

PS-010 **ADAPTATION TO LIFE AFTER CANCER IN CHILDREN— DOES TYPE OF MALIGNANCY AND GENDER INFLUENCE IT?**

¹P Gorski, ¹A Bialek, ¹Q Sohail, ²E Bien, ²M Krawczyk, ²B Kaczorowska-Hac, ²D Sierota, ²E Adamkiewicz-Drozynska. ¹English Division Pediatric Oncology Circle, Medical University of Gdansk, Gdansk, Poland; ²Department of Pediatrics Oncology and Hematology, Medical University of Gdansk, Gdansk, Poland

10.1136/archdischild-2014-307384.305

Background Little is known about how children adapt to life after cancer and what factors influence this process.

Aim To investigate psychological and social aspects of life of paediatric cancer survivors (PCS).

Material and methods Questionnaire survey included 69 PCS (F/M 35/34; mean age 14 years), 2–6 years after oncologic treatment in Department of Paediatrics, Haematology and Oncology, Medical University of Gdansk, Poland. Data was categorised by gender and cancer type (leukaemia and lymphomas, LL-44 and solid tumours, ST-25).

Results 40% of PCS found adjusting to new life difficult. 67% of girls with ST admitted to depression and constant thinking and learning about disease. 40% of patients felt afraid of recurrence (mainly boys with ST) and avoided thinking and talking about it. Half of patients complained of unsatisfactory health. Patients with ST (24%) and after surgery (58%) reported the worst self-estimation, which was associated with visible sequelae of disease/therapy. Cosmetic evidences concerned mostly ST patients while functional-LL. Losing hair was problematic mainly for girls; 30% of PCS felt uglier/worse than peers. 40% of girls and of ST patients felt bullied and reported problems with meeting new people. Instead, PCS kept close contacts with other patients met in clinic. 70% of respondents planned to have children, but 65% of them feared they may also develop cancer.

Conclusions Adaptation to life after cancer is influenced by type of malignancy and gender and is particularly problematic in children with visible sequelae of disease/therapy. Psychological and social support of PCS is essential.

Adolescent Health

PS-010a **EFFECT OF TRAINING PROGRAMME ON HIGH SCHOOL TEACHERS' KNOWLEDGE AND ATTITUDE TOWARDS ADOLESCENT REPRODUCTIVE HEALTH EDUCATION IN RURAL SCHOOLS IN ILE-IFE, SW NIGERIA**

¹C Adegbenro, ²JD Adeniyi, ²AJ Ajuwon. ¹Community Health, Obafemi Awolowo University, Ile-Ife, Nigeria; ²Health Promotion and Education, University of Ibadan Ibadan, Ibadan, Nigeria

10.1136/archdischild-2014-307384.306

Aims Adolescents in Nigeria as in other Countries of the world are facing many reproductive Health problems nowadays which includes high rate of risky sexual activities, unintended pregnancy, abortion and STIs/HIV/AIDS. To address these problems, constant suggestions and recommendations have been made for the introduction of compulsory adolescent reproductive health education (ARHE) at all levels of educational institutions in Nigeria. Previous studies in Nigeria showed that teachers themselves had poor knowledge of and negative attitude towards ARHE. This study assessed the effect of training programme on teachers' knowledge and attitude towards ARHE in five

randomly selected rural schools in Ife- North local government area (IFLGA), SW Nigeria.

Methods All the 84 teachers in the selected schools in the LGA were voluntarily recruited for the study. They (84 Teachers) were all given training in ARHE for one month. Their knowledge and attitude towards ARHE was assessed pre- and post-training programme.

Results The results showed a significant increase in percentage of those who had good knowledge in general areas of ARHE at post- training assessment compared with pre- training assessment (from 14.3% to 53.6%, $p = 0.0001$). Also, pre-post attitudinal disposition assessments showed that there was an increase in percentage of those who were favourably disposed to the teaching of ARHE in Nigeria Schools at post- training assessment (from 17.9% to 45.2%, $p = 0.011$).

Conclusions The study suggests that teachers should be equipped in handling the teaching of ARHE in Nigeria schools.

Cardiac Function in the Neonate

PS-011 **QUANTITATIVE ASSESSMENT OF PRETERM LEFT VENTRICULAR ANATOMICAL DEVELOPMENT AND REMODELLING USING NEONATAL CARDIAC MRI AND ATLASING TECHNIQUES**

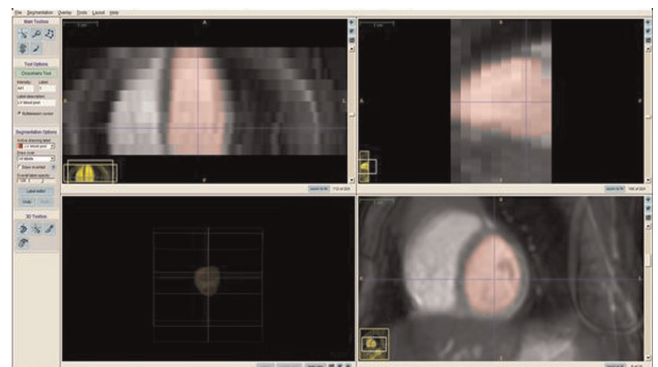
¹D Cox, ²W Bai, ¹AN Price, ¹AD Edwards, ³AM Groves, ²D Rueckert. ¹Centre for the Developing Brain, King's College London, London, UK; ²Department of Computing, Imperial College London, London, UK; ³Newborn Medicine, Weill Cornell Medical College, New York, USA

10.1136/archdischild-2014-307384.307

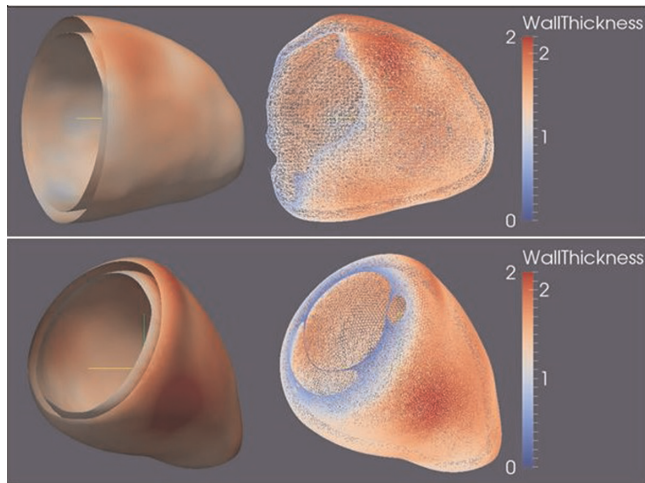
Background and aims Cardiac development and myocardial maturation continues through the third trimester of gestation. Moderately preterm birth at 30–36 weeks adversely affects long-term cardiovascular health and impacts left ventricular size and geometry at young adulthood.

We aim to quantify and characterise normal and pathological neonatal cardiac development using cardiac MRI and computational atlas construction.

Methods Preterm neonates and healthy term controls underwent neonatal 3 Tesla cardiac MRI. Data from short axis stack sequences was manually segmented at end-diastole (ITK-SNAP software) providing volumetric measurements of the left ventricular myocardium and blood pool. Sub-group analysis compared 10 preterm neonates born at 32–35 weeks, scanned within 7 days of birth and at term-corrected age, with 4 healthy term controls (39–42 weeks).



Abstract PS-011 Figure 1



Abstract PS-011 Figure 1

Results Weight-corrected left ventricular mass (LVM, g/kg) and end-diastolic volume (EDV, cm³/kg) for the preterm cohort at term-corrected age (LVM - mean 1.89, 95% CI 1.89 ± 0.21; EDV - mean 3.42, 95% CI 3.42 ± 0.34) were significantly greater than both the preterm cohort at birth (LVM 1.05, 1.05 ± 0.08, *p* = 0.0002; EDV 4.89, 4.89 ± 0.59, *p* = 0.0008) and healthy term controls (LVM 0.95, 0.95 ± 0.18, *p* = 0.001; EDV 2.16, 2.16 ± 0.38, *p* = 0.0006).

Conclusions Neonatal MRI with manual ventricular segmentation quantifies preterm gross ex-utero left ventricular growth, highlighting differences from in-utero cardiac development. Increases in preterm LVM and EDV may represent pathological remodelling or physiological ex-utero adaptation.

We have constructed provisional computational atlases that currently allow visual comparisons of size and shape, but which after further analysis will enable more sophisticated quantification and characterisation of preterm ventricular growth and remodelling.

PS-012 LEFT HEART STRUCTURE AND FUNCTION IN 6-YEAR-OLD CHILDREN BORN EXTREMELY PRETERM

¹L Mohlkert, ²O Broberg, ³M Hellström, ⁴C Pegelow Halvorsen, ⁵J Hallberg, ⁶G Sjöberg, ⁶A Edstedt Bonamy, ²V Fellman, ⁷M Domellöf, ⁸M Norman. ¹Department of Clinical Science Intervention and Technology, Karolinska Institutet, Stockholm, Sweden; ²Department of Pediatrics, Lund University, Lund, Sweden; ³Department of Physiology, Umeå University, Umeå, Sweden; ⁴Department of Clinical Science and Education Södersjukhuset, Karolinska Institutet, Stockholm, Sweden; ⁵Institute of Environmental Medicine, Karolinska Institutet, Stockholm, Sweden; ⁶Department of Women's and Children's Health, Karolinska Institutet, Stockholm, Sweden; ⁷Department of Clinical Sciences, Umeå University, Umeå, Sweden; ⁸Department of Clinical Science, Karolinska Institutet, Stockholm, Sweden

10.1136/archdischild-2014-307384.308

Background and aim Preterm birth has been associated with myocardial remodelling, arrested vascular growth, higher blood pressure and ventricular hypertrophy later in life. The aim of this study was to evaluate left heart structure and function in 6-year-old children born extremely preterm.

Method Children born extremely preterm (EXP; <27 weeks of gestation) in Sweden 2004 to 2007 and matched controls born at term were included. Left ventricular mass index (LVMI), left

ventricular end diastolic diameter (LVED) and fractional shortening (FS) were determined by echocardiography. Blood pressure, weight and height were also measured.

Results EXP-children (*n* = 88; mean GA 25.1 w; BW 817 g) were significantly shorter than controls (mean heights 117.8 and 122.8 cm, *p* < 0.001). LVMI was 72.1 g/m² in EXP and 79.6 g/m² in controls (*p* < 0.01). LVED in EXP was (43.8 mm/m²) and in controls (42.3 mm/m²; *p* < 0.05), unadjusted EXP (35.9 mm) and controls (38.7 mm: *p* < 0.001). FS was 36% in EXP and 35% in controls (n.s). Unadjusted systolic blood pressure was 2.2 mmHg lower in EXP compared to controls (*p* < 0.05) but this difference disappeared after taking length into account.

Conclusion Although the shape of the heart differed (larger LVED in EXP), there was no left ventricular hypertrophy or other obvious signs of myocardial dysfunction in 6-year-old children born extremely preterm as compared to age-matched controls born at term. Further cardiac follow-up at older age is warranted and analyses of myocardial strain using two dimensional speckle tracking are underway.

PS-013 ARTERIAL-VENTRICULAR COUPLING IN PRETERM INFANTS BELOW 30 WEEKS OF GESTATIONAL AGE

¹S Baumgartner, ¹M Steiner, ¹M Olischar, ²M Wald, ¹A Berger, ³G Fischer, ⁴T Waldhör, ¹U Salzer-Muhar. ¹Department of Pediatrics and Adolescent Medicine, Medical University of Vienna, Vienna, Austria; ²Department of Pediatrics and Adolescent Medicine, Salzburger Landeskliniken/Paracelsus Medical University, Salzburg, Austria; ³Section for Medical Information Management and Imaging, Medical University of Vienna, Vienna, Austria; ⁴Department of Epidemiology, Medical University of Vienna, Vienna, Austria

10.1136/archdischild-2014-307384.309

Background and aim The model of arterial-ventricular coupling (AVC) describes the interaction of the left ventricle (*E*_{LV}) with the arterial system (*E*_A) by the AVC-ratio (AVC = *E*_A/*E*_{LV}). Aim was to apply the model to preterm haemodynamics and to analyse time courses of AVC, *E*_A and *E*_{LV} in sick preterms with either pulmonary hypertension (PH-group) or haemodynamically significant patent ductus arteriosus (hPDA-group) and in stable preterms with uncomplicated postpartal course (control-group).

Methods Study period was from 10/2009 to 12/2012. Patient recruitment criteria were as follows: anti-PH treatment due to (supra-) systemic pulmonary pressure on echocardiography (PH-group); presence of PDA with an enddiastolic maximal velocity in the left pulmonary artery (LPAdia) ≥ 0,2 m/s and negative history of PH (hPDA-group); neither anti-PH treatment nor catecholamines, PDA with an LPAdia < 0,2 m/s and a ratio of the left atrium/aorta < 1,4 (control-group). AVC was calculated from blood pressure and M-mode measurements. Selected time points were set from days 1–3, 4–7 and 8–30 respectively.

Results Twentyone preterms were recruited to the PH-group, 19 to the hPDA-group and 63 to the control-group. AVC was lower in the PH- and hPDA-group than in the control-group (*p* = 0,05). *E*_{LV} was higher in the PH-group (*p* = 0,007) and both *E*_A and *E*_{LV} were lower in the hPDA-group (*E*_A: *p* = 0,0002; *E*_{LV}: *p* = 0,02).

Conclusion The AVC-ratio was lower in sick preterms. Higher *E*_{LV} in PH results from interventricular interdependence with decreased LV-filling. Lower *E*_{LV} and *E*_A in PDA result from LV-volume-overload and systemic steal-effect. Applying the AVC-model may facilitate explaining preterm haemodynamics.