

Effect of changes to UK fetal cardiac screening protocols across the spectrum of congenital heart disease requiring intervention in the first year of life

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Introduction

New UK standards for fetal screening (UK NHS FASP) were launched in early 2010, & a national training programme to improve cardiac screening was provided. Prior to 2010, standard 18-20 week screening principally required a 'normal 4 chamber view'. The new standards have added views of the aorta/LV outflow tract & the pulmonary artery/RV outflow tract or a 3 vessel view showing the aorta, pulmonary artery and superior vena cava. Use of Colour flow is encouraged but not mandatory. There is a stated expectation that 'all units would meet minimum standards' by April 2011. We evaluated the proportion of babies (<1 year) undergoing surgery or interventional cardiology procedures at EMCHC diagnosed prenatally, by calendar year, over the last 3 years, in broad morphologic groups, to assess progress and identify areas for further improvement

Methods:

Retrospective case note review. Patients with ASD, PDA and ALCAPA excluded. Lesions grouped as 'isolated'; VSD, Coarctation, Aortic & Pulmonary stenosis (AS + PS), TGA, AVSD, and 'complex'; functionally single ventricle (V), 'Conotruncal' abnormalities (ToF variants, Truncus Arteriosus and IAA with VSD), 'balanced' ccTGA variants. No cases of isolated TAPVD were diagnosed prenatally.

Results:

In 2009, overall percentage of cases with a prenatal diagnosis was 33% (42/126), in 2010 was 32% (43/134) & in 2011 it was 39% (53/137). Main diagnostic groups shown below;

Group	2009		2010		2011	
	Diagnosed (% of total)	Missed	Diagnosed (% of total)	Missed	Diagnosed (% of total)	Missed
VSD	4 (25%)	12	1 (5%)	18	0 (0%)	21
Coarct'n	1 (8%)	12	1 (10%)	9	3 (18%)	14
AS + PS	3 (25%)	9	2 (20%)	8	3 (18%)	13
TGA	5 (33%)	10	5 (38%)	8	5 (41%)	7
AVSD	0 (0%)	3	5 (36%)	9	11 (73%)	4
Single V	11 (73%)	4	14 (70%)	6	11 (79%)	3
'Conotruncal'	10 (36%)	18	8 (44%)	10	8 (40%)	12
ccTGA	2 (100%)	0	1 (33%)	2	2 (100%)	0
Total	36 (35%)	68	37 (35%)	70	43 (37%)	74

Conclusions:

Overall percentage of cases diagnosed prenatally did rise in 2011, but varied for different lesions. Prenatal diagnosis rate for AVSD was poor but has increased dramatically, detection of TGA is slowly improving, but it appears that detection of isolated VSD has in fact deteriorated. Percentage of prenatal diagnosis for single ventricle lesions remains high (reflecting a regionally low rate for termination of pregnancy), but some remain undetected. Detection rate of 'milder' obstructive valve disease remains constant, but detection of 'conotruncal' defects, which the new FASP standards should facilitate, has not yet changed dramatically. At least in the East Midlands, the 2010 FASP standards have improved 4 chamber screening for AVSD but have not yet impacted for other lesions. More training work is needed.