Results A total of 2150 echocardiograms were analysed over the 18 months. The median age of our cohort was 69 years (22 - 94). 66% of our patients were males and 34% females. 146 patients were found to have aortic dilatation. Therefore, the incidence of aortic dilatation was 6.8% in our study population.

Conclusion The incidence of aortic dilatation in our hospital population of 6.8% was significantly higher than we expected. It is a staggering 1000 fold increase when compared to current literature surrounding the incidence of aortic aneurysm which is the possible end point of aortic dilatation(1,2). Based on the incidence established in this study, our hospital alone would have at least 400 patients with a dilated aorta in a year. Due to the potential detrimental prognosis of aortic dilatation, further investigations are certainly warranted to identify risk factors related to the development and progression of aortic dilatation as well as the pattern of progression.

REFERENCES

Conflict of Interest Nil

130 USING SMARTPHONE APPLICATIONS TO TARGET POOR CARDIAC MEDICATION ADHERANCE
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Statement of the Problem The ORBITA trial [1] has shown that severe coronary stenosis patients undergoing percutaneous coronary intervention did not show a significant difference in symptom relief. Thus, focus is shifting to medication for long-term symptomatic relief, primarily aspirin, statins, clopidogrel, anti-anginal and anti-hypertensives [2]. Current research [3, 4] shows that approximately 50% of patients with cardiovascular disease have poor adherence to their medications, costing the NHS £300 million annually. Our aim was therefore to develop an innovative method to increase patient’s adherence to their cardiovascular medication.

Methodology Research was carried out into the main barriers to taking medications, and these were identified as forgetfulness; misinformation on the drug’s side effects and lack of motivation to take medication due to perspectives on efficacy of medication. An initial survey on patients showed that 96% of respondents used a smartphone regularly, enforcing our decision to create an app. Microsoft PowerPoint was used to create the prototype with sections on information on drugs they were taking, an interactive quiz, a calendar selection and a rewards section. Initial patient opinion was then gauged at a focus group of patients participating in the ORBITA trial (n=10) and based on constructive feedback given, improvements were made. The app was then tested on the cardiac ward at Hammer smith hospital where patients (n=14) filled in questionnaires on various adherence parameters before and after using the app. Data was then analysed using Mann-Whitney-U tests and compared.

The app prototype: The app contains 4 main sections which aim to increase drug adherence. The drug information section gives concise overviews of the major classes of cardiovascular medications with information on coping with side effects. The quiz section tests uses drug-specific questions that highlight the efficacy and the low frequency of the side effects of each medication. The calendar section outlines the user’s drug regimen with push notifications for reminders to take medications. Tick boxes are used to monitor adherence and can be cashed in for rewards.

Results The app enabled certain barriers to adherence to be overcome with patients showing a significant decrease in concern over perceived side effects (p<0.001), and a significant improvement in understanding of prescribed medication (p<0.01). 83% of patients said the app would help them to remember to take their medication.

Conclusion Significance: As importance is shifting away from invasive procedures to pharmacological therapy in these patients, more needs to be done to ensure better drug adherence to increase both patient’s medical well being, and cost-effectiveness in reducing medical waste. Smartphone applications, such as the prototype developed, offer a new innovative way for patients to engage and be proactive with their healthcare. They enable patients to have a greater understanding of their conditions and the medications they are taking, ultimately increase patient adherence.

Conflict of Interest none

131 THE HYPERTENSIVE RESPONSE TO EXERCISE AND CARDIAC ABNORMALITIES IN MALE VETERAN ENDURANCE ATHLETES
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While the benefits of moderate regular exercise to overall health are irrefutable, there is a growing body of evidence to suggest that years of chronic endurance exercise may bear adverse cardiovascular consequences. A hypertensive response to exercise (HRE) has been correlated with adverse cardiovascular outcomes. We tested the hypothesis that the presence of a HRE in athletes who expose themselves to thousands of hours of endurance training may contribute to adverse structural and electrical cardiac remodelling, including pathological coronary calcification, myocardial fibrosis and ventricular arrhythmias.

Between 2013-2015, 152 asymptomatic endurance athletes (70% male) and 92 controls of similar age (median 52; range 40-82 years) were evaluated with ECG, echocardiogram, cardiopulmonary exercise testing (CPET), 24 hour Holter
monitoring, CT coronary angiography and cardiac MRI. Athletes with risk factors for coronary artery disease (CAD) were excluded. A HRE was defined as a peak systolic blood pressure during CPET of ≥220mmHg in males and ≥190mmHg in females. Data were analysed to evaluate for a significant relationship between the HRE and the presence of pathological coronary calcification (calcium score ≥70th Centile), myocardial fibrosis and ventricular tachycardia on 24hour Holter monitoring.

Over a third of athletes (36.8%) compared to only 7.6% of controls exhibited a HRE on CPET testing (p<0.001). Athletes with a HRE did not differ in age (median 52), sex distribution, number of years of endurance training or hours of training per week compared to athletes without a HRE. Of the athletes with a HRE, 17.8% had pathological coronary calcification compared to 19.8% of athletes without (p=0.83), 12.7% had pathological myocardial fibrosis compared to 9.3% without (p=0.59) and 11% had non-sustained VT compared to 5.4% without (p=0.21).

A hypertensive response to exercise is highly prevalent in veteran endurance athletes but present in only a minority of sedentary controls. The HRE, measured according to current methodology however, was not predictive for the presence of pathological coronary calcification, myocardial fibrosis or ventricular arrhythmias in this athlete cohort. Studies thus far are yet to explain the increased prevalence of such findings amongst veteran athletes or determine if such findings correspond to adverse cardiovascular events. Future studies should address these issues in order that evidence-based guidance for risk stratification and pre-participation screening of master athletes can be developed.

Conflict of Interest Nil