

## **Arrhythmogenic Right Ventricular Cardiomyopathy/Dysplasia in Pregnancy: Literature Review and Case Update**

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### **Abstract (limit 600 words)**

Arrhythmogenic right ventricular cardiomyopathy/dysplasia (ARVC/D) is an autosomal dominant condition that may predispose patients to life-threatening arrhythmia, posing a potentially significant cardiac risk in pregnancy. Management of this condition is performed on a case-to-case basis as research is limited. A 28 year old woman was diagnosed with Arrhythmogenic right ventricular cardiomyopathy/dysplasia following genetic screening performed after a sudden sporting-induced collapse of her brother at age 21, at which point a prophylactic implantable cardioverter defibrillator (ICD) was placed. She became pregnant after the placement of the ICD and underwent a spontaneous miscarriage at 10 weeks gestation, which was successfully managed medically. ARVC/D is uncommonly considered alongside pregnancy; therefore, patients are managed individually, which requires a thorough understanding of current strategies. A literature review was performed using PubMed to assess current knowledge of ARVC/D in pregnancy. Although limited, published case reports and few retrospective cohort and systematic reviews conclusively describe safe pregnancy in mothers with Arrhythmogenic right ventricular cardiomyopathy/dysplasia. In the majority of cases, pregnancy is safe to progress to term and vaginal delivery is preferred, where Caesarean section is only indicated in cases of obstetric complications. Prophylactic ICD placement is the first-line management to prevent arrhythmia; flecainide or radio-ablation is the preferred second line treatments in the absence of an ICD.

### **Important of research (limit 200 words)**

ARVC/D is a rare cardiac condition that presents a unique challenge when considered along with pregnancy. Limited published research on this topic has prompted a review of the existing evidence to warrant for sound recommendations for the management of pregnancy on a background of ARVC/D. In most cases, pregnancy is safe to progress to term and vaginal delivery is recommended. As each individual patient may progress differently, an adequate pre-conception risk assessment, multidisciplinary management and regular antepartum monitoring for severe cardiac events are essential. Ventricular arrhythmia and heart failure are acutely severe events that may complicate the progression of pregnancy; however, evidence suggests these may be managed acutely, with the possibility to continue the pregnancy to term. The decision to deliver is weighed against the gestation of the pregnancy, however most emergency C-sections, or preterm deliveries presented have been due to obstetric, rather than cardiac indications.

### **Biography (limit 200 words)**

Dr. MARIAH SHANNON COLUSSI shall practise medicine only as required by the postgraduate medical education program in which Dr. COLUSSI is enrolled at UNIVERSITY OF OTTAWA. Dr. COLUSSI shall prescribe drugs only for in-patients or out-patients of a clinical teaching unit that is formally affiliated with the department where Dr. COLUSSI is properly practising medicine and to which postgraduate trainees are regularly assigned by the department as part of its program of



postgraduate medical education. Dr. COLUSSI shall not charge a fee for medical services. The certificate expires on the earlier of the following times: when Dr. COLUSSI is no longer enrolled in a program of postgraduate medical education provided by a medical school in Ontario, or when Dr. COLUSSI no longer holds Canadian citizenship, permanent resident status or a valid employment authorization under the Immigration Act (Canada). Note: This certificate expires on 30 Jun 2022.

### Information of Institute (limit 200 words)

The University of Life Sciences in Lublin (Polish: Uniwersytet Przyrodniczy w Lublinie) is a multi-profile higher education institution, which integrates a wide range of agricultural, biological, veterinary, technical and socioeconomic sciences in Poland. Although the university was established in 1955, its history stems back to 1944 with the creation of the Agrarian and Veterinary Faculties within the new Maria Curie-Skłodowska University (UMCS). In 1955, these two faculties, together with the Faculty of Zootechnics (est. 1953), were spun off to create a new institution, originally called the Lublin Higher School of Agriculture. It was called the Lublin Agricultural Academy from 1972, and took its present name.



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