

ABSTRACTS

VS ASM 2022 Prize/Highest Scoring Abstracts

The Vascular Societies' Annual Scientific Meeting 2022, in conjunction with the VSGBI, BACPAR, SVN and SVT, took place at the Hilton Brighton Metropole, on the 23rd-25th November 2022. Here are the 2023 prize/highest scoring abstracts.

VS - Sol Cohen Prize

VO46 – The Limb-related Complications of Injecting Drug Use and the Collateral Consequences for Vascular Surgery: The East of Scotland Experience, a Nine-year Retrospective Cohort

MacLeod C^{1,2}, O'Neill H¹, Flett M¹, Guthrie G¹, Khan F², Radley A^{2,3}, Nagy J¹, Suttie S¹

¹East of Scotland Vascular Network (ESVN), NHS Tayside, ²School of Medicine, University of Dundee, ³Directorate of Public Health, NHS Tayside

The UK has one the highest rates of illicit drug use in Europe. People who inject drugs (PWID) are at risk of a range of injecting-related infections and injuries that can threaten life and limb. This study aimed to characterise the limb-related complications of injecting drug use.

Retrospective data collection between 01/12/2011-31/12/2020. Patients were identified through discharge codes and a prospective vascular operative database. Demographic and admission details were extracted from electronic records and a database created. Two diagnoses could be recorded, reflecting the realities of clinical practice.

There were 805 admissions for 445 patients (1-10 admissions/patient): mean age 37.5 (21.2-61.5) years and 488 (60.6%; 277

patients, 62.2%) were male. Admissions were generated by: 333 groin abscesses; 75 other abscesses; 109 pseudoaneurysms; 126 necrotising soft tissue infections; 137 cellulitis cases; 168 deep venous thromboses (DVT); 59 infected DVTs and 138 other pathologies. Surgical specialties managed 570 (70.8%) admissions, with vascular surgery managing 412 (51.2%; 72.3% of all surgical admissions). Surgery was required for 409 admissions (50.8%), with 534 operations performed (1-7/ admission). There were 31 lower limb amputations. During follow-up 97 (21.8%) patients died, mean age 43.6 (26.8-62.8).

Limb-related complications of injecting drug use represent a substantial burden for vascular surgery.

VS - BJS Prize

VO59 – Repair for Infra-renal Aortic Abdominal Aortic Aneurysms, a Nationwide Study

Pouncey A¹, Nicola M¹, Martin G¹, Bicknell C¹, Powell J¹

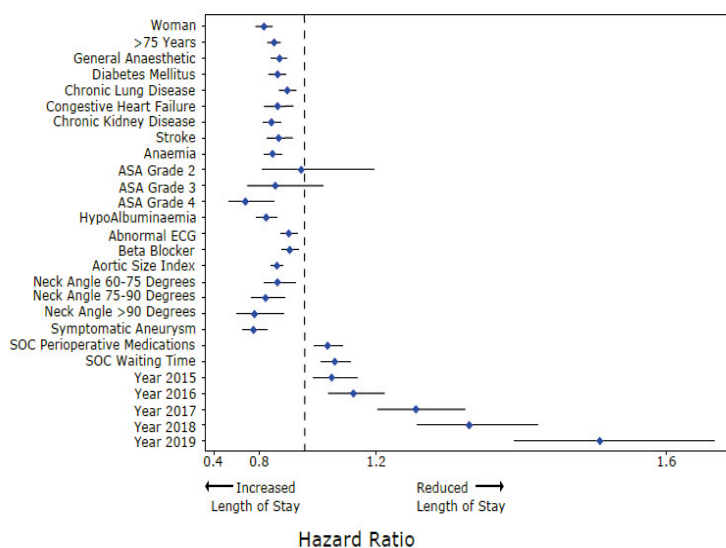
¹Imperial College London

Introduction

Length of hospital stay (LOS) for endovascular infra-renal abdominal aortic aneurysm repair (EVAR), is a major driver of cost and reported to be longer for women. This study investigates drivers of LOS and why women stay longer for EVAR.

Methods

Examination of National Vascular Registry elective EVAR patients, 2014-2020. Survival analysis conducted, censoring for in-hospital death. Cox proportional hazard modelling utilised to assess sex-specific difference in LOS adjusting for age, co-morbidity, anaesthetic, year and standard-of-care.



Results

14,050 (12,518 men:1532 women) patients received elective EVAR. LOS was longer for women (restricted-mean 6.55 (standard error (SE)0.59) vs. 4.49 (SE0.12) days, $p<0.001$). Following multivariable adjustment, early hospital discharge remained less likely for women (Hazard Ratio (HR) 0.81, 95%CI:0.78-0.87). General anaesthetic (HR 0.89 (95%CI:0.86-0.93), age ≥ 75 years (HR 0.80, 95%CI 0.84-0.90), co-morbidity and anatomical complexity were associated with increased LOS. Treatment within

waiting-times and receipt of peri-operative antibiotics/thromboprophylaxis were associated with reduced LOS. Between 2014-2019 LOS reduced for both sexes (restricted-mean change -2.46 vs. -2.18 days; HR 1.54, 95%CI 1.44-1.64).

Conclusion

Women have increased LOS for EVAR, despite adjustment for co-morbidity, standard-of-care and advanced clinical practice. Identification of additional drivers of LOS for women is needed to facilitate fast-track pathways and improve quality-of-care.

VS - Poster Prize**P36 – Optimising secondary prevention in patients undergoing carotid intervention (CI) – A Single Centre Cohort Study**

Kwan J¹, Sood M¹, Stocco F¹, Bailey J¹, Coughlin P¹, Scott J¹

¹Leeds Vascular Institute

Background

Stroke/TIA patients should receive best medical therapy (BMT; antithrombotic therapy (ATT) and lipid lowering therapy (LLT)). This includes high-intensity statins (HIS), aiming for LDL-C <1.8 mmol/L. We explored BMT in patients undergoing CI on admission prior to intervention, at discharge, and 1 year post intervention.

Method

205 patients underwent CI (01/01/18–31/12/20). Differences between time points were assessed with McNemar test.

Results

There were 137 men (67%), median age 73 (CI: carotid endarterectomy $n=175$; carotid stent $n=30$).

Increases in prescription of ATT (50%vs96%, $p<0.001$), statins (65%vs93%, $p<0.001$) and HIS (47%vs83%, $p<0.001$) were

observed at discharge compared to pre-intervention but no differences were seen at 1 year. At 1 year, 8 patients were not taking statin therapy, 6 were allergic and 3 prescribed Ezetimibe.

At 1 year, there was significant improvement in median LDL-C (2.4mmol/L, IQR(1.9-3.3)vs.1.6mmol/L, (1.2-2.0), and proportion of patients achieving an LDL-C of <1.8 mmol/L (21%vs59%, $p=0.003$) compared to pre-admission. In patients with LDL-C ≥ 1.8 mmol/L, 92% had scope for LLT up-titration.

Conclusion

Patients undergoing carotid intervention receive appropriate BMT whilst in-patient. This led to improved lipid control in a substantial proportion. A minority fail to achieve recommended LDL-C targets. Reasons for this need to be understood to allow for optimal risk reduction.

VS - The Richard Wood Memorial Prize**VO82 – A single-centre retrospective hypothesis-generating study investigating Computed Tomography-based body composition metrics in a cohort of aortic aneurysm patients**

Koh A¹, Yang Q¹, Boshier P², Hanna L^{2,3}, Gibbs R^{2,3}

¹School of Medicine, Imperial College London, ²Department of Surgery and Cancer, Imperial College London, ³Imperial Vascular Unit, Imperial College Healthcare NHS Trust

Introduction

aortic aneurysms (AAA) remains unknown. This study explored the patterns of Computed Tomography-based body composition (CTBC) metrics in AAA patients, and their associations with outcomes.

Methods

We included 265 patients who received open or endovascular AAA repair from 2015 to 2020 at a single institution. Cross-sectional surface areas of skeletal muscle (SMI), intramuscular (IMAT),

visceral (VAT), and subcutaneous (SAT) adipose tissues at the L3 vertebral level were obtained from preoperative CT scans. Sarcopaenia was defined as SMI ≤ 38.5 cm² in women and ≤ 52.4 cm² in men. Outcomes included hospital length of stay, postoperative complications, and peri-operative mortality (in hospital or within 30 days).

Results

Sarcopaenic patients had less total adipose tissue ($p<0.001$), lower VAT/SAT ratios ($p=0.011$), and higher IMAT/SMI ratios ($p=0.002$).

Lower SMI was associated with peri-operative mortality ($p=0.011$). Peri-operative mortality was higher among female patients ($p=0.027$), who had higher IMAT ($p=0.017$) and IMAT/SMI ratios ($p<0.001$), and lower VAT/SAT ratios ($p<0.001$) compared to male patients.

Conclusions

Sarcopaenia is often accompanied by high IMAT and low VAT and is associated with peri-operative mortality. CTBC differences between men and women may contribute to different mortality rates.

	Sarcopaenic (n=203)	Non-sarcopaenic (n=62)	P-value	Male (n=228)	Female (n=37)	P-value
Age at operation (years)	76 (70 – 82)	70.065 ± 8.573	<0.001	74 (68 – 80)	77.4 ± 8.88	0.028
Sarcopaenic	–	–	–	175	28	0.837
Male sex	175/203	53/62	0.837	–	–	–
BMI (kg/m ²)	25.280 (22.885 – 27.787)	31.318 (28.775 – 33.840)	<0.001	26.510 (24.293 – 30.093)	22.430 (19.830 – 30.748)	0.007
Smoker	156	56	0.019	118	24	0.157
Hypertension	137	47	0.270	163	21	0.084
COPD	45	15	0.731	48	12	0.140
Ischaemic heart disease	64	25	0.220	82	7	0.059
Type 2 diabetes mellitus	31	8	0.830	36	3	0.317
Chronic kidney disease	26	11	0.402	32	5	1.000
Length of stay (days)	7.00 (4.00 – 12.00)	7.50 (4.00 – 9.25)	0.920	7.00 (4.00 – 12.00)	7.00 (3.00 – 11.00)	0.348
Complications	88	24	0.559	95	17	0.720
Perioperative mortality	17	2	0.260	13	6	0.034
SMI (cm ² /m ²)	–	–	–	45.118 (40.519 – 51.633)	34.468 ± 6.648	0.063
IMAT (cm ² /m ²)	5.641 (3.765 – 8.460)	5.467 (3.871 – 8.747)	0.832	5.262 (3.749 – 7.843)	6.956 (5.197 – 10.311)	0.017
VAT (cm ² /m ²)	48.210 (26.437 – 72.693)	80.386 (59.638 – 101.643)	<0.001	59.507 (38.661 – 81.273)	26.418 (18.262 – 55.692)	<0.001
SAT (cm ² /m ²)	43.963 (32.814 – 61.927)	63.380 (50.559 – 85.526)	<0.001	48.751 (35.384 – 66.645)	66.945 ± 40.380	0.106
IMAT:SMI ratio	0.130 (0.090 – 0.212)	0.103 (0.067 – 0.156)	0.002	0.118 (0.783 – 0.179)	0.208 (0.132 – 0.323)	<0.001
VAT:SAT ratio	1.007 (0.579 – 1.461)	1.249 (0.857 – 1.592)	0.011	1.167 (0.787 – 1.578)	0.472 (0.286 – 0.657)	<0.001
TAT (cm ² /m ²)	99.845 (69.883 – 133.160)	149.716 (123.055 – 181.583)	<0.001	115.030 (80.560 – 148.120)	100.605 ± 59.139	0.073
VAT:TAT ratio	0.487 ± 0.150	0.537 ± 0.131	0.020	0.526 ± 0.131	0.321 ± 0.112	0.205

Table 1: Demographic data of 265 patients with abdominal aortic aneurysms, divided by sarcopaenia status and sex. Sarcopaenia is defined as SMI ≤38.5cm² in women and ≤52.4cm² in men. Perioperative mortality is defined as any death in hospital or within 30 days postoperatively. Discrete data is analysed using a Fishers exact test. Continuous data is analysed by independent-samples T-test when parametric, or Mann-Whitney U test when nonparametric. BMI, body mass index. COPD, chronic obstructive pulmonary disease. SMI, skeletal muscle index. IMAT, intramuscular adipose tissue. VAT, visceral adipose tissue. SAT, subcutaneous adipose tissue. TAT, total adipose tissue which is the sum of VAT and SAT.

VS – Venous Prize

VO93 – Impact of the NHS Evidence Based Intervention Programme on access to NICE recommended Varicose Vein Treatment

Hitchman L¹, Mohamed A¹, Smith G¹, Pymer S¹, Chetter I¹, Forsyth J², Carradice D¹

¹Hull York Medical School, ²Leeds University Teaching Hospital NHS Trust

Background

A previous study demonstrated widespread non-compliance of Clinical Commissioning Group (CCG) policies with NICE guidelines leading to geographic variation in access to varicose vein treatment. The Evidence Based Intervention (EBI) programme aimed to improve care quality. This study assesses the impact of EBI.

Method

CCG policies were obtained before and after EBI and categorised by two independent reviewers into levels of compliance with NICE CG168 (green/amber/red). Hospital episode statistics were compared with the NICE commissioning model predictions.

Results

The number of green policies fell from 33.5%(64) to 28.8%(55) in

2019, amber policies increased from 55.5%(106) to 62.3%(119) and red policies remained static (8.9% (17) vs. 8.4%(16)). Over this period 7.3%(14) changed their policy to become fully compliant, but 33.0%(63) changed their policy to become less compliant. Common deviations were to restrict based on clinical severity 51.8%(99) or delay for conservative management 22.5%(43). Nationally the proportion of interventions performed fell from 43.6% to 37.5% of predicted levels, with an estimated loss in net health benefit of £174.6million.

Conclusion

The EBI programme is not associated with improvement in commissioning policy or unwarranted variation, with most patients remaining unable to access NICE recommended treatment in England prior to the SARS Cov-2 pandemic.

SVN - James Purdie Prize**NO4 – Use of Biodegradable Temporising Matrix (BTM) in vascular surgery**Harris L¹, Thapar A¹, Graham A¹, Emmanuel A¹, Mallick A¹¹Mid And South Essex NHS Trust**Introduction**

Open wounds over vascular grafts and bone commonly result in graft infection, osteomyelitis and subsequent amputation (1)(2). Traditionally these wounds would be left to heal by secondary intention +/- antibiotics, leading to prolonged treatment. NovoSorb Biodegradable Temporising Matrix (BTM) by PolyNovo is a synthetic polymer that can temporarily close the wound allowing for new tissue generation (3). We used BTM in 5 vascular patients for which conventional wound cover was not an option, a first in the UK.

Method

1. Exposed prosthetic graft
2. Exposed vein graft anastomosis
3. Open below knee amputation with bone exposure

4. Open transmetatarsal amputation with bone exposure
5. Post calcanectomy for osteomyelitis with exposed calcaneum

Results

Wounds ranged from surgical bypass wounds to amputation sites. In four cases the BTM integrated well into the wound bed by 6 weeks, covering the critical structures. In the one treatment failure the wound closed by secondary intention.

Conclusion

BTM provides a low-cost option for covering high risk structures, where flaps or grafts are not possible. The thickness of coverage is limited. Further analysis of application technique and patient selection criteria needs to be carried out as well as longer term outcomes.

SVT - Best Scientific Presentation**TO24 – A reflection of measuring and applying qualitative approaches to a Vascular Ultrasound Lab**Zakikhani N¹¹St Georges University Hospital

Throughout my experiences of working within healthcare, the processes and attention of measuring qualitative data in a clinical setting has taken a back seat when compared to the huge emphasis on quantitative approaches. For example, focus tends to favour on how many scans can be performed on an ultrasound machine per day rather than also assessing patient satisfaction and re-designing patient pathways to facilitate patient centred care.

Vascular sonographers are a vital cog in the patient pathway in assisting in the diagnosis of diseases. However should they wish, they can also play a major role in helping facilitate the qualitative

measures to improve patient care given their involvement in large webs of care and their patient facing roles.

This talk is a reflection of my application of qualitative aspects of healthcare through my learning on the Elizabeth Garrett Anderson Program (MSc Healthcare leadership). Topics of reflection include my experiences in the power of honest conversations, the importance of story telling to extract information, sub-conscious behaviours, perceptions, looking beyond the tip of the iceberg the and tools to help facilitate qualitative sciences in a Vascular Ultrasound Lab.

SVT - Best recently completed research presentation**TO13 – Transthoracic ultrasound evaluation of thoracic aortic aneurysms**Davey H^{1,2}, Enemosah I¹, Rogan C¹, Patel P¹, Patterson B¹¹University Hospital Southampton, ²Newcastle University**Background**

Thoracic aortic aneurysms (TAA) can be asymptomatic and life-threatening if they rupture. They are currently detected using computed tomography (CT) which is expensive and uses radiation. A previous study found that ultrasound has the potential to be used as a diagnostic modality for TAA. However, further validation of this methodology is required.

Methods

15 patients (9 with TAA and 6 controls) had a single ultrasound assessment of the thoracic aorta performed by a single vascular scientist. The maximum diameter at the ascending aorta, aortic arch, mid and distal descending thoracic aorta was measured and compared to diameters from a CT scan at thresholds of 35mm and 40mm.

Results

The thoracic aorta was visualised in all 15 patients. At 35mm, the sensitivity and specificity were 100% and 85% and at 40mm it was 78% and 100%. The Bland-Altman plot showed good agreement between ultrasound and CT measurements for the maximum diameter and at the aortic arch, mid and distal descending thoracic aorta.

Conclusion

There is good visualisation of the thoracic aorta using ultrasound with high sensitivity and specificity at both 35mm and 40mm. Results of this study suggest that ultrasound has a potential to be used to assess TAA.

SVT - Best research proposal**TO3 – An audit to determine whether patients receive two forms of carotid imaging pre-operatively when carotid endarterectomy (CEA) is being considered, in line with the European Society for Vascular Surgery (ESVS) 2017 Clinical Practice Guidelines.**

Alderson E¹

¹Cambridge University Hospitals NHS Foundation Trust

Introduction

The 2017 ESVS Clinical Practice guidelines state two forms of imaging are recommended pre-CEA; this can be a combination of duplex ultrasound (DUS), computed tomographic angiography and magnetic resonance angiography, or two DUS performed by different operators.

Methods

Data was collected retrospectively from the National Vascular Registry to identify patients who underwent CEA between January 2019-December 2021 (n=205). No exclusion criteria were applied. EPIC electronic patient record system was used to obtain relevant data from patients' files including: pre-CEA imaging modalities, complications, outcomes and patient demographics. Data will be analysed using descriptive statistics and chi squared and Mann-Whitney statistical tests.

Results

Between January 2019-December 2021, 87.3% of patients met the ESVS guidelines. Of the 12.6% who did not comply with the guidelines; 80.8% received one form of imaging and 19.2% received two DUS performed by the same operator.

Conclusion

No single reason was identified to explain non-compliance with the 2017 ESVS guideline. Results were disseminated to all interested stakeholders and a common point for intervention in the patient pathway was identified. A six month time lapse (June-December 2022) before re-auditing will enable assessment of the effectiveness of interventions to improve guideline compliance.

BACPAR - Highest scoring abstract submission**BO3 – Sharing stories of lower limb amputation in practice: An exploration into the relatability, usability, and implementation of an animation video package across UK rehabilitation services**

Taylor E¹, Leggat F²

¹St Mary's University, ²St George's, University of London

In 2015, a collaboration between academia and an NHS limb loss rehabilitation centre began. Presented through BACPAR conferences and journal pieces, the partnership has produced research which includes the construction of five narrative trajectories within major lower limb amputation (MLLA) and the translation of these narratives into animation videos. Findings indicated that exposure to the narrative raised less experienced therapists' awareness of MLLA journeys and increase their preparedness for patient care.

When presented in a group activity, people with MLLA connected and resonated with the videos, developed knowledge about what to expect following rehabilitation, and identify helpful

behaviours to action. However, it is not known how these videos relate or may be useful to those in differing rehabilitation environments across the UK.

The aim of the presentation is not only to describe, but to do the animation video activity with BACPAR delegates. This will enable delegates to experience the videos as people in MLLA rehabilitation would do. Delegates will be encouraged to discuss and reflect upon the experience with colleagues in the world café event. It is hoped the activity will prompt conversation into the relatability, usability, and implementation of the videos across regional amputee rehabilitation service.