Recommendations for arrhythmia management of the pregnant patient with hypertrophic cardiomyopathy			
COR	LOE	Recommendations	References
1	B-NR	1. Women and/or their partners with HCM should be offered preconception counseling, including genetic counseling.	370,371
1	C-LD	2. Pregnant patients with HCM should be treated for documented or potential arrhythmias as in the nonpregnant patient, including continuation of beta-blockers and the use of antiarrhythmic drug– and device-based therapies as needed, favoring options with the best record of safety in pregnancy.	372-376

Synopsis

A number of studies have shown generally good pregnancy outcomes among patients with HCM, although complications are observed especially in those previously identified as high risk.[372] The third trimester appears to be a particularly high-risk period. Potential and documented maternal arrhythmias are generally treated as in the nonpregnant state, favoring therapeutic options with a record of safety in pregnancy.

Recommendation-specific supportive text

1. Prenatal counseling can help parents understand the risk of transmission of heritable diseases, including HCM, and the risks of pregnancy for the mother and the baby. Genetic counseling can introduce options including, but not limited to, prepregnancy genetic diagnosis, fetal screening, maternal and paternal prenatal testing, and postnatal testing for the infant and family. The potential benefits, risks, and alternatives should be discussed for all of these options during preconception counseling, such that the patient or parents can make a fully informed decision about pregnancy, prenatal genetic testing, and fetal screening.[6,370,371,377,378]
2. Autore et al[372] reported their experience with 100 women with HCM who had a total of 199 births. They concluded that, despite higher maternal mortality in patients with HCM compared with the general population, absolute maternal mortality was low and confined to women at a particularly high risk. The progression of symptoms, AF, and syncope was uncommon during pregnancy. Data from the ROPAC registry[376] showed that despite overall good outcomes, 23% of pregnant women with HCM developed major cardiac events, including VT in 10% and AF in 1.7%. A particularly high-risk period was the third trimester, and most events occurred in patients already identified as high risk prior to pregnancy. Schinkel[375] performed a systematic review of 11 studies, which included 237 women and 408 pregnancies, finding that, although the overall event rate was low, the maternal mortality rate was 0.5%, and complication or worsening of symptoms occurred in 29%. Across these studies, maternal arrhythmias were generally treated with standard therapies, and the great majority of patients were maintained on beta-blockers throughout the pregnancy.

Section 11 Management of fetal arrhythmias

The normal fetal heart rate range is between 110 and 160 bpm. If the heart rate is beyond the normal range or the rhythm is irregular, then a fetal arrhythmia is detected. It is also possible to have a fetal arrhythmia that is regular and falls in the normal heart rate range, but these normal-rate dysrhythmias will often go undetected until after birth. The heart rate, duration, mechanism of the rhythm and degree of irregularity usually predict the hemodynamic consequences. Fetal arrhythmias are diagnosed in approximately 1% of all fetuses and up to 49% of referrals for fetal echocardiograms.[379] This section covers general fetal arrhythmias not related to IAS, which are covered in Section 12.2.

11.1. Fetal atrial tachyarrhythmias

While intermittent atrial tachyarrhythmias in the fetus have an excellent prognosis, fetuses with sustained tachycardias are at increased risk of stillbirth and morbidity.[380] Incessant (in tachycardia >50% of the time or >12 hours per day) fetal SVT is often associated with fetal hydrops and ventricular dysfunction.[380] AFL accounts for approximately 30% of all fetal tachyarrhythmias and is often associated with CHD.[232] Incessant (>50% of the time or greater than 12 hours per day) fetal AFL is often accompanied by fetal hydrops and ventricular dysfunction, and resultant neurologic sequelae and mortality (5-30%).[78,380,381] In the setting of fetal arrhythmias, the cardio-obstetrics team in the context of the management of the fetus should include, if available, a fetal or pediatric cardiologist or electrophysiologist, perinatologist (maternal-fetal medicine subspecialist), and neonatologist.