Rheumatic heart disease and pregnancy

Clinical Guideline Presentation v2.0

45 minutes

Towards CPD Hours

Clinical Excellence Queensland

Queensland Government

References:

Queensland Clinical Guideline: Rheumatic heart disease and pregnancy is the primary reference for this package.

Recommended citation:

Queensland Clinical Guidelines. Rheumatic heart disease and pregnancy clinical guideline education presentation E22.68-1-V2-R27. Queensland Health. 2022.

Disclaimer:

This presentation is an implementation tool and should be used in conjunction with the published guideline. This information does not supersede or replace the guideline. Consult the guideline for further information and references.

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Funding:

Queensland Clinical Guidelines is supported by the Queensland Health, Healthcare Improvement Unit.

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Objectives

- Understand what rheumatic heart disease (RHD) is
- Identify high risk populations and signs and symptoms of RHD
- Assess and stratify risks of RHD in pregnancy
- Identify appropriate actions according to risk level and clinical circumstances

Abbreviations

Abbreviation	Full text
ARF	Acute rheumatic fever
CSCF	Clinical skills capability framework
ECG	Electrocardiograph
MHV	Mechanical heart valve
RHD	Rheumatic heart disease

What is Rheumatic heart disease?

- Rheumatic heart disease (RHD) is caused by damage to the heart resulting from previous acute rheumatic fever (ARF)
- ARF is caused by *Group A streptococcal infection* (throat and/or skin infection)
- ARF is associated with poor living conditions, overcrowding and socioeconomic deprivation

High risk populations

Women who

- Live in an ARF endemic setting
- Are Aboriginal and/or Torres Strait Islander, Maori or Pacific Islander peoples
- Are immigrants or children from immigrants from low/middle income countries and countries with high ARF and RHD prevalence
- Live in crowded households and/or low socioeconomic status
- Are refugees or have spent time in refugee camps
- Have a history of ARF and are less than 40 years old

Queensland RHD register

- ARF and RHD are notifiable diseases in Queensland
- The Queensland RHD Register and Control Program is a statewide patient register and recall system for ARF and RHD

If known or new RHD, contact the Queensland RHD register (1300 135 854) and update with pregnancy status

Case study

Brooke is 24 years old with known RHD following ARF as a child. She is thinking about having a baby.

What preconception care is indicated for Brooke?

- Refer to cardiology and obstetric medicine for individualised counselling about
  - o Risks of RHD and pregnancy
  - o Management of medications and anticoagulation where indicated
  - o Contraceptive options available until full counselling completed

Culturally safe care

Brooke falls pregnant following her pre-conception counselling. She identifies as an Aboriginal woman and lives in a remote community in far north Queensland.

What cultural considerations need to be considered for Brooke's care?

- Promote local community based care that incorporates and respects cultural values
- Offer support from advanced health care workers and multicultural/RHD nurse navigators at entry point to service where available
- Coordinate appointments, and minimise travel burden and time away from community and family
- Access virtual and telehealth services where appropriate

Risk stratification

Brooke attends her local hospital for a booking-in appointment and discusses her RHD.

How can you determine Brooke's level of risk?

- Maternal risk is based on a combination of
  - History
  - Current symptoms
  - Echocardiography
  - Requires expert clinical judgement in a multidisciplinary context

Risk stratification

What red flags may indicate a high level of risk?

- Dyspnoea with minimal exertion or at rest (requires immediate evaluation)
- Previous cardiovascular events or symptoms
- Atrial arrythmias
- Left ventricular dysfunction
- Severe mitral regurgitation or aortic regurgitation
- Moderate or severe pulmonary hypertension
- Mechanical prosthetic heart valve
- Multiple or stenotic valvular lesions
- Late or no antenatal care

Mechanical valve

It is established the Brooke has a mechanical heart valve (MHV).

What care considerations are important for women with a MHV?

- Women with a MHV are at a higher bleeding and embolic risk, and of poor maternal and perinatal outcomes compared to women with a bioprosthetic valve
- Anticoagulation is required for all women with MHVs
- Management is complex; liaise with or refer to an expert practitioner for management options

Case study

Olivia, a Ngadjan woman, presents to her local hospital for a regular antenatal appointment at 18 weeks in her first pregnancy. She is not known to have RHD. Olivia is complaining of some shortness of breath, and discloses that she has to sleep propped up with pillows. She is also complaining of fatigue, and swollen legs and feet.

What signs and symptoms may alert you to the possibility of RHD?

- Breathlessness, cough or wheeze
- Orthopnoea (shortness of breath when lying flat)
- Significant reduction in exercise tolerance
- Syncope or presyncope
- Tachycardia
- Leg oedema
- Undiagnosed cardiac murmur

RHD may present for the first time in pregnancy

Antenatal care

An urgent cardiac review and echocardiogram is arranged for Olivia, and she is diagnosed with RHD.

Don’t forget….

- RHD is a notifiable disease in Queensland
- Notify the Queensland RHD Register and Control Program (1300 135 854)

Antenatal care

Olivia's assessment finds that she has moderate mitral stenosis (mitral valve area 1.7 cm^2), placing her in the high risk category.

What care is recommended for Olivia during pregnancy?

- Baseline echocardiogram and electrocardiograph (ECG)
- Cardiac review 2nd monthly or sooner if indicated
- All routine antenatal assessments
- Monitor closely for pre-eclampsia
- Early anaesthetic review
- Review/commence/modify medications as required
- Recommend early oral assessment to decrease risk of infective carditis
- If secondary prophylaxis (antibiotics to prevent recurrent ARF) is currently prescribed, continue during pregnancy
- Surveillance for infection or repeat ARF

Planning for birth

Olivia is in the third trimester of her pregnancy. Her RHD has remained in the high risk category.

What birth planning is indicated?

- Individualise birth plan (including place of birth) according to level of risk, and in consultation with multidisciplinary team
- For women in high risk category, birth is recommended at a CSCF level 5 or 6 hospital
- Vaginal birth preferred unless specific indications for caesarean birth
- Caesarean section is indicated if:
  - Unplanned labour and warfarinised
  - Severe heart failure, haemodynamic instability or pulmonary hypertension
- Induction of labour may be indicated:
  - To allow optimisation of anticoagulation in fully anticoagulated women
  - If deteriorating maternal cardiac function
  - To facilitate access to specialist medical staff at the birth

Intrapartum care

Olivia goes into spontaneous labour at 39 weeks gestation.

What care is indicated during Olivia's labour?

- Notify anaesthetist at onset of labour and recommend early neuraxial blockade
- Regular multidisciplinary team clinical assessment
- Maintain clinical surveillance for signs of cardiovascular deterioration (e.g. dyspnoea)
- Recommend continuous electronic fetal monitoring
- Close surveillance of haemodynamic status and fluid balance

Intrapartum care

Continued…

- Individualise intensive and/or invasive monitoring according to severity of disease
- Consider critical care nursing support and/or birth in operating room suite
- Consider shortening of second stage and limiting active maternal pushing (e.g. episiotomy or instrumental vaginal birth)
- Recommend pushing in left lateral and avoiding prolonged lithotomy position
- Antibiotic prophylaxis only if indicated according to obstetric indications

Third stage

Olivia gives birth to a healthy baby girl.

What care is indicated for Olivia's third stage and postpartum period?

- Recommend modified active management of third stage and prophylactic uterotonics
- Oxytocin 10 units intramuscularly immediately following birth
  - Oxytocin infusion can be given prophylactically for treatment of postpartum haemorrhage if necessary (administer via infusion in small volumes of diluent, e.g. 50–250 mL)
  - Avoid bolus of IV oxytocin
- Avoid ergometrine and carboprost
- Misoprostol is not contraindicated

Postpartum

Olivia’s third stage is straightforward. She is breastfeeding her baby and is feeling comfortable.

What care is indicated for the immediate postpartum period?

- IV fluids to replaces vaginal blood loss only
- Monitor in birth suite, HDU or ICU for at least 12 hours post birth
- Monitor pulse, blood pressure, oxygen saturations, blood loss and dyspnoea
- Strict fluid balance chart and indwelling catheter

Postpartum

24 hours following birth, Olivia's postpartum period has been uneventful and she is transferred to the postnatal ward.

What care is indicated for Olivia's postnatal period?

- Routine postnatal observations and care according to clinical condition
- Review safety of cardiac medications during lactation
- If any new cardiac symptoms (e.g. dyspnoea), investigate promptly

Discharge planning

24 hours following birth, Olivia's postpartum period has been uneventful and she is transferred to the postnatal ward.

What special considerations are required for discharge planning?

- If applicable, confirm next dose of secondary prophylaxis treatment
- Refer to multicultural, rural or RHD nurse navigators where available
- Counsel about the importance of contraception and the planning of future pregnancies
- Facilitate follow-up cardiac review according to priority
- Share information on treatment, medications, future management plans and conception planning with primary care providers/referring hospital within 48 hours of discharge