ORAL PRESENTATIONS 6A
VASCULAR (2)

O136 HIGH RESOLUTION MAGIC-ANGLE-SPINNING NUCLEAR MAGNETIC RESONANCE (HR MAS-NMR) SPECTROMETRIC IDENTIFICATION OF BIOMARKERS OF ATHEROSCLEROSIS IN THE APOLIPOPROTEIN-E KNOCKOUT MICE PLAQUES (INTACT SOLID TISSUES)

P Abdulhannan (1,2), S Saha (1), N Yuldasheva (1), S Wheatcroft (1), D Russell (1,3), S Homer-Vanniasinkam (1,3), J Fisher (2)
(1) University of Leeds, The Leeds Institute of Cardiovascular and Metabolic Medicine (LICAMM), (2) School of Chemistry, University of Leeds, (3) Leeds Vascular Institute, Leeds General Infirmary

Introduction: Atherosclerosis is still one of the principal causes of death in the western world and is increasingly involved in the aetiology of cardiovascular diseases worldwide. Recent studies using animal models have suggested that NMR spectroscopy can be used to determine differences in tissue metabolite profiles of subjects with and without atherosclerosis. In doing so, new atherosclerotic biomarkers may be established

Method: 5 Apolipoprotein-E (Apo-E) knockout mice versus 5 controls, all male, were used for this study. All animals were fed western diet for 12 weeks. The housing and care of the animals, and all the procedures used in this study, were in accordance with the UK Home Office regulations. Plaques from the Brachiocephalic artery were used for metabolic profiling using a Bruker 500MHz 1D HR-MAS NMR spectroscopy with Carr-Purcell-Meiboom-Gill (CPMG) sequence. Spectral analysis was performed using multivariate analysis techniques.

Result: Median weight of Apo-E knockout mice was 29.7g (range 27-33.6g) versus 39.98g (range 36.4-45.5g) for the controls. Early analysis demonstrated that the two groups could be differentiate on the basis of their NMR spectra. A few potential plasma metabolite biomarkers of atherosclerosis were identified. Further work is ongoing to establish the precise nature of these biomarkers.

Conclusion: Solid status metabolic profiling using NMR spectrometry has not been fully explored. This preliminary data adds to the current evidence to determine links between components of the metabolome and atherosclerosis and further support the concept that NMR based metabolic profiling may offer a non-invasive test for detecting biomarkers of atherosclerosis.

Take-home message:
Metabolic profiling of solid tissues has shown promising results in identifying atherosclerosis biomarkers.

0137 DROPOUT RATES OF WOMEN FROM ABDOMINAL AORTIC ANEURYSM SCREENING

A Thatcher, T Parkin, A Saratzis, D Sidloff, MJ Bown
Department of Cardiovascular Sciences and Leicester NIHR Cardiovascular Biomedical Research Unit, University of Leicester

Introduction: Abdominal Aortic Aneurysms (AAAs) occur more frequently in men, and consequently national screening is only offered to men over 65 years. However, currently 35% of deaths from AAA ruptures occur in women. Subsequently, women may also benefit from AAA screening. To help evaluate the cost-effectiveness of screening women for an AAA it is necessary to compare dropout rates of women with those of men in current AAA screening programmes.

Method: Records of men and women attending a single AAA screening unit from 2014 to present day were collected and reasons for leaving surveillance were recorded. Those in the national screening programme (NAAASP) were removed as women are not offered AAA screening as part of NAAASP.

Result: 353 men and 81 women were in screening from 2014 until 2015 (mean ages 76 and 79 years respectively). During that period, 26% of men had dropped out compared to 29% of women (p=0.616). More women left surveillance for valid reasons than men (79% versus 71% respectively, p=0.597).

Conclusion: Women are not more likely to drop out of AAA surveillance once they have entered screening. As a result, routinely offering women AAA screening may be justified. Further high quality research is necessary to define the contemporary role of AAA screening in women in the UK before it is adopted on a nationwide scale.

Take-home message:
In this study women were not more likely to drop out of AAA surveillance than men, so research into screening women for AAA need not be derailed.

O138 CHALLENGES IN THE MANAGEMENT OF SPLENIC ARTERY ANEURYSMS

M Desai, A Rolls, G Hamilton, DM Baker
Royal Free London NHS Foundation Trust / University College London

Introduction: Natural history of splenic artery aneurysms (SAAs) remains poorly delineated. Our objective was to review our experience with SAAs over a 10-year interval.

Method: Between February 2006 and January 2015, 30 patients with SAAs were evaluated for intervention by open or endovascular surgery (>2.0cm threshold). Medical database and imaging were reviewed. Statistical analyses used Fisher's exact test for categorical data and t-test for continuous variables.

Result: Thirty patients (63±13 years, 57% females) had abdominal symptoms (10%) the majority were incidental (90%), with no ruptures . Duplex ultrasound was limited by poor views (sensitivity 10%).

Twelve underwent endovascular treatment (coils, plugs), while 18 underwent serial observation with no interval ruptures. Patients requiring endovascular treatment trended to be younger (58 vs. 66 years, P=0.051), but gender distribution and risk factors were not significantly different. Mean aneurysm size at diagnosis was 17.4 mm for observation group and 24.8 mm for endovascular group (P =0.003). Primary and secondary technical success rates were 83% (2 failed primary access) and 100% respectively. Two (17%) developed splenic infarction with abscess needing drainage. There was no procedural or late aneurysm-related mortality with mean followup of 20 months and no patient required open repair.

Conclusion: Large SAAs can safely undergo endovascular treatment with no need for open repair; access can be challenging with a small risk of splenic infarction. Smaller SAAs (<2 cm) grow slowly, carry a negligible rupture risk and surveillance is justified . Duplex has a limited role and MRA should be the preferred investigation for surveillance.

Take-home message:
Incidental splenic artery aneurysms are increasingly recognised by widespread use of imaging. MR angiogram is preferred modality for surveillance of small aneurysms (<2 cm size) and endovascular therapy is highly effective for optimum treatment of large aneurysms.

O139   VENOUS THROMBOEMBOLISM RISK ASSESSMENT PRIOR TO SUPERFICIAL VENOUS DISEASE INTERVENTION – WHAT'S THE SCORE?

S Onida, R Bootun, Y Grant, J Shalhoub, AH Davies
Imperial College London

Introduction: Venous Thromboembolism (VTE) is a major cause of preventable hospital death. Risk factors are routinely assessed on admission to quantify VTE risk and determine appropriate thromboprophylaxis. The Department of Health (DoH) and Caprini scores are widely used for this purpose in the UK and US, respectively. The aim of our study was to compare VTE risk stratification by these tools in individuals undergoing venous disease interventions.

Method: Prospective cohort study of consecutive patients attending for day-case superficial venous disease procedures at a single centre. Patients were stratified according to the DoH (low/medium/high) and Caprini (low/medium/high/highest) risk scores.

Result: 89 patients (57% female) were included. Most common risk factors identified by DoH score were: comorbidities (34%) and BMI >30 (22.5%). Caprini score identified minor surgery (100%), presence of varicose veins (94.4%) and BMI >25 (56%). The pre-procedural risk distribution using the DoH score was: 29% (26/89) low, 33% (29/89) medium and 38% (34/89) high. Low 4.5% (4/89), medium 37% (33/89), high 49.5% (44/89), highest 9% (8/89) risk scores were obtained using the Caprini score. The measure of agreement between the two scores was fair (0.336 Cohen's Kappa Statistic, p<0.05). According to the DoH guidelines, 71% of the cohort qualified for pharmacological thromboprophylaxis, compared to 95.5% of the Caprini risk-assessed patients.

Conclusion: The DoH and Caprini assessment scores have significant differences in risk stratification of patients undergoing venous disease interventions. The impact of this difference and the role of these scoring systems in this patient cohort need further evaluation.

Take-home message:
Pre-operative venous thromboembolism risk assessment scores have significant differences in risk stratification of patients undergoing intervention for superficial venous disease, with a potential impact on the choice of thromboprophylaxis.

O140   DETERMINATION OF FACTORS CONTRIBUTING TO ATHEROSCLEROTIC DISEASE PROGRESSION IN PATIENTS WITH SYMPTOMATIC PERIPHERAL ARTERIAL DISEASE

L Zieliński, MM Chowdhury, BP Worsfold, JR Boyle, PD Hayes, PA Coughlin
Department of Vascular Surgery, Cambridge University Hospital Trust

Introduction: Epidemiological studies suggest 25% of patients with symptomatic peripheral arterial disease (PAD) will deteriorate. Such studies are becoming historic given changes in the incidence in associated disease states and improvement in best medical therapy. An ability to predict PAD progression would identify a high-risk group who would benefit from targeted intensive best medical therapy.

Method: A cohort of 215 patients who underwent repeated duplex imaging of the femoropopliteal segment (>6 month interval) were examined. Only patients with no intervening arterial treatment were included. Atherosclerotic burden was determined using the Bollinger system. Overall change in total Bollinger score over time was determined with patients divided into Group1: positive change in score, Group 2: no change / regression. Patient demographics, co-morbidities and long term outcomes were collated. Statistical analysis: multiple regression analyses.

Result: Group 1 : 82 patients, average age 75 years (76% male); Group 2: 133 patients, average age 69 years (69% male). Patients in group 1 were more likely to have a history of IHD (p=0.046), hypertension (p=0.006) and had a higher mortality rate (p=0.010). Patients in group 2 had higher numbers of patients taking antiplatelet therapy (p=0.017) and ACE-inhibitors (p=0.012). No significant differences were seen with regard to cerebrovascular disease, diabetes mellitus or statin use (p>0.05).

Conclusion: We have identified a cohort of patients with more progressive atherosclerotic disease. Not

all cardiovascular risk factors seem to contribute to this. Such identification of at risk patients will enable a more targeted approach to management of cardiovascular risk.

Take-home message:
Identification of at-risk patients will enable a more targeted approach to management of cardiovascular risk

O141   CARDIOVASCULAR RISK PROFILE AND MANAGEMENT OF RISK FACTORS IN PATIENTS WITH SMALL ABDOMINAL AORTIC ANEURYSM

MF Bath, A Saratzis, D Sidloff, RD Sayers, MJ Bown
Department of Cardiovascular Sciences and Leicester NIHR Cardiovascular Biomedical Research Unit, University of Leicester

Introduction: Patients with an abdominal aortic aneurysm (AAA) are at significant risk of cardiovascular (CV) events, regardless of aortic-size. We aimed to assess the CV-risk profile of patients with a small AAA, following introduction of the NHS AAA Screening Programme (NAAASP), and assess whether adequate CV-protection is offered to this population after AAA-detection.

Method: Cardiovascular profiles of 384 males (mean age: 72 years; mean AAA diameter 3.8cm) with a small-AAA participating in the "UK Aneurysm Growth Study" (UKAGS) were assessed. A separate regional audit was performed, including 142 patients (92% males, mean age: 72 years) with a small AAA who were referred to a vascular-clinic and had CV risk-factors assessed at baseline and after 1-year.

Result: A significant number of individuals were ex or current smokers (84.1% for UKAGS and 94.4% for the audit-population) and 91% had at least one major CV-risk factor at baseline. However, after AAA detection, only 44% of participants were on aspirin, 6.2% on clopidogrel, and 61% on a statin. Compared to baseline, there was no increase in the proportion of patients receiving cardioprotective-medication after one or more surveillance appointments (p=0.83). In the audit group there was an increase in average cholesterol (4.0mmol versus 4.2mmol, p<0.0001) and blood-pressure values a year after AAA-detection. Framingham 5-year predicted-risk (22% versus 23%) and JBS-2 (16% versus 17%) predicted-risk of CV-events did not differ a year after the AAA was detected.

Conclusion: Patients with a small AAA are at significant risk of CV-events; current strategies for CV-protection are inadequate.

Take-home message:
Patients with a small aortic aneurysms are at significant risk of developing cardiovascular morbidity. This is currently not being addressed adequately.