

## World Cardiology Summit 2020: Catheter ablation of cardiac arrhythmias in pregnancy with limited fluoroscopy

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### Introduction:

During pregnancy, the cardiovascular device is confronted with substantial modifications which can precipitate the prevalence of arrhythmias. The hyperdynamic kingdom and altered hormonal popularity is per chance predisposing pregnant ladies to arrhythmias. Cardiac arrhythmias throughout being pregnant pose a serious danger to the fitness of each mom and fetus. Tachyarrhythmia, consisting of each supraventricular and ventricular tachycardia, is the most frequent cardiac complication determined for the duration of pregnancy. The paroxysmal supraventricular tachycardia at some stage in being pregnant is the most often determined arrhythmias with an incidence of 24 per 100,000 pregnancies. The recurrence costs at some stage in being pregnant in girls with a record of supraventricular tachycardia and ventricular tachycardia have been described in 50% and 27%, respectively. Adverse fetal activities happened in 20%. Catheter ablation is the first desire and security for cardiac arrhythmias in sufferers except pregnancy. Some authors cautioned that pregnant female need to now not endure an ablation system due to the fact of the radiation dangers to the fetus. There are very constrained records accessible for the consequences and security of catheter ablation in pregnancy. We look at the feasibility and protection of catheter ablation in being pregnant with constrained fluoroscopy.

### Keywords

Tachycardia; Radiofrequency catheter ablation; Atrioventricular reentrant tachycardia; Fluoroscopy time; Catheter ablation Patients

We studied 10 consecutive sufferers referred to Hanoi Heart Hospital, Hanoi, Vietnam from September 2015 to August 2019 for tachycardia in pregnancy. All sufferers underwent catheter ablation with restricted fluoroscopy.

### Study methods

A case-control retrospective study

### Ablation Procedure

All sufferers had been rolled round the stomach with an X-ray defensive apron. In general, three catheters (4–6F) had been placed at the proper ventricular apex, His bundle region, and

proper atrium the usage of the femoral vein method and the coronary sinus the use of the left subclavian vein approach. In the electrophysiological study, it was once carried out the use of fashionable protocols. Heparin used to be used in all of the instances after the vein approach. During all of the procedures, we tried to limit fluoroscopy as a good deal as possible. X-ray used to be used solely in the coronary sinus role and throughout the aortic valve. The fluoroscopy was once set at a minimal of three frames/second. The non-fluoroscopic mapping machine used Ensite Velocity (St Jude Medical) throughout the whole procedure. An ablation catheter (7F, 4-mm tip) was once commonly delivered the use of the proper femoral vein or artery approach. Mapping and ablation had been carried out the use of hooked up methods. The Radiofrequency (RF) power delivered was once 30–50 W, and the temperature restriction used to be in my opinion set to 50–70°C.

### Follow up

The sufferers underwent follow-up with the aid of cardiologists in the health center outpatient hospital at least from post-procedure to delivery.

All of the pregnant ladies gave their permission for ablation and conventional the opportunity of the usage of an X-ray if necessary. The learn about protocol was once authorized via the Ethics Committee of the Hanoi Heart Hospital.

### Results:

Ten sufferers with tachycardia in being pregnant underwent RF catheter ablation. The suggest age used to be  $26, 30 \pm 4$ , fifty two years of age (from 19 to 34 years old). The gestational age at the time of ablation process was once  $26, ninety \pm 2$ , 88 weeks of age (from 21 to 31 weeks old). All sufferers had no records of coronary heart failure and structural coronary heart diseases. All patients had at least one tachycardia in the course of their pregnancies. Two of 10 sufferers had a record of dysrhythmia earlier than pregnancy.

All sufferers have been ablated successfully. In our studied group, there have been two sufferers with AT, two sufferers with VT, four sufferers with AVRT, two patients with AVNRT. In two sufferers with AT, areas of ablation had been one of beneath proper atrial appendage and one of the coronary sinus ostium. Both sufferers with VT, area of ablation had been proper ventricular outflow tract. In four sufferers of AVRT,

areas of ablation had been two of the left free wall accent pathways, one of the left septal accent pathways and one of the proper posterior free wall accent pathways. We ablated the sluggish pathway in two sufferers with AVNRT. The timing of the manner was once 66,  $50 \pm 19$ , 86 minutes. The timing of fluoroscopy was once 118,  $80 \pm 64$ , 38 seconds. The whole dose region product was once 0,  $73 \pm 0$ ,  $64 \text{ Gy-cm}^2$ ).

In each day practice, heparin used to be used in case of get admission to to the left facet of the coronary heart and for methods of longer duration. In catheter ablation for pregnancy, we used prophylactic heparin for all cases. Pregnancy is related with a hypercoagulable fame and venous congestion. During procedures, the sufferers underwent catheter ablation which is regarded to make bigger the thrombogenicity, and catheter motion thru the femoral vein may embolize the venous thrombosis. Therefore, prophylactic heparin is strongly advocated to forestall thromboembolic occasions in being pregnant present process catheter ablation.

Patient's outcome: There had been now not any issues for the duration of and after procedures. All being pregnant usually delivered healthful babies. Only one being pregnant wanted cesarean surgery, however now not due to cardiovascular problems.

#### **Conclusion:**

Catheter ablation with confined fluoroscopy can be carried out in being pregnant with a excessive success rate. The catheter ablation processes produced secure and accurate effects in pregnancy.

#### **Conflict of Interest**

the author declare that the lookup was once carried out in the absence of any business or monetary relationships that be construed as a viable war of interest