British Association of Child and Adolescent Public Health

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ADAPTING THE ASTHMA FRIENDLY SCHOOLS TRAIN-THE-TRAINER SESSION TO AN ONLINE FORMAT DURING THE COVID-19 PANDEMIC

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10.1136/archdischild-2021-rcpch.706

Background The Asthma Friendly Schools programme is aimed at improving asthma recognition and management within schools as, although asthma is common, outcomes within the UK are amongst the worst in Europe.

In order to be certified as asthma friendly, each school will have:

- An asthma policy
- A register of pupils with asthma– all with medically issued asthma plans
- Emergency inhaler/spacer kits
- A minimum of 85% of staff trained in asthma management

All schools taking part will be audited annually by the School Health Service.

Improving asthma management within schools in this way has many benefits, including:

- Improved attendance
- Improved academic achievement
- Improved participation in physical activity
- Reduced medical complications related to asthma

Objectives Using a train-the-trainer approach, we aim to identify and train asthma champions within each school in the borough. The aim is for these champions to share this training with the staff and student body, thereby raising awareness of asthma and how to treat it.

Methods In 2018, a new train-the-trainer approach to teaching Asthma Friendly Schools was launched across the borough, taught face-to-face. Due to the COVID-19 pandemic, in 2020 the course was redesigned into an online format.

Pre and post course questionnaires were collected. Candidates rated their confidence across 14 domains, on a 5-point likert scale. Feedback was compared between the 2019 face-to-face course, and the 2020 online course.

Results In the face-to-face course, the scores improved from pre to post course across 13 domains (mean percentage improvement across all domains 20%). In the online course, scores improved across all 14 domains (mean percentage improvement across all domains 22%). There was a greater improvement between pre and post scores in the online course than the face-to-face course in 10 of the 12 domains.

The post-course questionnaire also asked participants to rate 5 additional outcomes, self-rating their understanding of asthma and confidence teaching how to manage it, on a 5 point likert scale. Mean rating across all 5 domains was 4.51 in the face-to-face course and 4.34 in the online course. Participants on the face-to-face course scored higher confidence ratings on 4 out of 5 domains.

After the online course, participants were asked if they liked the online format. Participants mean score for 'This

session worked well online' was 4.42 (on a scale of 1–5). 83.80% answered yes to 'If you attend another similar event to this, would you prefer to attend it online via Zoom, rather than face-to-face.' 73.70% answered yes to 'If you have previously attended an AFS train-the-trainer face-to-face session, did you prefer to be taught online via Zoom rather the face-to-face.'

Conclusions Participants in both the online and face-to-face courses rated their knowledge of asthma across a range of domains as improved after attending the Asthma Friendly Schools workshop.

The participants' self-ratings in their confidence improved more during the online than face-to-face course; however their self-evaluation of their post-course understanding of asthma was higher in the face-to-face course. The majority of candidates felt the session worked well online and they preferred to attend the course in that format.

Paediatricians with Expertise in Cardiology Special Interest Group

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6-YEAR OUTCOME OF ANTENATAL DIAGNOSIS OF ISOLATED RIGHT SIDED AORTIC ARCH

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10.1136/archdischild-2021-rcpch.707

Background Normal foetal development of the heart forms a left sided aortic arch. However, a right sided aortic arch (RAA) occurs in up to 0.1% of the population which may have important clinical implications for the unborn child in the form of a vascular ring or 22q11 micro-deletion association. The introduction of the 3 vessel and trachea (3VT) imaging in the foetal anomaly screening programme has led to an increase in diagnosis of right sided and double aortic arches. Our unit's current practice for these children is to conservatively manage and only investigate if they become symptomatic. We collected data for these children over the past 6 years and compared this against vascular ring surgeries performed over a similar period to assess whether the introduction of 3VT has led to an increase in vascular ring surgeries being performed for isolated RAA.

Objectives To assess whether antenatal diagnosis of isolated right sided aortic arch is associated with increased investigations and vascular ring surgery postnatally

Methods We retrospectively reviewed antenatal data from a fetal cardiac unit for babies born between January 2015 to August 2020. We followed this up by reviewing these patient's postnatal outcomes from the regional tertiary paediatric unit. Data collected included amniocentesis uptake & results, immediate postnatal outcome, symptomatic patients, how often investigations were required and frequency of clinic reviews. We then evaluated all patients who had vascular ring surgery for RAA within this period and compared it against the preceding 5 years (i.e. Jan 2010 – Jan 2015).

Results We found 64 fetuses antenatally diagnosed with isolated RAA. 58% consented and underwent amniocentesis. 11%

were found to be abnormal (3 x 22q11 and 1 x trisomy 21) which led to 1 termination of pregnancy (1 x 22q11). There were also 2 intra-uterine deaths (1 x 22q11 and 1 unexplained). Of 61 babies born alive, 6 became symptomatic and 5 of these required further investigations. Eventually 2 of these children required vascular ring surgery. Furthermore, 16 vascular ring surgeries were performed for symptomatic isolated RAA between Jan 2010 – Jan 2020. 8 were born after introduction of 3VT imaging (i.e. Jan 2015 – August 2020). 4 out of 8 were antenatally diagnosed with RAA (this includes the 2 other antenatally diagnosed RAA diagnosed at the sister fetal cardiac unit).

Conclusions Antenatal diagnosis provided an ideal opportunity to discover associated genetic abnormalities which allowed for parental counselling and planning for optimal postnatal care. Furthermore, although a small number of patients did eventually become symptomatic and require investigating – there was no increase in vascular ring operations performed for isolated RAA despite the introduction of 3VT imaging. We therefore recommend that children with antenatal diagnosis of isolated RAA are managed conservatively with routine follow up, appropriate safety netting advice and further investigations only if they become symptomatic.

British Association of Perinatal Medicine and Neonatal Society

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IMPLEMENTATION OF PULSE OXIMETRY SCREENING PROGRAM FOR CRITICAL CONGENITAL HEART DEFECTS

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10.1136/archdischild-2021-rcpch.708

Background

- Congenital Heart Disease (CHD) affects 8 in 1,000 newborns. Critical Congenital Heart Defects (CCHD) occur in 1 to 3 per 1,000 live births and account for about 40% of deaths from other congenital malformations in the first year of life.
- CCHD outcomes are improved when newborn babies are detected before the acute cardiovascular collapse. Despite antenatal ultrasonography and postnatal clinical examination, there is still a significant proportion of babies with CCHD missed.
- Routine Pulse Oximetry Screening using Special Algorithm has been reported as an additional screening test that can improve detection of CCHD.

Objectives

- Evaluate the implementation results of Pulse Oximetry Screening in the Well Baby Nursery (WBN) at King Fahd Armed Forces Hospital (KFAFH) for CCHD detection.
- Measure missed newborns with undiagnosed CCHD discharged from KFAFH WBN.
- Evaluate the incidence of CCHD in the KFAFH newborn population.

Methods

- This is a prospective study carried out over 3 years (January 2016 till December 2018).
- Pulse-Oximetry Screening included all healthy newborns at 24 hours of age or just before discharge.
- All echocardiography's done for readmitted newborns within the 1st two weeks after discharge were reviewed to detect missed CCHD cases, as KFAFH is considered a tertiary hospital with a cardiac center.
- All CHD were collected. CCHD cases were identified whether the diagnosis was antenatally detected, symptomatic before 24 hours of age, or detected by the CCHD Pulse Oximetry Screening.

Results

- 17130 newborns were eligible for screening representing 100% of admissions at KFAFH WBN with a mean number of 475.8 newborns screened per month.
- 153 CHD detected with a Mean Incidence of 8.93/1000 live birth.
- 34 cases had CCHD with a Mean Incidence of 1.98/1000 live birth and represent 22.22% of all CHD.
- These 34 cases including:
 - 15 HLHS.
 - 7 TGA.
 - 4 Fallot Tetralogy.
 - 3 Pulmonary Atresia.
 - 3 Severe Coarctation Of the Aorta.
 - 1 Ebstein anomaly.
 - 1 Truncus Arteriosus
- Of these 35 cases
 - 17 cases (50%) were diagnosed **Antenatally**.
 - 13 cases (38.2%) were **Symptomatic**.
 - 5 cases (11.8%) were diagnosed with **Pulse Oximetry Screening**.
- 4 CCHD cases diagnosed with echocardiography after Positive Pulsoximetry Screening Result including:
 - 2 Hypoplastic Left Heart Syndrome (HLHS).
 - 1 Ebstein Anomaly.
 - 1 Severe Pulmonary Stenosis.
- All echocardiography's done for readmitted newborns within the 1st two weeks after discharge were reviewed and showed NO MISSED UNDIAGNOSED CCHD cases before hospital discharge.

Conclusions

- CCHD Pulse Oximetry Screening Program should be part of the standard of care to all newborns, as it has an important role in the detection of silent cases with CCHD that are not diagnosed either antenatally or with postnatal clinical examination.
- Our incidence at KFAFH hospital newborns for CHD and CCHD is slightly higher than the international incidence, thus combining an effective CCHD antenatal screening with postnatal Pulse Oximetry Screening will have a significant effect on reducing the significant morbidity and mortality associated with CCHD.