

JSPCCS-TSPC Joint Session

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[TSPCJS] JSPCCS-TSPC Joint Session (II-TSPCJS)

Advances in surgical and catheter interventions for Tetralogy of Fallot (TOF) across the lifespan in Taiwan and Japan

Chair: Masaki Nii (Shizuoka Children's Hospital)

[II-TSPCJS-2] Management of Tetralogy of Fallot from Birth to Adulthood — An Integrated Approach in Taiwan

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Keywords : Tetralogy of Fallot, Integrated approach, Lifelong

Tetralogy of Fallot (TOF) is one of the most common cyanotic congenital heart diseases in Taiwan. Over the past three decades, major advances in prenatal diagnosis, neonatal screening, transcatheter intervention, and adult congenital heart disease care have significantly changed its management and outcomes.

This presentation summarizes the integrated TOF management workflow at National Taiwan University Children's Hospital from fetal life to adulthood. Improved fetal echocardiography and nationwide pulse oximetry screening programs now allow earlier diagnosis, planned delivery, and reduced life-threatening neonatal presentations. For symptomatic neonates with severe right ventricular outflow tract obstruction, transcatheter staged palliation, including right ventricular outflow tract stenting, has emerged as an alternative to surgical shunts.

As long-term survival after TOF repair now exceeds 95%, attention has shifted toward chronic pulmonary regurgitation, right ventricular dysfunction, arrhythmia, and sudden cardiac death in adulthood. Our institutional workflow integrates cardiac MRI, cardiopulmonary exercise testing, electrophysiologic evaluation, and hemodynamic assessment to guide individualized treatment strategies. Since the first transcatheter pulmonary valve implantation (PPVI) in Taiwan in 2015, our center has accumulated substantial experience with Melody, Venus P, and Pulsta valves, demonstrating favorable midterm outcomes.

The contemporary management of TOF has evolved from survival-focused treatment toward lifelong multidisciplinary care aimed at optimizing long-term functional outcomes and quality of life