

ABSTRACTS

VS ASM 2023 Prize/Highest Scoring Abstracts

The Vascular Societies' Annual Scientific Meeting 2023, in conjunction with the VSGBI, BACPAR, SVN and SVT, took place at The Convention Centre, Dublin, on the 22nd-24th November 2023. Here are the 2023 prize/highest scoring abstracts.

VS - Sol Cohen Prize

VO5 – Streamlined management pathways reduce major amputations in chronic limb-threatening ischaemia

Mr John Houghton^{1,2}, Anna Meffert¹, Miss Sarah Nduwayo¹, Imelda Black¹, Mr Andrew Nickinson¹, Amira Essop-Adam¹, Miss Sarah Jane Messeder^{1,2}, Natasha Bryant¹, Prof Laura Gray¹, Tanya Payne¹, Mr Harjeet Rayt², Dr Victoria Haunton³, Mr Robert Davies², Prof Rob Sayers^{1,2}

¹University Of Leicester, Leicester, United Kingdom, ²University Hospitals of Leicester NHS Trust, Leicester, United Kingdom, ³University of Plymouth, Plymouth, United Kingdom

Introduction

Patient characteristics and patterns of disease in CLTI have changed markedly in recent years. Limb-salvage clinics and timely revascularisation are now recommended. This study aimed to compare contemporary major amputation incidence in CLTI patients to an historical cohort.

Methods

Single-centre observational study (NCT04027244). A prospective CLTI cohort was recruited between May 2019 and March 2022. An historical cohort presenting during 2013-2015 (inclusive) was identified retrospectively. The primary outcome was major amputation at one-year. Analysis was by Fine-Gray competing risks models (death as the competing risk) adjusted for propensity score, presented as subdistribution hazard ratios (SHR).

Results

A total of 928 patients were included (432 prospective; 496 historical). Proportions of patients presenting with tissue loss 72.2% vs 71.6%; $p=.090$) and rest pain 78.2% vs 81.9%; $p=.098$) were similar.

At one-year 48 patients (11.1%) in the prospective cohort and 124 patients (25.0%) in the historical cohort had undergone a major amputation ($p<.001$). The risk of major amputation was 57% lower in the prospective cohort compared to the historical cohort after adjustment for propensity score (SHR 0.43; 95% CI 0.29, 0.63; $p<.001$) (Figure 1).

Conclusion

Contemporary management strategies may have more than halved one-year major amputation incidence in patients presenting with CLTI.

VS - BJS Prize

VO35 – Evaluating the evidence for the impact of human factors science on operative performance in vascular surgery

Miss Fiona Kerray^{1,2}, Mr Rob Henson², Mr Andrew Tambyraja^{1,2}, Professor Steve Yule¹

¹Department of Clinical Surgery, The University of Edinburgh, Edinburgh, United Kingdom, ²Edinburgh Vascular Service, Royal Infirmary of Edinburgh, Edinburgh, United Kingdom

Human factors science and ergonomics (HFE) has been included in surgical projects as diverse as system redesign, adverse event analysis and team training. A greater understanding of which HE elements are active in the operative setting is required to inform surgical education, improve individual and team performance, and enhance patient safety.

A systematic search of PubMed, Embase, MEDLINE, and PsycInfo databases was conducted following PRISMA guidelines. MeSH terms and keywords included "human factor*" "perform*", and "vascular surg*". Eligible studies were organised according to

the five Chartered Institute for Ergonomics and Human Factors (CIEHF) categories for analysis.

A total of 14 studies were included. All five CIEHF categories were represented [Table 1]. The most frequently occurring HE element considered was workplace design and assessment¹. Measurable effects of physical, cognitive and organisational factors were reported on: work-related musculoskeletal disorders were prevalent, and operative team selection could influence outcomes. Methods to leverage HE when introducing novel tools and technology are described.

Human factors science/ergonomics is interwoven through every aspect of vascular surgery. Research evidence should be integrated into surgical training to enhance outcomes via

optimising: (i) team selection; (in) environmental factors; and strategies to mitigate the physical and psychological effects of operating.

VS - Poster Prize

P10 – An update of a prospective comparison study of BlueDop as a novel assessment of pedal perfusion

Dr Lucy Fligelstone¹, Ms Annie Clothier², Ms Tracey Hutchings², Mr Kristian Glover², Ms Melissa Blow³, Mr Brenig Gwilym⁴, Mr David Bosanquet⁵

¹Department of Surgery, Sunshine Coast University Hospital, Sunshine Coast, Australia, ²Gwent Vascular Institute, Aneurin Bevan University Health Board, Newport, Wales, ³Department of Podiatry, Aneurin Bevan University Health Board, Newport, Wales, ⁴Department of Vascular Surgery, Swansea Bay University Health Board, Swansea, Wales, ⁵South East Wales Vascular Network, Aneurin Bevan University Health Board, Cardiff and the Vale Health Board, Newport, Cardiff, Wales

Background

Limitations of ABPI include staff training and competency, restrictions from wounds and artificially elevated readings from incompressible vessels. "BlueDop" is a specialist probe which estimates ABPI by analysing doppler waveform at the ankle, without needing a tourniquet or the patient lying flat. The present study updates preliminary results presented at VSASM 2022 regarding the accuracy of BlueDop in assessing perfusion.

Method

175 Vascular and podiatry clinic patients had both ABPI+/-TBPI and BlueDop measurements recorded. Patient and user experience was assessed.

Results

122 patients had diabetes; 95 had CLTI, and 22 reported claudication. Patients preferred the BlueDop compared to ABPI and TBPI (mean difference = 0.544, $p < 0.001$ and 0.579, $p < 0.001$ respectively). BlueDop ABPI showed a significant weak correlation with cuff ABPI ($r_s = 0.39$, $p = 0.003$) but not cuff TBPI ($r_s = 0.22$, $p = 0.4$). BlueDop has good predictive value to predict ABPI < 0.8 (AUC=0.773) and < 0.5 (AUC = 0.870).

Conclusion

BlueDop appears to have acceptable accuracy in diagnosing mild and severe PAD suggesting that it could be a suitable replacement when ABPI/TBPI are not obtainable.

VS - The Richard Wood Memorial Prize

VO47 – Comparing the effect of using virtual reality versus simulation in the management of acute surgical scenarios on academic buoyancy levels

Miss Manal Ahmad^{2,3}, Miss Mi-Tra Tran^{1,2}, Mr Kirtan Patel², Mr Orestis Argyriou³, Professor Alun Davies^{2,3}, Mr Joseph Shalhoub^{2,3}

¹Faculty of Medicine, Imperial College London, London, United Kingdom, ²Section of Vascular Surgery, Department of Surgery and Cancer, Imperial College London, London, United Kingdom, ³Imperial NHS Healthcare Trust, London, United Kingdom

Background

Simulation is regularly used in surgical training to allow trainees to practice skills. Virtual reality (VR) offers immersive computer-generated medical and surgical training scenarios. Performance can be hindered by stress, self-consciousness, anxiety, fear of criticism and self-perceived poor task execution. Academic buoyancy is a learner's ability to successfully deal with short-term, minor academic setbacks and can translate into long-term academic resilience. We aimed to compare academic buoyancy between junior doctors after managing an acute surgical scenario using VR and mannequin-based simulation.

Methods

Eighteen junior doctor volunteers were recruited and randomly allocated to VR or Simulation. Participants assessed and managed a 15-minute acute surgical scenario OSCE. Their academic

buoyancy scale (ABS) scores were measured pre- and post-session

Results

ABS scores increased for both study groups. This was statistically significant for VR participants ($p < 0.01$), suggesting that VR may provide a more comfortable environment for trainees to hone their clinical skills. VR participants also had higher overall simulation scores than mannequin-based simulation participants, however no correlation was found between ABS scores and overall simulation scores.

Conclusions

VR as a simulation modality benefits by improving short-term markers of confidence. Future research should establish whether spaced VR teaching sessions translate into improved long-term resilience.

VS – Venous Prize**VO88 – 5-year follow-up of a Randomised Controlled Trial of Endovenous Laser Ablation versus Mechanochemical Ablation for Superficial Venous Incompetence (LAMA Trial)**

Dr Arthur Lim¹, Mr Abduraheem Mohamed^{1,2}, Ms Louise Hitchman^{1,2}, Ms Misha Sidpra^{1,2}, Mr Bharadhwaj Ravindhran^{1,2}, Mr Ross Lathan^{1,2}, Mr George Smith^{1,2}, Prof Ian Chetter^{1,2}, Mr Daniel Consultant^{1,2}

¹Department of Vascular Surgery, Hull University Teaching Hospitals, Hull, United Kingdom, ²Academic Vascular Surgical Unit, Hull York Medical School, Hull, United Kingdom,

Introduction

Despite a lower anatomical occlusion rate at 1-2 years; patients treated with mechanochemical ablation (MOCA) report equivalent improvements in clinical and Quality of life (QoL) measures when compared to thermal ablation. This study reports the 5-year outcomes of a randomised controlled trial of endovenous laser ablation (EVLA) vs MOCA.

Methods

Patients with unilateral, symptomatic superficial venous incompetence were equally randomised to either MOCA or EVLA. Reported outcomes included anatomical occlusion, clinical recurrence, need for reintervention and disease-specific QoL measured by Aberdeen Varicose Vein Questionnaire (AVVQ).

Results

At 5-years, 57/75 (76%) and 52/75 (69%) patients attended follow up in the MOCA and EVLA groups respectively. Anatomical occlusion following MOCA was significantly lower than EVLA (46.8% vs 91.5%; $p < 0.001$). Clinical recurrence occurred in 21/47 (44.7%) following MOCA and 23/47 (48.9%) following EVLA; $p = 0.298$. Reinterventions were 15/71 (21.1%) following MOCA and 6/71 (8.5%) following EVLA; $p = 0.033$. There was no significant difference in median (i.q.r) AVVQ between groups, 3.7 (0-9) vs 3.3 (1-6); $p = 0.786$.

Conclusion

Five-year anatomical occlusion following MOCA is significantly lower than EVLA. No significant difference in QoL outcomes were observed between groups, however, the MOCA group required a higher number of reinterventions.

SVN - James Purdie Prize**Qualitative exploration of the care pathway for patients with venous leg ulceration**

Miss Layla Bolton Saghdaoui¹, Miss Smaragda Lampridou¹, Ms Sarah Onida¹, Dr Rachael Lear¹, Professor Alun Davies¹, Professor Mary Wells¹

¹Imperial College Healthcare Nhs Trust / Imperial College London

Introduction

Venous ulceration (V) guidance recommends early application of compression therapy and referral for specialist assessment by a vascular service within two weeks. Unfortunately, only a small proportion of eligible patients receive timely assessment and referral.

Method

Semi-structured interviews with nurses were conducted to explore their experiences caring for and referring patients with VU to see a vascular specialist. OSR N-VIVO was used for inductive thematic analysis of verbatim transcripts.

Results

Eighteen nurses, representing primary and secondary care, participated. Six themes emerged: 'MDT Working; Communication; Organisational Limitations; Skills and Confidence;

'The Cinderella Condition'; Self-management. While equally significant, all themes interlink. Gaps between primary and secondary care are amplified by poor MDT collaboration, ineffective communication systems and organisational limitations, including inadequate data sharing. Staff shortages and limited training opportunities mean junior nurses lack knowledge and confidence in providing care. This encourages 'task-based' rather than holistic care. To address staff shortages, support for self-management is seen as a positive way forward. Overall, staff acknowledged that VU is not prioritised in the context of other competing conditions and pressures.

Conclusion

Both organisational and behavioural barriers impact nurses' ability to provide care. These barriers must be addressed when attempting to develop care pathways.

SVT - Best Scientific Presentation

Service evaluation of an ultrasound service for renal artery stenosis

Miss Alexandra Croucher¹, Mr Ben Freedman¹, Dr Jonathan Dick¹

¹King's College Hospital NHS Foundation Trust, London, England

Introduction

The STAR, ASTRAL and CORAL randomised control trials are a weight of evidence in favour of medication alone over revascularisation for the vast majority of patients with native renal artery stenosis (RAS). The lack of evidence supporting intervention combined with an anecdotal low positive finding rate and even lower intervention rate justified a service evaluation with a view to improving referral criteria for renal artery duplex scans.

Method

All renal artery duplex scans performed in 2022 were retrospectively reviewed and analysed by outcome and referrer specialty. Positive findings were defined by a maximum PSV of >1.8m/s and/or damped intrarenal waveforms.

Results

Out of 930 performed scans: 651 were negative; 45 could not assess for RAS due to poor views of the renal arteries and kidneys; 190 found no severe stenosis but could not exclude moderate stenosis; and 42 were positive. Of these patients, only two had angioplasty.

The largest contributing referring group was Renal Medicine (27%), followed by General Internal Medicine (24%), Cardiology (10%), and Acute Internal Medicine (<10%).

Conclusion

There is potential to streamline the service by improving patient selection for renal duplex scans. Referral criteria which selects for patients phenotypes that improve after revascularisation could be introduced.

SVT - Best research proposal

A retrospective study assessing the clinical significance of pre-operative carotid ultrasound screening prior to cardiac surgery

Miss Anice Aidi¹

¹West Hertfordshire Hospitals NHS Trust, Watford, United Kingdom

Carotid disease is a risk factor for stroke during/after cardiac surgery. Therefore, all patients are scheduled for a carotid ultrasound scan for the detection of carotid artery stenosis (CAS) as part of their surgical work-up. This study aims to address if it is necessary to scan all patients and if there is potential to identify certain factors which can be used to screen only those at high-risk of CAS.

962 patients who had a scan prior to cardiac surgery from 2017- 2022 were retrospectively reviewed. The prevalence of CAS and their surgical follow-up was recorded. Statistical analyses were

conducted on 2 risk factors (sex and age) to determine if there was an association with the presence of CAS (>50%).

The results showed a low prevalence (12.3%) of patients that had CAS and of this, a high proportion (84%) of these patients who were not treated for their CAS prior to cardiac surgery, despite the extent of their disease. Males and those 265 years old were found to be significant independent predictors for patients having CAS.

Selectively screening only high-risk patients reduces the screening load and has the potential to save the NHS time and resources from unnecessary scans.

BACPAR - best poster abstract**P75 - The effect of an adaptive trainer on an exercise group within a limb centre environment and the benefit expressed by patients; a pilot study**Mrs Anne Harrill¹¹*Bristol Centre For Enablement, North Bristol NHS Trust, Bristol, UK*

Recommended activity levels for adults each week is 150 minutes of moderate intensity physical activity and 2 days of muscle strengthening activity. Following the Covid pandemic it was evident that patients attending the centre were struggling to motivate themselves and be confident to exercise. Funding was secured from Limb Power through the Tackling Inequalities Fund and a pilot created that involved 12 lower limb amputee patients attending in groups of 4, each for 6 consecutive weeks. The course was delivered by an Adaptive Personal Trainer and modified each week depending on the needs and progress of each participant. Each

participant was a limb user although exercises could be adapted if they were unable to don their prosthesis. The patients included trans tibial and trans femoral amputees both unilateral and bilateral. Also included SAKL and MPK users. At the end of the 6 sessions patients completed a feedback questionnaire. Some were willing to be filmed participating and 2 were happy to give video feedback. The presentation would include videos, a summary of exercises and clarification on the role that adaptive training can play in the treatment of lower limb amputees.

BACPAR - Joint best speaker prize**B02 - Limb loss; let's talk about it. The Glasgow experience**Miss Laura Brady¹, Mr Damien McGovern¹*NHS, Glasgow, Scotland*

Having an amputation is a life altering event and often our patients and referrers are ill informed about life after amputation. This has resulted in patients attending our clinics with unrealistic expectations and inaccurate information. Our team recognised this and investigated different methods to help address these issues.

As a result, we now have an established pre amputation clinic where we are able to have open and honest conversations with patients prior to amputation, where possible. This clinic has proven to be particularly beneficial for patients who are considering amputation versus limb salvage in order to help them make an informed choice.

We have invested time in providing training sessions for our referrers and AHP colleagues on how to approach earlier discussions about the possibility of amputation to ensure the information provided is accurate.

Through this process our team have had the opportunity to work more closely with our Orthopedic, Oncology and Trauma colleagues which has improved patient pathways.