Conclusion Although our numbers are small, the incidence of complications during pregnancy or immediately post partum are similar to those that we quote to our patients. Pregnant and post partum women complaining of severe chest pain should be brought to the immediate attention of senior staff and investigated urgently.

74 NON-INVASIVE ASSESSMENT OF PULMONARY HAEMODYNAMICS IN FONTAN PATIENTS

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Introduction The Fontan circulation relies on a low pulmonary vascular resistance. At present the gold standard method of measuring this is with invasive cardiac catheterisation which can be difficult in this group. Previous work has shown that pulmonary vascular resistance is inversely correlated with pulmonary capacitance which can be approximated non-invasively using data derived from a maximal cardiopulmonary exercise test (CPEX). We have determined the non-invasive pulmonary artery capacitance (Ventilatory Product) in a large cohort of adult Fontan patients.

Methods 220 patients under regular follow up at University Hospital Birmingham were identified and CPEX results were available for 131 patients. We subdivided these into two groups, those with an atriopulmonary Fontan (AP) and combined those with lateral tunnel and total cavo-pulmonary connexion (TCPC). Parameters obtained were: NYHA functional class, maximum workload, ventilatory product, peak oxygen consumption, peak end tidal CO_2 and VE/VCO_2 slope.

Results 77 patients with TCPC/lateral tunnel versus 54 AP Fontan were included. In the AP Fontan group, mean ventilatory product correlated positively with pVO2 (r^2=0.344) and maximum workload (r^2=0.515) and negatively with VE/VCO_2 slope (r^2=-–0.366). In the combined TCPC/lateral tunnel Fontan group, mean ventilatory product correlated positively with pV02 (r^2=0.484) and maximum workload (r^2=0.485) and negatively with VE/VCO_2 slope (r^2=-0.127). When determined for each functional class ventilatory product was as follows in TCPC/lateral tunnel group: NYHA I 355.8 +/-±100, NYHA II 272.14 ± 105, NYHA III 241.76 ± 90.3. In the AP Fontan group mean ventilatory product was as follows: NYHA I 349.2 ± 131.8, NYHA II 271.5 121.5, NYHA III 273.9 +/- 140.6. The mean VO2 peak was significantly higher in the combined TCPC/lateral tunnel group (26.64 vs 20.56, p = 0.00). Further sub analysis within each functional class between both groups also showed statistical significance. TCPC/lateral NYHA class I mean V02 peak 29.56 vs 25.11 vs (p = 0.01), class II mean V02 peak 22.72 vs 18 (p = 0.038) and class III mean 22.14 vs 15.31 (p = 0.018).

Discussion Invasive measurements of PVR are difficult in the Fontan patient. We have demonstrated that a non-invasive indirect measurement of pulmonary artery capacitance -the ventilatory product, correlates with measures of performance, and negatively correlates with VE/VCO_2, which is known to be of prognostic significance in heart failure. Furthermore our data shows that ventilatory product falls with increasing functional class. From this, we propose that the ventilatory product may be used to identify Fontan patients suitable for pulmonary vasodilator therapy. Our hypothesis however will require testing in prospective studies of pulmonary vasodilator therapy in Fontan patients.

75 THE BURDEN OF AF AND STROKE IN ADULT CONGENITAL HEART DISEASE

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Introduction Atrial arrhythmias are strongly associated with thromboembolism with 1 in 5 strokes being attributed to atrial fibrillation (AF). Patients with adult congenital heart disease (ACHD) are at an increased risk of developing atrial arrhythmias compared to those with structurally normal hearts either due to the inherent cardiac anomaly or due to scar formation from surgery. The CHA_2DS_2VASC score is validated for stroke risk stratification for those with acquired heart disease. Its role in adult congenital heart disease however, is unclear.

Methods A retrospective review of the electronic ACHD database of all patients at a large quaternary specialist ACHD Centre with approximately 4500 patients under regular follow up. Data spanned from year 2000–2015 and data collected from referral letters, clinic letters, ECG and echocardiograms.

Results 376 patients with atrial arrhythmias were identified. Mean age was 57.7 ± 15.8 years with 51% female. 88 (23%) of patients had complex disease (including those with a Fontan circulation) with the remainder having simple or moderate forms of congenital heart disease. In this cohort, 52 (13.8%) patients had at least one thrombo-embolic event with 77% being either transient ischaemic attacks or strokes. The remainder of events were embolic peripheral artery occlusions, deep vein thromboses and pulmonary emboli. The mean age of first occurrence of thromboembolic event was 44.2 ± 19 years and mean CHA_2DS_2VASC score was 1.04 ± 0.7 prior to the event. In 46% of cases the thromboembolic event occurred after the atrial arrhythmia had been diagnosed and 71% of patients were not anticoagulated at the time of their first event. Of those patients anticoagulated at the time of their event (n = 9), 2 patients had a documented subtherapeutic INR, 2 were non-compliant with their medication and 1 was on a Novel Oral Anticoagulant (NOAC). It was unclear in 11% of cases whether they were anticoagulated before the event. 88% of patients with a CHA_2DS_2VASC score of 2 or more were anticoagulated, with 93% on warfarin and 5% on NOACs and 2% on low molecular weight heparin. Of those with a CHA_2DS_2VASC score of 0–1, 74% were on either warfarin or a NOAC. There were 4 known deaths from complications related to anticoagulation (2 gastrointestinal bleeds and 2 from massive haemoptysis).

Discussion Atrial arrhythmias are common in ACHD and there is a high incidence of stroke in those with AF. In those groups with higher incidence of AF, loop recorders may be beneficial for detecting asymptomatic disease. The CHA_2DS_2-VASC scoring system does not appear to be applicable for stroke risk stratification in ACHD. The mean pre- event CHA_2DS_2VASC was 1. Another marker for patients with

ACHD is required to differentiate low risk from high risk patients. The role of NOACs in this group of patients is unclear and needs further evidence. 1 patient had a stroke on a NOAC despite being compliant.

Stable IHD/Prevention/Hypertension/Lipids

76 PROPHYLAXIS OF VENOUS THROMBOEMBOLISM: ENSURING APPROPRIATE PRESCRIBING AND RELIABLE DATA COLLECTION

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Background Venous thromboembolism (VTE) is the most common preventable cause of death with safe and effective prevention measures available. Inpatients at high risk for VTE often fail to be provided prophylaxis despite clear guidelines and this mismatch between VTE prophylaxis and thromboembolic risk is a major issue for clinicians. We sought to clarify compliance of practice with the NICE quality standard and to assess accuracy of the Commissioning for Quality and Innovation (CQUIN) VTE form.

Methods A point prevalence study was performed involving a comprehensive review of 100 consecutive patients at Barnet Hospital. We assessed compliance against the NICE guideline 92 by ensuring appropriate assessment of VTE and bleeding risk, clarifying that those where the VTE risk outweighs the bleeding risk are offered prophylaxis. We also assessed the accuracy of VTE risk assessment form completion using validated bleeding risk (HASBLED) and VTE risk (Wells) scores. We implemented technical improvements in the VTE risk assessment form; medical education through mandatory completion of VTE eLearning modules; and involvement of the MDT through grand round discussions. Following implementation, a reaudit of 50 patients was performed.

Results In 100 patients assessed, mean age was 71 years, 55 were male, with mean weight 74.8kg; see Table 1. Based on the drug chart, VTE prophylaxis was appropriately offered in 69% of patients; see Figure 1. The VTE risk assessment form was accurately completed in 57% for VTE risk status, in 69% for bleeding risk, and in 69% for VTE prophylaxis prescribed. After implementations, the reaudit revealed VTE prophylaxis was appropriate in 88%, VTE risk assessment form was accurate in 78% for VTE risk status, 90% for bleeding risk, and 89% for VTE prophylaxis prescribed. The section of the drug chart devoted to VTE risk assessment was poorly utilised; 21% in the initial audit and 18% in the reaudit.

Conclusion Whilst single centre and modest in size, this robust, complete audit demonstrated compliance with VTE prophylaxis guidelines was poor, for both risk assessment and appropriate prescribing. Technical improvements to the VTE form, educating trainees and involving the MDT significantly improved compliance with guidelines. Future work is required to overcome accuracy issues of form completion ensuring patients receive optimal care.

Abstract 76 Table 1 Characteristics of the participants by initial audit and reaudit

Baseline Characteristic	Initial Audit	Reaudit
N	100	50
Mean Age (years) ± SD	71 ± 18	72 ± 19
Male (%)	55	36
Body Weight (kg)	74.8	72.9
Atrial Fibrillation(%)	18	20
Heart Failur (e%)	12	18
Hypertension(%)	47	26
Diabetes (%)	25	10
Chronic Kidney Disease%	18	16

SD, standard deviation

77 IMPACT OF CARDIOVASCULAR COMORBIDITIES ON MORTALITY AMONGST PSYCHIATRIC PATIENTS IN THE UNITED KINGDOM

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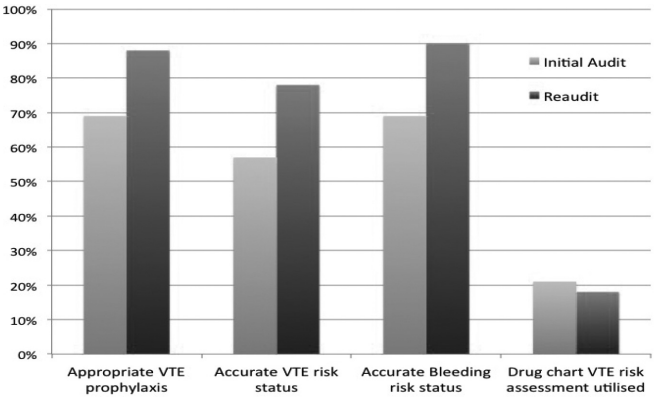
Introduction Cardiovascular disease is increasingly being associated with novel risk factors including psychiatric diseases. Although a high prevalence of cardiovascular comorbidities has been demonstrated in psychiatric patients, the impact of these on mortality are yet to be studied.

Objectives We aimed to investigate the prevalence of cardiovascular comorbidities and their contribution to mortality amongst psychiatric patient in North England, UK.

Methods Anonymous information on adult psychiatric patients was obtained from hospitals in North England, UK between 1st January 2000 and 31st March 2013. This data was analysed according to the ACALM (Algorithm for Comorbidities, Associations, Length of stay and Mortality) study protocol. ICD-10 and OPCS-4 codes were used to trace patients coded for psychiatric disease, demographics, prevalence of cardiovascular comorbidities and mortality data. Mortality of psychiatric patients with and without cardiovascular comorbidities were



Abstract 76 Figure 1