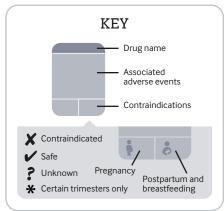
# Using cardiovascular drugs during pregnancy



Many cardiac medicines appear safe for use during and after pregnancy, as summarised here. However, evidence is lacking for some drugs, and many of them carry risks of adverse events. Shared decision making, considering risks and benefits of medicines. is vital to help women weigh up potential risks to themselves and their unborn baby.





### $\beta$ blockers

These are commonly used by pregnant women. However. organ-specific malformations are more prevalent in the offspring of women treated with  $\boldsymbol{\beta}$  blockers, and fetal growth restriction has been reported



When used near term: Fetal hypoglycaemia Fetal bradycardia





# Bisoprolol

Fetal hypoglycaemia Fetal bradycardia

### Atenolol

When used in second and third trimester:

Low birth weight





### Methyldopa

Mild neonatal hypotension, Avoid post partum because of the risk of postnatal depression



Serum levels are unreliable





### Calcium channel blockers

Not associated with an increased incidence of congenital anomalies in humans

# Nifedipine

Potential synergism with magnesium sulphate can induce hypotension in mother and fetal hypoxia





### Verapamil

Well tolerated



# Platelet aggregation inhibitors

Low dose aspirin safe in early pregnancy, but usually stopped at 34–36 weeks. No teratogenic effects



Safe in animal studies, but caution is advised. Stop one week before anticipated delivery

Clopidogrel





### Antiarrhythmic drugs

# ∆ Limited evidence

No fetal adverse effects reported





Unknown. Appears to be safe

### ∆ Limited evidence

Unknown. Appears to be safe

### **Amiodarone**

Might be used in special circumstances. Risk of hypothyroidism, goitre, bradycardia, fetal growth restriction, and preterm birth



### Diuretics and aldosterone antagonists

Oligohydramnios and electrolyte imbalance in the fetus





# Anticoagulants

# Warfarin

Risk of fetal abnormalities if used in the first trimester. Can cause intracranial fetal bleeding in second trimester.





### Heparin (low molecular weight)

Seldom osteoporosis and markedly less thrombocytopenia than unfractionated heparin.





# Drugs contraindicated in pregnancy

# ACE inhibitors†

High risk of fetal abnormalities. Captopril and Lisinopril considered safe in breast feeding



### Angiotensin receptor blockers

High risk of fetal abnormalities



# Spironolactone

### 

Possible risk of anomalies of the external genitalia





 $\uparrow ACE\ inhibitors = Angiotensin\ converting\ enzyme\ inhibitors$ 

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