $9 \pm 4$  (2 - 16) yrs*

✓ No mortality and major complications

✓ SpO<sub>2</sub>:  $\geq 95\%$  in all pts

\* 28 pts treated only with interventional procedures

# Follow-up results

## Interventional group\*



*Follow-up duration/age  $9 \pm 4$  (2 - 16) yrs*

- ✓ Doppler peak syst grad  $17 \pm 9$  (5 - 35) mmHg
- ✓ Pulmonary insufficiency
  - Grade 3/4            2 pts
  - Grade 2/4            11 pts
- ✓ Tricuspid insufficiency
  - Grade 0-2/4 in all pts

\* 28 pts treated only with interventional procedures

# CONCLUSIONS

- ✓ In our experience, transcatheter treatment is the technique of choice for right ventricular decompression in neonates with critical pulmonary valvular obstruction
- ✓ Percutaneous procedures can be the only approach in the majority of patients
- ✓ The long term outcome is often unpredictable and depends on the anatomic and functional adequacy of the RV, as well as on the effectiveness of the intervention