



EMBARGOED UNTIL 20th NOVEMBER 2022 1730HRS SGT

Pacemaker implantation in the Grown-Up Congenital Heart Disease (GUCH) Population – anatomical challenges, current progress and future directions with conduction system pacing (CSP).

Context:

Patients with congenital heart disease are having longer life expectancy with greater surgical advancements and medical care. Consequently, these patients live long into adulthood, forming a special population of patients called the Grown-Up Congenital Heart Disease (GUCH). However, the incidence of developing atrioventricular block and ventricular arrhythmias is significantly greater than the general population and varies by the underlying anatomy and prior surgical intervention. Traditional subpulmonic RV pacing has been shown to have 20% risk of pacing induced cardiomyopathy in the general population, but this is higher in GUCH patient especially in more complex patients. While conduction system pacing (CSP) is rapidly gaining traction in view of its ability to maintain physiological ventricular activation, feasibility, and long-term outcomes of CSP in GUCH patients are still lacking.

Summary:

In this symposium, the various speakers touch on the anatomical challenges, specific GUCH conditions, current pacing and defibrillator approach and future directions.

In patients with GUCH, anatomical considerations are crucial for successful lead and device implantation. Venous access, presence of obstructions and venous anomalies are some of the key factors to consider. The speaker recommends engagement of the multidisciplinary heart team discussion and use of complementary imaging modalities such as cardiac tomography, cardiac magnetic resonance and electroanatomical mapping to select the optimal device selection and lead positioning in these patients.

Progress of CSP use in GUCH patients is still in its infancy. Beyond the anatomical considerations, some GUCH patients also have abnormal atrioventricular (AV) node and conduction system location which makes CSP more challenging. In a small international series, CSP was successful in 15 out of 20 patients (75%) of a mix of GUCH patients, of which 14 were His bundle pacing. There was significant reduction in QRS and improvement in ejection function and New York Heart Association (NYHA) functional class at 1 year.

Message:

“Consider conduction system pacing (CSP) in younger GUCH patients who require higher percentage of ventricular pacing and have impaired left ventricular ejection function (LVEF) at baseline” said Dr

Sabrina Tsao, MD, University of Hong Kong. “Operators should also consider electroanatomical mapping during implant to facilitate successful CSP.” However, she cautioned that “there is currently a lack of data in GUCH patients and there may be potential issues with lead extraction in the future”.

Session details:

Symposium 4 – Grown Up Congenital Heart Disease (GUCH) Device Therapy: 18th November 2022
4.30 – 5.40PM SGT

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