Congenital Heart Disease (CHD) Adult Survivors and Type 2 Diabetes Mellitus

Olivia Sutter
sutter@otterbein.edu

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Healthcare providers in this specialty are at risk for Type 2 diabetes mellitus. This is one of many interventions to improve quality of life.

**Introduction and Significance of the Topic**

The purpose behind selecting this topic is to raise awareness of this disease and to provide healthcare professionals with the knowledge and skills to effectively manage and support patients with Type 2 diabetes mellitus.

**Pathophysiology**

**Type 2 Diabetes Mellitus (T2DM)**

Type 2 DM is characterized by abnormal glucose metabolism from peripheral insulin resistance and decreased insulin secretion regulated by autonomic/islet cells of the pancreas (See picture below). Insulin resistance, decreased response to counter-regulatory hormones, decreased glucose output from liver, and adipose tissue, contribute to hyperglycemia (Deen and Krieger, 2016).

- **Hyperglycemia**
  - Insulin resistance
  - Decreased counter-regulatory hormones
  - Decreased glucose output from liver and adipose tissue

- **Dysregulation of glucose metabolism**
  - Insulin resistance
  - Decreased counter-regulatory hormones
  - Decreased glucose output from liver and adipose tissue

- **Beta cells**
  - Part of pancreas that secrete insulin
  - Insulin resistance
  - Decreased counter-regulatory hormones
  - Decreased glucose output from liver and adipose tissue

**Congenital Heart Disease (CHD) in Adults with CHD**

- **Dyslipidemia**
  - Increased risk for developing T2DM
  - Increased risk for cardiovascular disease
  - Increased risk for developing type 2 DM and require extra monitoring and care to minimize mortality.

- **Exercise restriction for individuals with CHD is now discouraged due to the prevalence of obesity in this population.**

- **Diet changes, along with exercise should be encouraged in this population to prevent complications of diabetes, especially type 2 DM.**

- **Adult cardiologists are typically not trained to treat adults with CHD and pediatric facilities have assumed the care of these individuals.**

- **Unfortunately, pediatric facilities currently cannot care for all the adult complications seen in adults with CHD and patients with congenital conditions such as Type 2 DM, require additional care and collaboration (Stout et al, 2015).**

- **Recent advances in the field of adult congenital heart disease (CHD) are now being brought to the forefront with the advent of adult CHD fellowships to better serve this population.**

- **What is the significance of diabetes mellitus and the congenital heart disease adult survivor?**

  - The presence of hypoglycemia determines degree of insulin resistance and impaired glucose metabolism. A primary evaluation may arise and if no fellowship is available at a facility, it is recommended to establish contact with an adult CHD facility to manage the care of these patients (Deen and Krieger, 2016).

**Conclusion**

The complexity of the adult congenital heart disease population cannot be overstated, especially those living with chronic diseases. These individuals are at a heightened risk for developing type 2 DM and require extra monitoring and care to minimize mortality. The advances in the field of adult congenital heart disease are significant, considering this is the first time a decade in which these individuals have been able to live with CHD (Deen and Krieger, 2016).

Further development of the adult congenital heart disease specialty, collaboration with other adult providers, and developing new recommendations for care will be key in maximizing the quality of life with this chronic disease.