

ASSESSMENT OF PAEDIATRIC MURMURS

Author: Adekunle Matthew Sobowale (MTI Fellow)

Supervisor: Alison Groves (Consultant Paediatrician)

Contact details: adekunle.sobowale@nhs.net

Guideline History

Date	Comments	Approved By

Patients first • Personal responsibility • Passion for excellence • Pride in our team

Section 1 Organisational Policy	Current Version is held on the Intranet	First ratified: December 2013	Review date: December 2016	Issue 2	Page 1 of 8
---------------------------------------	---	----------------------------------	-------------------------------	------------	-------------

Contents

Page

1. Guideline
 - a. Introduction
 - b.
2. Supporting References
3. Supporting Trust Guidelines
4. Guideline Governance
 - a. Scope
 - b. Purpose
 - c. Duties and Responsibilities
 - d. Approval and Ratification
 - e. Dissemination and Implementation
 - f. Review and Revision Arrangements
 - g. Equality Impact Assessment
 - h. Document Checklist
5. Appendices

1.

Section 1 Organisational Policy	Current Version is held on the Intranet	First ratified: December 2013	Review date: December 2016	Issue 2	Page 2 of 8
---------------------------------------	--	----------------------------------	-------------------------------	------------	-------------

Title of Guideline

Evaluation of Paediatric murmurs

Introduction

Heart murmurs are common in asymptomatic and otherwise well children (Innocent murmur). A murmur can also be the sole manifestation of structural heart disease (pathologic murmur). A careful evaluation is essential to separate these scenarios.

Evaluation

Historical elements suggestive of pathology –

Antenatal history – in utero exposure to medications and alcohol, maternal diabetes mellitus, ultrasound screening done and findings, Where ANC was done etc.

Family history of sudden cardiac death or congenital heart disease.

History of rheumatic fever or Kawasaki disease and certain genetic disorders

Symptoms of cardiac failure – feeding difficulties, exercise intolerance, respiratory difficulties etc.

Chest pain, palpitations, exertional syncope.

Physical examination

Deranged age specific vital signs, especially pre and post ductal saturations in the peri-neonatal infants

Features of heart failure – poor activity level, pallor, respiratory distress, prominent neck vessels, abnormal pulsations, abnormal cardiac impulses, thrills. Signs of lung congestion and abdominal organomegaly.

Innocent Murmurs –

- Sensitive (changes with child's position or with respiration)
- Short duration (not holosystolic)
- Single (no associated clicks or gallops)
- Small (murmur limited to a small area and not radiating)
- Soft (low amplitude)
- Sweet (not harsh sounding)
- Systolic (occurs and is limited to systole)

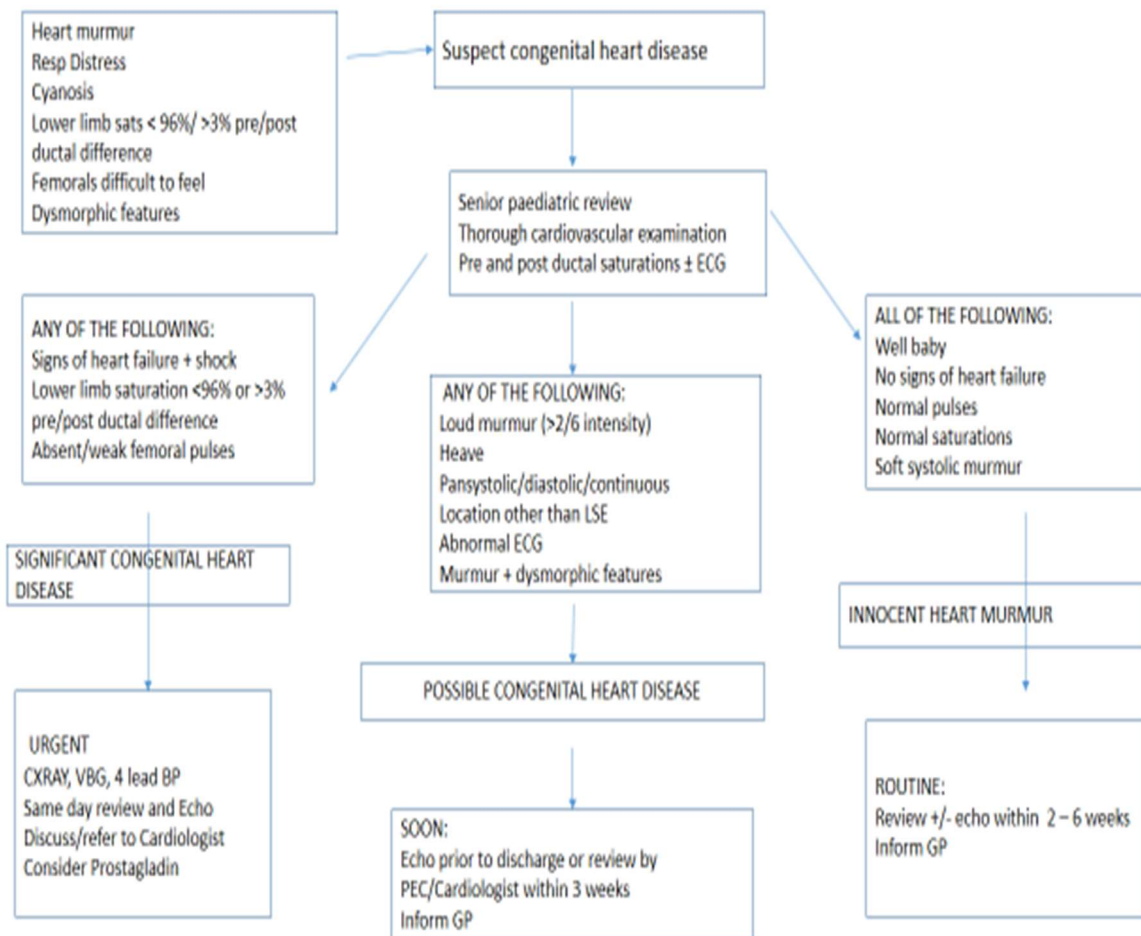
Pathological murmurs –

- Holosystolic (pansystolic) murmur
- Harsh murmur
- Abnormal heart sounds

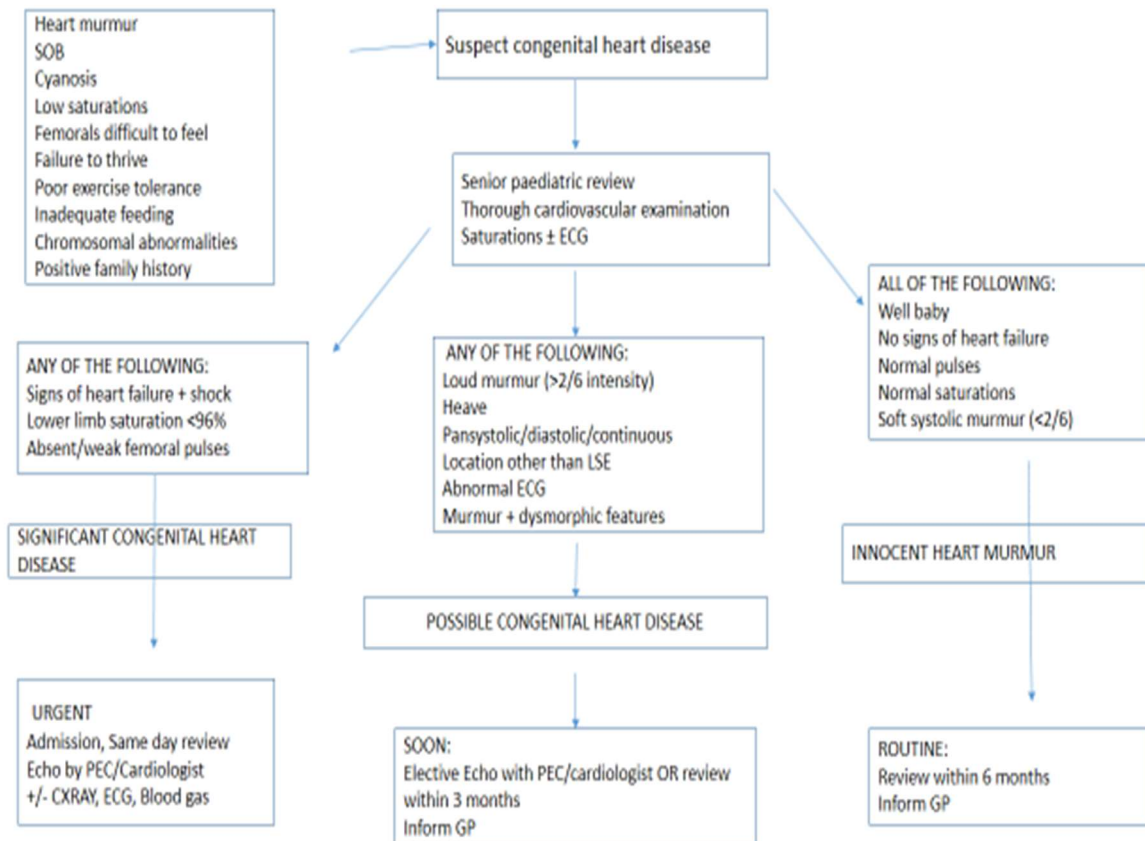
Section 1 Organisational Policy	Current Version is held on the Intranet	First ratified: December 2013	Review date: December 2016	Issue 2	Page 3 of 8
---------------------------------------	--	----------------------------------	-------------------------------	------------	-------------

- Early or mid-systolic click
- Grade 3 murmur or greater
- Heard over upper left sternal border
- Diastolic murmurs

Algorithm for evaluation of newborn murmurs



Algorithm for evaluation of murmurs in older children



Characterisation of Innocent Heart murmurs

Type	Description	Age at detection	Differential
Still's murmur	Grade 1 to 3, early systolic murmur; low to medium pitch with a vibratory or musical quality; best heard at lower left sternal border; loudest when patient is supine and decreases when patient stands.	Infancy to adolescence, often 2 – 6 years	VSD or Hypertrophic cardiomyopathy
Pulmonary flow murmur	Grade 2 or 3, crescendo-decrescendo, early- to mid-systolic murmur peaking in mid-systole; best heard at the left sternal border between the second and third intercostal spaces; characterised by a rough, dissonant quality; loudest when patient is supine and decreases when patient is upright and holding breath	All	ASD or pulmonary valve stenosis
Venous hum	Grade 1 to 6 continuous murmur; accentuated in diastole; has a whining, roaring or whirring quality; best heard over low anterior neck, lateral to the sternocleidomastoid; louder on right; resolves or changes when patient is supine	3 to 8 years	PDA or Cervical arteriovenous fistulas
Peripheral pulmonary stenosis	Grade 1 or 2, low- pitched, early- to mid-systolic ejection murmur heard over axilla or back	< 1 year; often heard in premature infants, LBWs, and infants up to 4 months of age	Pulmonary artery stenosis
Supraclavicular/ brachiocephalic systolic murmur	Brief, low-pitched, crescendo –decrescendo murmur heard in the first two-thirds of systole; best heard above clavicles; radiates to neck; diminishes when patient hyperextends shoulders	Childhood to young adulthood	Bicuspid/stenotic aortic valve, pulmonary valve stenosis, or coarctation of the aorta
Aortic systolic murmur	Systolic ejection murmur best heard over the aortic valve	Older children into adulthood	-

Supporting References

Frank JE, Jacobe KM; Evaluation and Management of heart murmurs in children, *Am Fam Physician*. 2011 Oct 184(7): 793-800.

Park MK: Pediatric Cardiology for Practitioners, 5th Edition, Mosby Elsevier. 2008

Venugopalan P, Ranaweera M, Paedatric murmur guideline for the children's emergency department, *Arch Dis Child* 2015; 100(Suppl 3): A38 – A39.

Section 1 Organisational Policy	Current Version is held on the Intranet	First ratified: December 2013	Review date: December 2016	Issue 2	Page 7 of 8
---------------------------------------	--	----------------------------------	-------------------------------	------------	-------------

3. Supporting relevant trust guidelines

Section 1 Organisational Policy	Current Version is held on the Intranet	First ratified: December 2013	Review date: December 2016	Issue 2	Page 8 of 8
---------------------------------------	--	----------------------------------	-------------------------------	------------	-------------