



VASBI ANNUAL MEETING 2012

PROGRAMME & ABSTRACT HANDBOOK

DATE 27th & 28th September 2012

VENUE Liverpool Hilton
3 Thomas Steers Way, Liverpool, L1 8LW

WELCOME

Dear All,

On behalf of the organizing committee may I extend a very warm welcome to Liverpool and VASBI 2012. This years meeting is set to be our most exciting yet, with a dynamic faculty from the cutting edge of dialysis access medicine.

As ever our annual meeting couldn't happen without your considerable input and council is very grateful for all your efforts. We received a record number of high quality submissions and the Bakran award for best presentation is bound to be keenly fought for in the stimulating scientific sessions.

The provocative debate section returns with some excellent speakers from nephrology, radiology and surgery. I'm sure we'll see sparks fly. With electronic interactive voting you will not only get your chance to support the debaters but will be able to challenge yourself in the complex case session as the entire audience becomes the expert panel.

I would like to express council's considerable thanks to our industrial sponsors. The symbiotic relationship between VASBI and the medical device and pharmaceutical companies continues to grow for all our benefits. There are any number of new and exciting innovations on display in the technical exhibition and I encourage you to visit all of the stands. New to VASBI, you can find details of the informative "what industry can do for you" session in your program.

Following last years meeting we held elections for council positions. New to council is Rob Jones, Radiologist, Jennifer Hanco, Nephrologist, and Max Troxler, Vascular Surgeon. I wish them good luck in their positions.

Vascular access is not only challenging in the UK. This year Nick Inston, Vice President, and myself met with representatives of the Vascular Access Society of the Americas, the European Vascular Access Society and the Japanese Society for Dialysis Therapy to discuss a rotating merger of our meetings to form a World Congress for Dialysis Access. The challenges faced by our colleagues throughout the world are identical to our own and there is much we can learn through our shared experience. I'll keep you informed of developments through the website.

Many of you will have travelled great distances to be here but I'm sure the hospitality afforded to you at VASBI 2012 in Hilton Liverpool will compensate. Liverpool is a vibrant city and has recently undergone a huge renovation project as part of being European capital of culture. The shopping is excellent and just on the doorstep of the conference centre. There's plenty of nightlife in the city and the Tate Gallery and Albert Dock are just a short walk.

Once again, welcome and I hope you enjoy VASBI 2012.

Steve Powell
President VASBI

PRESIDENT:

Dr Steven Powell
Liverpool

VICE-PRESIDENT:

Mr Nick Inston
Birmingham

TREASURER:

Dr Peter Littler
Newcastle

SECRETARY:

Dr Sarah Lawman
Brighton

MEMBERS OF COUNCIL:

Dr Jennifer Hanco, Mr Max Troxler, Dr Jason Wilkins, Dr Rob Jones & Ms Shella Sandoval

VASBI FACULTY LIST 2011

Mr Chris Gibbons	Consultant Vascular Surgeon, Wales
Mr Domenico Valenti	Consultant Vascular Surgeon, King's College Hospital, London
Dr Colin Deane	President of BMUS: Head of Vascular Laboratory, King's College Hospital, London
Dr Iain Robertson	President of BSIR: Consultant Interventional Radiologist, Glasgow
Mr Teun Wilmink	Consultant Vascular Surgeon, Birmingham
Dr Nick Fardon	Consultant Nephrologist, Sheffield
Dr Damian Fogarty	Chair of UK Renal Registry: Consultant/Sen Lecturer in Renal Medicine, Belfast
Dr Richard Fluck	President British Renal Society: Consultant Nephrologist, Derby
Mr James Gilbert	Consultant Surgeon, Oxford
Dr Peter Hill	Consultant Nephrologist, London
Mr Christopher Callaghan	Consultant Vascular Surgeon, London
Mr John-Paul West	Dialysis Patient Representative
Dr Steve Powell	Consultant Interventional Radiologist, Liverpool
Mr Nick Inston	Consultant Vascular Surgeon, Birmingham
Dr Peter Littler	Consultant Interventional Radiologist, Newcastle Upon Tyne
Dr Sarah Lawman	Consultant Nephrologist, Brighton
Dr Jennifer Hanko	Consultant Nephrologist, Belfast
Dr Jason Wilkins	Consultant Interventional Radiologist, London
Dr Andrew Willis	Consultant Interventional Radiologist, Birmingham
Mr Max Troxler	Consultant Vascular Surgeon, Leeds
Dr Rob Jones	Consultant Interventional Radiologist, Birmingham
Ms Nikky Cullen	Clinical Specialist, Renal Vascular Access, Liverpool
Ms Shella Sandoval	Clinical Nurse Specialist, Renal Vascular Access, London
Ms Louise Oakaby	Senior Clinical Nurse Specialist, Renal Vascular Access, Exeter

08.00 - 09.00	REGISTRATION	
09.00 - 09.10	WELCOME & INTRODUCTION	Speaker: Dr Steve Powell
09.00 - 10.30	PLENARY SESSION 1: TIMELY ACCESS	Chairs: Dr Steve Powell & Mr Chris Gibbons
	<ul style="list-style-type: none"> • UK Data • Timely access and mapping • Getting the access- surgical aspects 	<p>Speaker: Dr Sarah Lawman Speaker: Dr Jennifer Hanko Speaker: Mr Teun Wilmink</p>
10.30 - 11.00	COFFEE EXHIBITION & POSTERS	
11.00 - 12.30	VASBI WORKSHOPS	Moderators:
	<ol style="list-style-type: none"> 1. Home Haemodialysis 2. Catheter insertion 3. Advanced needling 4. Fistula Maintenance and Salvage 5. Surgical Workshop 6. USS in Access 	<p>Mr Paul Lowes & Ms Teresa Stevenson Dr Andrew Willis Ms Shella Sandoval & Ms Louise Oakaby. Dr Rob Jones & Dr Jason Wilkins Mr Domenico Valenti Dr Colin Deane & Mrs Nicky Cullen</p>
12.30 - 13.30	LUNCH EXHIBITION & POSTERS	

13.30 - 15.00	SCIENTIFIC SESSION 1	Chairs: Dr Andrew Willis & Dr Sarah Lawman
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13.30 - 13.40	PAIN RESULTING FROM ARTERIOVENOUS FISTULAE: PREVALENCE AND IMPACT
	<p>Aitken E¹, McLellan A² Kingsmore DB¹ & Clancy M¹ ¹Department of Renal Surgery, Western Infirmary, Glasgow. ²Glasgow University Medical School, Glasgow</p>
13.40 - 13.50	A SINGLE CENTRE STUDY INTO SPONTANEOUS FISTULA HAEMORRHAGE
	<p>Dr James Tollitt, Dr Milind Nikam, Zufikar Pondor, Lourinti Fletchman, Mr Afshin Tavakoli, Mr Ravi Pararajasingam, Mr Bence Forgacs, Mr David Van Dellen, Mr Babatunde Campbell & Dr Rosemary Donne* Department of Renal Medicine, Salford Royal NHS Foundation Trust, Stott Lane, Salford M6 8HD</p>
13.50 - 14.00	MATURATION AND SURVIVAL OF ARTERIOVENOUS FISTULAE: AN 8 YEAR AUDIT
	<p>Sarah Elgarf¹, Lee Hollingworth², Sarah Powers², Clive Allen², Teun Wilmink¹ ¹Dept of Vascular Surgery and ²Renal Medicine, Heart of England NHS Foundation Trust, Birmingham</p>
14.00 - 14.10	THE ROLE OF RADIOGRAPHER ADVANCED PRACTITIONERS IN RENAL ACCESS INTERVENTION AT QUEEN ELIZABETH HOSPITAL BIRMINGHAM
	<p>D Parker, L Elzubeir, RG Jones, AP Willis, JJ McCafferty, PL Riley Department of Radiology, Queen Elizabeth Hospital, Birmingham UK</p>
14.10 - 14.20	IS IT SAFE TO REDUCE RECOVERY TIME POST FISTULOPLASTY?
	<p>Daniel S, Kelly A, Beckett T, Collin N, Mitchell D, Armitage A. North Bristol NHS Trust</p>
14.20 - 14.30	ON TABLE DOPPLER FLOW RATES AFTER FISTULOPLASTY
	<p>Shafi BBB, Abdelsalam H, Kibriya N, Gurujala R, Shaikh U, Powell S Interventional Radiology Department, Royal Liverpool University Hospital</p>
14.30 - 14.40	COSTING SURVEILLANCE OF PROBLEMATIC ARTERIOVENOUS FISTULAE
	<p>Aitken E & Kingsmore DB Department of Renal Surgery, Western Infirmary, Glasgow</p>
14.40 - 14.50	FISTULOPLASTY USING DRUG-ELUTING BALLOONS: A PILOT STUDY
	<p>N.Kibriya, A.Anjum, R.Gurujala, B.B.Shafi, S.Powell Royal Liverpool University Hospital, Liverpool</p>

15.00 - 15.30	COFFEE EXHIBITION & POSTERS	
15.30 - 16.30	LIVE DEBATE SESSION	Chairs: Dr Rob Jones, Mr Max Troxler
	<ol style="list-style-type: none"> 1. Graft vs AVF first 2. Who should do dialysis access interventions 	<p>Speakers: Mr Nick Inston vs Mr Chris Gibbons Speakers: Dr Iain Robertson vs Dr Nick Fardon</p>
16.30 - 17.00	MODERATED POSTER MARKING SESSION	Chair: Dr Sarah Lawman
	What industry can do for you session	Exhibition Hall
17.00 - 18.00	Surgical Training and Fellowships Meeting	Chairs: Mr James Gilbert/Mr Nick Inston
19.15	DRINKS RECEPTION	LIVERPOOL HILTON
20.00	CONFERENCE DINNER	MR SIMON EVANS

09.00 - 09.05	WELCOME	Dr Steve Powell
09.05 - 10.30	PLENARY SESSION 2: CHALLENGING SURGICAL ACCESS 1. Access in the Bariatric Patient 2. The Extremes of Age 3. Desperate Measures	Chairs: Dr Steve Powell, Dr Sarah Lawman Speaker: Mr Max Troxler Speaker: Mr Christopher Callaghan Speaker: Mr Nick Inston
10.30 - 11.00	COFFEE EXHIBITION & POSTERS	
11.00 - 12.30	COMPLEX CASE SESSION	Chairs: Dr Jennifer Hanko & Dr Steve Powell
12.30 - 13.30	LUNCH EXHIBITION & POSTERS	
13.00 - 13.30	MODERATED POSTER SESSION	Chair: Dr Sarah Lawman
13.30 - 14.15	PLENARY SESSION 3: ACCESS 'THROUGH THE AGES' 1. Renal Registry 2. 40yrs experience of dialysis	Chairs: Dr Jennifer Hanko & Dr Peter Littler Speaker: Dr Damian Fogarty Speaker: Mr John-Paul West
14.15 - 15.00	LIVE DEBATE SESSION 2 PBR: Harm or help?	Chairs: Dr Steve Powell Dr Sarah Lawman Speakers: Dr Peter Hill vs Dr Richard Fluck

15.00 -16.00	SCIENTIFIC SESSION 2	Chairs: Dr Peter Littler & Mr Nick Insto
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15.00 -15.10	THE ROLE OF CIRCULATING ENDOTHELIAL PRECURSOR CELLS IN THE DEVELOPMENT OF ARTERIOVENOUS FISTULAE USED FOR HAEMODIALYSIS Vesey A ¹ , Gajree S ² , Glen J ¹ , Aitken E ¹ , Clancy M ¹ ¹ Renal Transplant Unit, Western Infirmary, Glasgow. ² BHF Glasgow Cardiovascular Research Centre, University of Glasgow
15.10 -15.20	BRACHIAL VEIN TRANSPOSITION WITH ELEVATION – A NOVEL APPROACH TO INCREASE THE USE OF AUTOGENOUS FISTULA FOR DIALYSIS ACCESS Dr. Stephen L. Hill, Dr. Ryan D. Evans ~ Physicians Care of Virginia
15.20 -15.30	THIGH LOOP GRAFT FORMATION: DOES THE USE OF A LONG SAPHENOUS VEIN CUFF RESULT IN INCREASED VENOUS ANASTOMOTIC STENOSES? ER Faulconer ¹ , M Field ¹ , K Tullett ¹ , R Jones ² , A Willis ² , NG Inston ¹ , D van Dellen ³ Department of ¹ Renal Transplantation and ² Radiology, Queen Elizabeth Hospital, Birmingham and ³ Renal and Pancreatic Transplantation, Manchester Royal Infirmary, Manchester
15.30 -15.40	THE CHANGING WORKLOAD BURDEN OF VASCULAR ACCESS ON AN EMERGENCY CEPOD THEATRE Aitken E, Kingsmore DB Department of Renal Surgery, Western Infirmary Glasgow
15.40 -15.50	SPIRAL LAMINAR BLOOD FLOW IN AUTOLOGOUS ARTERIOVENOUS FISTULAE - A MARKER OF MATURATION Marie Y, Mellor S, Krishnan H, Field M, Tullett, K, Jones R, Inston NG Dept Renal Surgery and Radiology, Queen Elizabeth Hospital Birmingham, University Hospitals Birmingham NHS Trust, Edgbaston, Birmingham, B15 2WB
15.50 -16.00	POST OPERATIVE ARTERIO-VEIN FISTULA FLOW INFLUENCES PATENCY FOLLOWING ACCESS SURGERY: DIABETES MAY NOT INFLUENCE THE OUTCOME C Lord, KS Benaragama, BJ John, J Zheng, J Medhora, S Sandoval, BS Fernando, B Lindsey, C Forman Department of Renal Transplantation, Royal Free Hospitals NHS Foundation Trust, London, United Kingdom
16.00 -16.10	DIALYSIS FISTULAE THROMBOSIS: OUTCOMES IN NORTHERN IRELAND Reaney J, Boyd C, Loan W, Hill C, Hanko J Belfast City Hospital, Belfast Health and Social Care Trust
16.10 -16.20	DUPLEX ULTRASOUND VOLUME FLOW MEASUREMENTS BEFORE AND AFTER HAEMODIALYSIS IN PATIENTS WITH NATIVE ARTERIOVENOUS FISTULAE (AVF). Stephenson M A, Mistry H, Chowdhury S, Freedman B et Valenti D Department of Vascular Surgery King's College Hospital London

16.00 - 16.30	VASBI Society Report Treasurer's Report	Dr Sarah Lawman Dr Peter Littler
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PRIZE GIVING OF BAKRAN SHIELD

Dr Steve Powell

CLOSE OF MEETING

POSTERS LIST

GROUP A:

EVALUATION OF DIGITAL SYMPATHECTOMY: HEROIC SALVAGE OR FUTILE MANAGEMENT?

P.Mohandas, M Bukhari

Lancaster Royal Infirmary, NHS Foundation Trust, Lancashire, UK

THE DIABETIC PATIENT ON RENAL REPLACEMENT THERAPY AND INTERVENTIONAL RADIOLOGY: PLANNING THE SERVICE AROUND A SAFE AND POSITIVE PATIENT EXPERIENCE

A. Scott¹, V. Morris¹, G Lowe¹, M. Dowdall¹, S Thomas³, A Wilcox², N Watson², T Chan¹, R. Ravi¹, P Kumar¹, J Tuson¹, E o Grady¹, P Littler¹, A Camenzuli¹

¹Interventional Radiology. ²Vascular Laboratory Services. ³Renal and Dialysis Services
Aintree University Hospitals Fndn NHS Trust, Lower Lane, Liverpool L9 7AL

FAR INFRARED THERAPY AS AN AID TO AV FISTULA MATURATION AND MAINTENANCE

T Shipley, J Adam, D Sweeney, H Mansy, S Fenwick, I Moore, S Ahmed

Dept of Renal Medicine, City Hospitals Sunderland

EVALUATION OF AGGRESSIVE INTERVENTION TO MINIMISE TCVC USAGE: COMPLETION OF THE AUDIT CYCLE

Aitken E, Stevenson K, Littlejohn M, Bingham M, Clancy M, Kingsmore D

Department of Renal Surgery, Western Infirmary, Glasgow

ARTERIO-VEINUS FISTULA FLOW AT 6 WEEKS: A STRATEGY TO IMPROVE PATENCY

KS Benaragama, C Lord, BJ John, J Zheng, J Medhora, S Sandoval, BS Fernando, B Lindsey, CJ Forman

Department of Renal Transplantation, Royal Free Hospitals NHS Foundation Trust, London, United Kingdom

INITIAL CLINICAL EXPERIENCE OF THE VWNG

Mark Crawford

Vital Access, Salt Lake City, UT

GROUP B:

TREATMENT OF FTHE FAILED -TO-MATURE ARTERIO-VEINUS FISTULA: A WORTHWHILE ENDEAVOUR

Mr Abdulmalik Aikoye, Miss Rona Grieves, Mr Thomas Rix

Dept of Vascular Surgery (Vascular Access Unit), Kent & Canterbury Hospital

BUTTON HOLE V ROPE LADDER FISTULAS- A COMPARATIVE STUDY FROM A SINGLE CENTRE

Clive Allen, Sarah Powers and Jyoti Baharani

Department of Renal Medicine Heart Of England NHS Foundation Trust, Birmingham,UK

FACTORS THAT IMPACT ON DIALYSIS FISTULA MATURATION

Bhamrah J, Townsend T, Brownlie N, Choksy S.

Department of Vascular Surgery, Colchester University Hospital NHS Trust, London, UK

PERSISTENT SEROUS LEAK: AN UNUSUAL COMPLICATION OF A SYNTHETIC GRAFT USED AS AN ARTERIO-VEINUS SHUNT FOR DIALYSIS ACCESS

V S Venkatanarasimhamoorthy, A Ghazanfar, G Di Benedetto T Augustine

Dept of Transplant Surgery Manchester Royal Infirmary Manchester

EVALUATING THE ROLE OF A VASCULAR ACCESS MDT IN THE MANAGEMENT OF STENOTIC ARTERIOVENOUS FISTULAE

Aitken E¹, Kasthuri R² & Kingsmore DBV

¹Department of Renal Surgery, ²Department of Radiology, Western Infirmary, Glasgow

DO PREOPERATIVE ARTERIAL VOLUMES PREDICT POST MATURATION FISTULAE FLOW VOLUMES IN DIALYSIS PATIENTS?

R K Gurajala, H Abdelsalam, N Kibriya, BBB Shafi, B Hankinson, U Shaikh, J Belfield, R Hall, N Cullen, S Powell

Department of Radiology, Royal Liverpool Broadgreen University Hospital NHS Trust, Liverpool, United Kingdom

GROUP C:

A NATIONAL AUDIT OF CURRENT UK PRACTICE IN AUTOLOGOUS ARTERIOVENOUS FISTULA FORMATION AND MANAGEMENT

R Porter¹ GE Smith² IC Chetter²

¹Hull and York Medical School ²Academic Vascular Surgery Unit, Hull and York Medical School

PRACTICES IN VASCULAR ACCESS: A COMPARISON OF UK AND USA

R Porter¹ GE Smith², IC Chetter²

¹Hull and York Medical School ² Academic Vascular Surgery Unit, Hull and York Medical School

ACHIEVING EXCELLENCE IN VASCULAR ACCESS: THE STEEPHILL TO 85% !

Lynn Davies.Mr Mike Stephens and Mr Adel Ilham

Cardiff and Vale University Health Board, University Hospital of Wales, Heath Park, Cardiff.

RECURRENT MRSA BACTERAEMIAS IN A DIALYSIS PATIENT: THERAPEUTIC CHALLENGES

Maddie Holland, Itisha Gupta, Abid Hussain and Jyoti Baharani

Departments of Medical Microbiology and Renal Medicine Heart of England Foundation Trust, Birmingham UK

VASCULAR ACCESS- OUR EXPERIENCE WITH PATIENTS WHO REFUSE ACCESS SURGERY, CHARACTERISTICS AND OUTCOME-SINGLE CENTRE EXPERIENCE FROM THE UK

Sarah Powers, Clive Allen and Jyoti Baharani

The Department of Renal Medicine, Birmingham Heartlands Hospital, Heart of England Foundation Trust

LONGEVITY OF AUTOLOGOUS ARTERIOVENOUS FISTULAS: WHAT IS THE PREVALENCE OF AVFS OF OVER 10 YEARS SURVIVAL?

Tullett K, Freckleton S, Mellor S, Jones R, Marie Y, Krishnan H, Field M, Inston NG.

Dept Renal Surgery and Radiology , Queen Elizabeth Hospital Birmingham, University Hospitals Birmingham NHS Trust, Edgbaston, Birmingham,

UK VASCULAR ACCESS PRACTICE: HOW DIFFERENT ARE WE, IN COMPARISON TO OTHER COUNTRIES

J Medhora, KS Benaragama, BJ John, J Zheng, C Lord, S Sandoval, BS Fernando, C Forman, B Lindsey

Department of Renal Transplantation, Royal Free Hospitals NHS Foundation Trust, London, United Kingdom

DEVELOPING AN ACCURATE VASCULAR ACCESS DATABASE

A Masengu, K Larmour, A McNiece, A McCann, C Pollock, J Hanko.

Regional Nephrology Unit, Belfast City Hospital

GROUP D:

A DEDICATED VASCULAR ACCESS CLINIC SAVES FISTULAS

Joe Mercer, Haytham Al-khaffaf

Vascular unit, Royal Blackburn Hospital, East Lancashire

ANALYSIS OF THE COMPLICATIONS AND OUTCOMES OF ARTERIO-VEIN FISTULAS CREATED AT THE EDINBURGH ROYAL INFIRMARY

Jing Wang, Janice Miller, Rebecca Hyde

NHS Lothian

DEVELOPMENT, IMPLEMENTATION AND EARLY EXPERIENCE OF A MULTIDISCIPLINARY PATHWAY FOR THE MANAGEMENT OF THROMBOSED AV DIALYSIS FISTULAE IN A TERTIARY REFERRAL RENAL UNIT

D Harris, AP Willis, PR Riley, NG Inston, C Day, K Tullett, RG Jones

Department of Radiology, Queen Elizabeth Hospital, Birmingham, UK

QUALITY IMPROVEMENT IN DIALYSIS NURSE EDUCATION: STEPS TO IMPROVE VASCULAR ACCESS OUTCOMES

Margaret Baker, Sarah Bridgford, Audrey Hyde, Zulfikar Pondor, Lourinti Fletchman, Smeeta Sinha & Rosie Donne

Department of Renal Medicine, Salford Royal NHS Foundation Trust, Salford, Greater Manchester, M6 8HD

POSTERS LIST

EXPERIENCE OF DIALYSIS NURSES IN USING ULTRASOUND FOR NEEDLING HAEMODIALYSIS VASCULAR ACCESS

Lyndsey Rushton, Haytham Al-khaffaf
Burnley Dialysis unit, East Lancashire

FLOW RATES AND DYNAMIC VENOUS PRESSURES: ARE THEY PREDICTIVE OF ARTERIOVENOUS FISTULA THROMBOSIS?

Aitken E & Kingsmore DB
Department of Renal Surgery, Western Infirmary, Glasgow

PROVISION OF A VASCULAR ACCESS NURSE AS A STRATEGY TO IMPROVE DIALYSIS ADEQUACY

Owen A, Junglee N and Jibani M.
Elidir Renal Unit, Ysbyty Gwynedd, Bangor, Gwynedd, UK

FISTULA FIRST IN BELFAST

J McMullan, J Hanko, M Gilleece, A Redmond
Regional Nephrology Unit, Belfast City Hospital

VASCULAR ACCESS NURSE LED SALVAGE OF OCCLUDED ARTERIO-VENOUS GRAFTS (AVG) IN HAEMODIALYSIS PATIENT

Sue Taylor and Paula Davies
Renal Unit, Morriston Hospital Swansea, Abertawe Bro Morgannwg University Health Board

ULTRASOUND GUIDED NEEDLING OF AV FISTULA/GRAFTS : A USEFUL TOOL FOR DIALYSIS NURSES

Ramesh Batra, Shella Sandoval, Ben Lindsey
Department of Renal Transplant Surgery Royal Free London NHS Foundation Trust

PAIN RESULTING FROM ARTERIOVENOUS FISTULAE: PREVALENCE AND IMPACT

Aitken E¹, McLellan A² Kingsmore DB¹ & Clancy M¹

¹Department of Renal Surgery, Western Infirmary, Glasgow

²Glasgow University Medical School, Glasgow

Purpose: To evaluate the burden of pain resulting from cannulation of AVF

Methodology: All patients dialyzing via an AVF in the West of Scotland (n=480) had pain assessed using Visual Analogue scores (VAS) (0-10) and Brief Pain Inventory. A McGill pain score was used to characterize the nature of pain. ED-5Q-5L questionnaires (0-5) were also employed to assess quality of life. Patients with "severe pain" (VAS >5) were compared to those with minimal pain. P-value <0.05 is significant.

Results: 97.5% of patients completed the questionnaire. Median VAS pain score on cannulation was 3 (IQR 2, 5). 114 patients (24.4%) had "severe pain" on cannulation. The median chronic pain score between dialysis sessions was 0 (IQR 0,2). 15 patients (3.2%) had "severe" chronic pain. Five patients (1%) reported occasional (less than once a month) missed dialysis and one patient refused to dialyse via the AVF due to pain. 11.3% reported cutting short dialysis as a result of pain. The majority of the pain was described as sharp (41.7%) or aching (25%). However, several patients described pain as "shooting" (4.5%), "burning" (5.3%) and "tingling" (12.4%) suggesting a neuropathic element. EQ-5D-5L scores suggested that patients on dialysis had a good quality of life. Nevertheless, many had pain severely affecting mood (12.4%) and sleep (18.3%). 46.7% of patients with severe chronic pain were found to have a physical complication of the AVF (e.g. venous stenosis, pseudoaneurysm), with improvement after intervention in 71.4%. There was no difference in acute pain scores based on gender, age or ethnicity. Brachiobasilic AVF had a higher incidence of severe acute pain than either brachiocephalic or radiocephalic AVF (50%, 23.3% and 24.4% respectively; p=0.03). There was a trend towards more "severe" acute pain with rope-ladder cannulation (27.7%) compared to button-hole cannulation (18.2%), however this difference did not reach statistical significance (p=0.09).

Conclusions: Pain resulting from AVF is an under-reported problem. Whilst severe pain resulting in the avoidance of dialysis is rare, its occurrence can lead to significant difficulties and even ultimate abandonment of the AVF. Pain is often suggestive of an underlying problem with the AVF and this should always be investigated in the first instance. Our findings suggest that pain is multi-modal and neuropathic pain may play a significant role, particularly in chronic pain.

A SINGLE CENTRE STUDY INTO SPONTANEOUS FISTULA HAEMORRHAGE

Dr James Tollitt, Dr Milind Nikam, Zufikar Pondor, Lourinti Fletchman, Mr Afshin Tavakoli, Mr Ravi Pararajasingam, Mr Bence Forgacs, Mr David Van Dellen, Mr Babatunde Campbell & Dr Rosemary Donne*

Department of Renal Medicine, Salford Royal NHS Foundation Trust, Stott Lane, Salford M6 8HD

*Submitting author, email: rosie.donne@srft.nhs.uk, tel. 0161 206 5150 (There are no competing interests for any author)

Purpose: Spontaneous haemorrhage from an AV fistula is a rare but potentially fatal complication but little is known about risk factors and preventative strategies. 4 fatal and 14 very serious fistula haemorrhages were reported to the UK National Patient Safety Agency (NPSA) between November 2003 and April 2010. Following a fatality at our centre, we undertook a detailed review of all known cases of fistula haemorrhage occurring in our haemodialysis population of 370 patients.

Materials and methods: A retrospective study using the electronic patient record system was performed. Data was collected on demographics, antithrombotic agents, anticoagulation, fistula appearance, radiology reports and dialysis observations.

Results: Eight patients were identified who either bled spontaneously between dialysis sessions (n=6) or required inpatient stay due to a concerning fistula appearance (n=2) between June 2009 and April 2012. Two patients died from haemorrhage. Five of the six patients who bled spontaneously had an abnormal fistula appearance, including aneurysms, thin or shiny skin at cannulation sites, a large scab (>3mm) or signs of a proximal stenosis. The other patient's bleeding was attributed to traumatic needling of a graft.

Conclusion: Spontaneous bleeding from AVF may result in serious consequences for HD patients and should be preventable.

- 1) Risk factors for bleeding included scab size >3mm, aneurysms, thin and shiny skin overlying fistula.
- 2) Any spontaneous bleeding from a fistula should prompt urgent surgical review.
- 3) A bleeding risk scoring tool may help to highlight patients needing urgent intervention.

References: 1. NPSA Patient safety resources. Reference number 1309

ABSTRACTS - SESSION 1

MATURATION AND SURVIVAL OF ARTERIOVENOUS FISTULAE: AN 8 YEAR AUDIT

Sarah Elgar¹, Lee Hollingworth², Sarah Powers², Clive Allen², Teun Wilmink¹

Dept of Vascular Surgery¹ and Renal Medicine², Heart of England NHS Foundation Trust, Birmingham

Purpose: To document maturation and survival of autologous arteriovenous fistulae (AVF).

Material and methods: Review of two prospective databases of access operations and dialysis sessions from 2002 till 2009. Follow up till April 2012. AVF maturation is an AVF used for 6 consecutive dialysis sessions with 2 needles. Maturation-time was estimated for patients on dialysis at time of AVF creation. Survival is defined as date when AVF is abandoned.

Results: 790 AVF were analysed: 423 (54%) radio-cephalic AVF (RCAVF), 261 (33%) brachio-cephalic AVF (BCAVF) and 106 (13%) brachio-basilic AVF (BBAVF). Maturation was significantly better for BCAVF (90%) compared to RCAVF (82%) and BBAVF (77%) ($p = 0.003$). Gender, diabetes, cause of renal failure, previous AVF on same side, surgeon and age were not related to maturation. Patients not on dialysis at time of AVF creation had better maturation rates: 88% vs. 82%, ($p = 0.023$). Ultrasound assessment increased maturation rate for RCAVF (90% vs. 78%, $p = 0.002$) but had no effect on upper arm AVF. Median maturation-time was 8.2 weeks, 10% of AVF were needled within 4 weeks and 75% were needled after 15 weeks, with no significant differences between types AVF. Fistula survival was significantly better for RCAVF (logrank test, $p = 0.0024$) and for patients not on dialysis at fistula creation (logrank test, $p = 0.0019$).

Conclusion: Patients who have their AVF before start dialysis have higher maturation rates and better fistula survival. RCAVF have lower maturation rates but better survival than upper arm AVF.

THE ROLE OF RADIOGRAPHER ADVANCED PRACTITIONERS IN RENAL ACCESS INTERVENTION AT QUEEN ELIZABETH HOSPITAL BIRMINGHAM

D Parker, L Elzupier, RG Jones, AP Willis, IJ McCafferty, PL Riley

Department of Radiology, Queen Elizabeth Hospital Birmingham UK

Purpose: At Queen Elizabeth Hospital Birmingham radiology department two radiographer advanced practitioners play an active role in both diagnostic and therapeutic interventions. This service has developed over a 10 year period initially beginning with diagnostic angiography before progressing to include angioplasty and more recently renal access interventions.

Methods: A review of the initial trust board agreed protocol, documentation and training process was undertaken. In addition, analysis of all audits relating to performance was undertaken along with data collection from the radiology information system to obtain numbers and types of procedures carried out from January 2003 to June 2012. Information on the level of supervision of cases was also obtained.

Results: The radiographer advanced practitioner protocol is discussed. A detailed account of the process is presented. Audit information and any discrepancies are presented. One radiographer has carried out 890 diagnostic and therapeutic lower extremity angiograms in total. More recently, with increased demand for renal access interventions, the 2 practitioners collectively have carried out over 200 renal access interventions in the past year. We include a number of representative cases.

Conclusion: With increased demand for image guided renal access interventions, radiographer advanced practitioners play an important and unique role in supplying this service. Underpinned by a robust training program and regular audit this has proven to be both a feasible and safe service lending support to an established, comprehensive interventional radiology service at our institution. This role provides an attractive and exciting opportunity for advanced practitioners.

IS IT SAFE TO REDUCE RECOVERY TIME POST FISTULOPLASTY?

Daniel S, Kelly A, Beckitt T, Collin N, Mitchell D, Armitage A.
North Bristol NHS Trust

Purpose: Fistuloplasties at Southmead Hospital are undertaken in radiology with the patients returning to the renal day case unit for 4 hours of arm rest and observation. We sought to establish if this recovery time could be safely reduced to 2 hours.

Methods: In this study we prospectively collected data on 37 consecutive patients undergoing fistuloplasty over a three month period, completing telephone follow-up at 24 hours.

Results: Of the 37 fistulas treated 32 were on haemodialysis and 5 pre-dialysis. In 62% the indication for intervention was a haemodynamically significant stenosis with a duplex measured flow rate of <600ml/minute. 59% of patients were prescribed an oral antiplatelet and/or anticoagulant. The majority of patients required a single puncture (n=21) with a 4 French sheath (n=32), with only two patients requiring more than one puncture. The median time to haemostasis post needle removal was 10 (5-20) minutes and the median length of stay 4 (1-4.2) hours. Two patients bled post-fistuloplasty, both within 80 minutes of puncture and both responded to simple compression. There was no reported bleeding overnight in the 24 patients contacted at 24 hours and there were no documented readmissions for bleeding.

Conclusion: In this prospective study only 5% of patients suffered bleeding post-fistuloplasty and these events occurred within 80 minutes with no delayed bleeding evident at 24 hours follow-up. We therefore suggest that it is safe to reduce the duration of observation to two hours. This policy has been adopted in our unit with no known incidents of bleeding post implementation.

ON TABLE DOPPLER FLOW RATES AFTER FISTULOPLASTY

Shafi BBB, Abdelsalam H, Kibriya N, Gurujala R, Shaikh U, Powell S
Interventional Radiology Department, Royal Liverpool University Hospital

Purpose: Do flow volumes increase instantly following fistuloplasty? Is success of fistuloplasty easily determined by on table Doppler compared with standard surveillance methodologies usually performed at one month?

Materials and methods: The flow volume in the artery was measured immediately after the fistuloplasty in 33 patients. The percentage increase in the volumes was calculated, which was then compared with flow rates on duplex ultrasound, one month after the procedure.

Results: 22 patients were male with 11 females. Mean age was 62 years. The mean time on dialysis was three years with mean age of the fistula measuring 2 years. 29 patients showed increase in the flow rate on the duplex scan performed immediately after the fistuloplasty. The mean percentage increase was 67% (Range 7 - 212.5%). In nine of these 29 patients, the flow rates decreased on the follow up duplex scan at one month interval with a mean decrease of 28 % (Range 9-50 %).

In four out of 33 patients the flow volumes decreased immediately after the procedure with a mean percentage decrease of 11.89% (Range 1.5 - 33%).

In all these patients the flow volumes increased at one month ultrasound with a mean percentage increase measuring 18.8% (Range 2.85 - 37.5% increase)

Conclusion: The flow volumes increase instantly following fistuloplasty. Duplex scan at one month is a better tool to determine the outcome of the fistuloplasty and to dictate future management.

ABSTRACTS - SESSION 1

COSTING SURVEILLANCE OF PROBLEMATIC ARTERIOVENOUS FISTULAE

Aitken E & Kingsmore DB

Department of Renal Surgery, Western Infirmary, Glasgow

Purpose: The aim of this study was to evaluate outcome and costs comparing patients undergoing radiological surveillance after angioplasty of a stenotic AVF to those having clinical follow-up alone.

Methodology: All patients receiving an angioplasty for AVF stenosis over a two-year period were included (n=97). Patients receiving clinical follow-up (n=60) had repeat radiological intervention only if deemed clinically indicated by poor flows or rising venous pressures. Patients undergoing radiological follow-up (n=37) had a Doppler ultrasound 12 weeks after initial angioplasty. If this was normal they were discharged to clinical follow-up. If the ultrasound showed significant stenosis, repeat endovascular intervention was performed. If the ultrasound showed mild residual stenosis further surveillance ultrasound was performed every 12 weeks.

Results: 1.43 procedures/ patient were performed (range: 1-4). Mean time between interventions was 0.6+/-0.2 years. Of the patients followed up clinically, 6.5% failed prior to further intervention; 60% had a good result without further intervention; 33.5% required repeat fistuloplasty after symptoms developed (failed in 30%). Of those patients followed up radiologically, 27% had a satisfactory initial ultrasound and returned to clinical follow-up; 13.5% remained under radiological surveillance; 32.5% required repeat intervention (all successful). In the radiological follow-up group a total of 69 ultrasounds and 38 fistuloplasties were performed. In the expectant group 20 fistulograms, 70 fistuloplasties, 9 thrombectomies and 8 ultrasounds were performed. The cost of radiological follow-up is £415.27/patient/year (NNT 1.08) whilst expectant management is £543.09/patient/year (NNT 1.2).

Conclusions: There is a benefit in ultrasound surveillance following angioplasty of AVF, permitting early detection of recurrence, timely intervention and ultimately a more successful outcome. Furthermore, radiological surveillance would appear to be cost effective.

FISTULOPLASTY USING DRUG-ELUTING BALLOONS: A PILOT STUDY

N.Kibriya, A.Anjum, R.Gurujala, B.B.Shafi, S.Powell

Royal Liverpool University Hospital, Liverpool.

Purpose: The patency of an arteriovenous fistula for haemodialysis can be assessed using ultrasound and/or a fistulogram whereby stenoses can be identified. Currently in the event of a stenosis, standard balloon dilatation fistuloplasty can be performed. Drug eluting balloons (DEB) have been widely used in interventional cardiology and peripheral angioplasty with largely positive results. The drug bound to the balloon is paclitaxel which inhibits cell division, migration, inflammation and platelet action and therefore prevents re-stenosis. The purpose of this pilot study is to determine whether DEB fistuloplasty produces any advantage over basic balloon dilatation fistuloplasty in arteriovenous fistula maintenance and patency.

Materials and Methods: This prospective study observes 18 patients in total. 9 patients have undergone a DEB fistuloplasty and a further 9 patients with similar pathology have undergone a standard balloon dilatation fistuloplasty. The patients were then followed up with ultrasound at 4 weeks post fistuloplasty and 3 monthly intervals unless further intervention was required in the interim. The site of fistuloplasty, balloon diameter, complications and patency time were noted.

Results: The patients who had undergone a DEB fistuloplasty showed no significant increase in patency times of the arteriovenous fistula. 4 of the 9 patients demonstrated re-stenosis within 3 months. These patients also had similar complications such as a haematoma, stenoses at different sites and pseudoaneurysm from needling.

Conclusion: This pilot study demonstrates DEB fistuloplasty offers no significant additional benefit over standard balloon dilatation in the patency of an arteriovenous fistula. The greater cost of a drug-eluting balloon cannot be justified from these preliminary results.

THE ROLE OF CIRCULATING ENDOTHELIAL PRECURSOR CELLS IN THE DEVELOPMENT OF ARTERIOVENOUS FISTULAE USED FOR HAEMODIALYSIS

Vesey A¹, Gajree S², Glen J¹, Aitken E¹, Clancy M^{1/2}

¹Renal Transplant Unit, Western Infirmary, Glasgow

²BHF Glasgow Cardiovascular Research Centre, University of Glasgow

Purpose: Circulating endothelial precursor cells (CEPC) are central to vasculogenesis. Maturation of an autologous arteriovenous fistula (AVF) requires a large expansion of blood vessels and may depend on vasculogenesis. We aimed to evaluate the role of CEPCs in AVF maturation.

Materials & Methods: Patients with end-stage renal failure about to undergo creation of an AVF were recruited. Whole blood was sampled immediately pre-op, 2 days post-op and 4 weeks post-op. CEPC quantification was performed using a commercially available kit. Clinical and duplex ultrasound assessment was undertaken immediately pre-op and 4 weeks post-op. CEPC titres were correlated with clinical and ultrasonographic outcome data.

Results: Interim data are summarised (n=15). There was a trend to lower baseline CEPC titres in subjects compared to healthy controls. Smoking was significantly associated with lower baseline CEPC levels (p<0.0005). Day 2 post-op levels of CEPC were significantly higher than pre-op levels (p=0.028).

At the time of writing, 5 patients had completed 4 week follow-up with 100% primary patency. Fistula diameter was positively associated with immediate post-op rise in CEPC levels (p=0.015) but not with baseline CEPC levels.

Conclusion: Although these are early results, it has been demonstrated that a greater immediate post-op rise in CEPC count is associated with a larger fistula diameter at 4 weeks. It is hoped that these results will be confirmed and translate to clinical outcomes as more patients are recruited. A targeted pharmacological intervention designed to increase CEPC levels (e.g. erythropoetin) and potentially improve AVF patency could then be tested.

BRACHIAL VEIN TRANSPOSITION WITH ELEVATION – A NOVEL APPROACH TO INCREASE THE USE OF AUTOGENOUS FISTULA FOR DIALYSIS ACCESS

Authors: Dr. Stephen L. Hill, Dr. Ryan D. Evans ~ Physicians Care of Virginia

Contact: Dr. Stephen Hill, 1125 S. Jefferson St, Roanoke, VA USA

Phone: 540-982-1141; Fax: 540-982-8939; Email: slhill@pcvmed.com

Purpose: The continued emphasis on autogenous access has caused significant changes in dialysis access surgery. In order to meet this need in the enlarging population of patients with ESRD there will need to be innovative approaches and other autogenous sites for access than just the cephalic and basilic veins. We have found the upper arm brachial vein can provide an autogenous fistula in the many patients who do not have other suitable arm veins. Furthermore, we have devised a technique which obviates use of a tunnel and allows easy use for dialysis.

Materials and Methods: We have reviewed the use of a brachial vein transposition with elevation in one surgeon's practice over an eight year period. The number of patients, brachial vein transpositions, complications, and patency for use in dialysis is reported and analyzed.

Results: There were a total of 86 brachial vein transpositions in 81 patients. Twenty occluded acutely or prior to use in dialysis, leaving 66 (76.7%) which were available for dialysis. The technique is effective, done in one stage, and only requires elevation on subcutaneous tissue to be available for dialysis. Complications include aneurysm formation (5), occlusion (20), and stenosis requiring interventional dilatation (87 in 25 patients) or surgical vein patch angioplasty (3).

Conclusion: The continued emphasis on construction of autogenous fistula for dialysis access mandates new approaches in order to satisfy this demand. The use of the upper arm brachial vein allows the construction of autogenous fistulae in more patients without resorting to a prosthetic arteriovenous graft.

ABSTRACTS - SESSION 2

THIGH LOOP GRAFT FORMATION: DOES THE USE OF A LONG SAPHENOUS VEIN CUFF RESULT IN INCREASED VENOUS ANASTOMOTIC STENOSES?

ER Faulconer¹, M Field¹, K Tullett¹, R Jones², A Willis², NG Inston¹, D van Dellen³

Department of ¹Renal Transplantation and ²Radiology, Queen Elizabeth Hospital, Birmingham and ³Renal and Pancreatic Transplantation, Manchester Royal Infirmary, Manchester

Background: Thigh loop grafts form an important adjunct for complex arteriovenous access creation with acceptable patency rates. Surgical techniques including venous limb anastomosis to the long saphenous vein (LSV) stump. However, turbulent juxta-anastomotic flow may predispose to venous stenoses. We aimed to correlate this technique with the presence and anatomical site of complications.

Materials & Methods: Retrospective analysis was performed of a contemporaneously maintained database of thigh loop grafts at a single institution over 7 years (2004-2011). Graft patency was examined as a primary endpoint with interventions (number and type) as secondary endpoints. LSV cuff utilisation was assessed as a potential confounding factor.

Results: 27 patients had thigh loop grafts whilst 18 patients required radiological interventions (52 episodes; 9 stents; 7/18 in femoroiliac veins, 5/18 occurred at the venous anastomosis.) 7 of these patients had an anastomosis to a LSV cuff whilst 11 had anastomoses directly to the superficial femoral vein. 6/7 (85%) of the deep vein complication grafts had no cuff, whilst 3/5 (60%) of the venous anastomotic complication occurred in grafts with a cuff. 4 grafts were unsalvageable whilst 9 patients died and 4 were successfully transplanted. Primary patency was 52% at 1 year and 42% at 2 years.

Conclusions: Thigh loop grafts provide good patency rates in this complex group with concomitant interventional radiology expertise. It remains unclear whether a LSV anastomosis alters stenosis rates but it does appear to increase peri-anastomotic narrowings. This may be due to alterations in flow dynamics and requires further clarification.

THE CHANGING WORKLOAD BURDEN OF VASCULAR ACCESS ON AN EMERGENCY CEPOD THEATRE

Aitken E, Kingsmore DB

Department of Renal Surgery, Western Infirmary Glasgow

Purpose: We aimed to evaluate the burden which vascular access procedures placed on our emergency theatre workload.

Methodology: A retrospective audit was undertaken in our hospital which provides tertiary-referral vascular and renal services for most of the West of Scotland (January 2009- December 2011). Patients undergoing vascular access procedures in our emergency theatre were identified from theatre logbooks and electronic theatre records were used to determine the duration of each procedure. Cases were classified by CEPOD criteria. Results are presented as mean +/- SEM. p<0.05 is significant).

Results: The number of vascular access procedures (in particular creation of new AVF and complex access procedures) performed in emergency theatre is increasing year-on-year. The average length of time taken to perform each procedure (including anaesthetic time) is as follows: creation of AVF 1.78+/-0.34 hr; declotting 2.15+/-0.42; ligation 1.2+/-0.54hr; complex access procedures 2.7+/- 1.04hr. In 2011, the total theatre time used for vascular access procedures was 137.11 hours. A consultant was present in 85% of cases. Only 27% of cases were performed outwith normal working hours. 2.8% of the cases would be classified as "immediate", 6.9% as "urgent" and the rest (90.3%) as "expedited" by CEPOD definitions. This equates to 2.7 hours/week of "semi-urgent" vascular access procedures performed on the emergency theatre list.

Conclusions: Vascular access procedures constitute a significant proportion of the emergency theatre workload in our institution. The majority of cases would be classified as "expedited" by CEPOD guidelines. These patients might be better served by a dedicated semi-urgent half day vascular access list every week.

SPIRAL LAMINAR BLOOD FLOW IN AUTOLOGOUS ARTERIOVENOUS FISTULAE - A MARKER OF MATURATION

Marie Y, Mellor S, Krishnan H, Field M, Tullett, K, Jones R, Inston NG

Dept Renal Surgery and Radiology, Queen Elizabeth Hospital Birmingham, University Hospitals Birmingham NHS Trust, Edgbaston, Birmingham, B15 2WB

E-mail for correspondence: nicholas.inston2@uhb.nhs.uk

Purpose: Following AVF formation, a palpable thrill is regarded as a marker of a successful surgery. Previous studies have shown that flow above the swing segment in an AVF with a thrill is spiral laminar flow (SLF) rather than turbulence. The aim of this study was assessment of flow pattern in AVFs at formation and the effect on maturation.

Materials and Methods: Using Doppler Ultrasound 56 sequential patients were assessed 5cm above the swing segment immediately postoperatively and at six weeks. Clinical assessment for a thrill and pattern of blood flow was reported as SLF or non-SLF.

Results: Radiocephalic (n=23), Brachiocephalic (n=29) and 1st stage Brachiobasilic (n=4) were assessed. A thrill was present in 45 patients. 3 patients had no flow and 8 patients had pulsatile flow.

In patients with a thrill, there was SLF in 82%. In all patients with no thrill, SLF was not observed ($p < 0.001$; χ^2).

Of the 51 patients attending six week follow up, 41 patients had a mature AVF (80%). Of these 76% had had SLF postoperatively. Only one patient with SLF failed to mature (3%). In the group with no SLF, 5 of the 15 AVFs failed to mature (66%; $p < 0.005$ χ^2).

Conclusions: SLF was present immediately postoperatively in AVFs with a thrill. In addition, it appears that SLF occurs at a site where stenosis rarely occurs supporting SLF as a protective flow pattern which may also be a useful predictive factor.

POST OPERATIVE ARTERIO-VEIN FISTULA FLOW INFLUENCES PATENCY FOLLOWING ACCESS SURGERY: DIABETES MAY NOT INFLUENCE THE OUTCOME

C Lord, KS Benaragama, BJ John, J Zheng, J Medhora, S Sandoval, BS Fernando, B Lindsey, C Forman

Department of Renal Transplantation, Royal Free Hospitals NHS Foundation Trust, London, United Kingdom

Introduction: Pre-emptive native arterio-venous fistula (AVF) formation is the gold standard access for patients requiring haemodialysis. There is conflicting evidence as to whether diabetes is an independent risk factor for fistula failure. In this study we aim to find out whether diabetes affects the patency rates of fistulae in our population.

Material and Methods: Consecutive patients undergoing upper limb brachial / radial fistulae were retrospectively included. Demographic details, co-morbidity, preoperative arterial and venous calibre were collected. Flow was evaluated six weeks post operatively. Patients with zero flow, deaths during the study period, transplanted patients and incomplete data were excluded. Primary patency was defined as a functioning fistula that did not require any radiological/surgical intervention to maintain patency. Secondary patency was a functioning fistula that required at least one intervention to maintain patency.

Results: 146/201 (76 radiocephalic and 70 brachiocephalic/basilic) patients were included, of which 47% were diabetic. On univariate analysis increased vein calibre ($p=0.01$) and flow ($p<0.001$) were positively correlated with both primary and secondary patency. There was a trend towards poorer secondary patency in diabetics ($p=0.07$). On multivariate analysis however the only significant factor was flow rate with a stronger correlation with primary ($p<0.001$) than secondary ($p=0.004$) patency. Age, gender, ethnicity, type of fistula, hypertension and preoperative arterial caliber did not influence outcome.

Conclusion: Post operative fistula flow is the most important predictor of future patency. The impact of diabetes remains unclear, but the clinical effect is unlikely to be large.

ABSTRACTS - SESSION 2

DIALYSIS FISTULAE THROMBOSIS: OUTCOMES IN NORTHERN IRELAND

Reaney J, Boyd C, Loan W, Hill C, Hanco J
Belfast City Hospital, Belfast Health and Social Care Trust

Purpose: European Best Practice Guidelines (EPBG) recommend arteriovenous fistulae (AVF) thrombosis be treated as soon as possible or within 48hours.¹ The purpose of this study was to determine patency rates following AVF salvage in Northern Ireland based on time from AVF thrombosis to interventional radiology (IR) procedure.

Materials and Methods: Retrospective study from 2009-2011. Inclusion criteria: patients referred to IR with indication 'fistula salvage' plus evidence of thrombosis on ultrasound and/or angiography. Exclusion criteria: no AVF thrombosis date recorded or salvage not attempted. For analysis, timing to AVF salvage was divided into 3 categories: <48hrs (Group 1), 48hrs to 7 days (Group 2), >7 days (Group 3).

Results: Thirty patients were included (6 patients excluded). Patient demographics: male 73%, mean age 60.6 years and 47% upper-arm AVF. Immediate patency was 80%: 85% in Group 1 (n=13), 77% Group 2 (n=13) and 75% Group 3 (n=4); the longest time from AVF thrombosis to successful salvage was 13 days. Overall at 1, 3 and 6 months, primary patency was 40%, 37%, 33%; secondary patency was 47%, 43%, 40% respectively. Patients with immediate patency (n=24), prescribed warfarin post-salvage had greater 1 month primary patency (75%) than those who did not (38%) (p=0.193).

Conclusion: Despite EPBG, immediate patency rates were similar between AVF salvage <48hrs and >48hrs after AVF thrombosis. Immediate patency rates were good; the reason for lower patency rates at 1 month is not clear and requires further investigation. Of interest there was a trend towards better 1 month patency in those who received warfarin after successful AVF salvage.

Duplex ultrasound volume flow measurements before and after haemodialysis in patients with native arteriovenous fistulae (AVF).

Stephenson M A, Mistry H, Chowdhury S., Freedman B et Valenti D
Department of Vascular Surgery King's College Hospital London

Aim: With an ever-increasing population within the U.K. developing end stage renal failure, maintaining adequate haemodialysis treatment via AVF has become clinically vital as the optimal method of vascular access. The U.K. Renal Association has recommended flow measurements as a preferred modality for AVF surveillance. The aim of this study was to determine the difference in flow measured with duplex ultrasound prior to and after a single haemodialysis session in patients with brachiocephalic fistulae. The secondary aim was to determine associations between flow changes and factors of blood viscosity variation induced by haemodialysis ultrafiltration.

Methods: Patients with brachiocephalic AVF who were undergoing haemodialysis three times a week without recent intervention (<6 weeks) were invited for inclusion into the study. In total, 61 patients were recruited from the main renal unit and five satellite sites across South East London and Kent. Flow measurements were made pre-and post-haemodialysis using a Zonare portable ultrasound machine. The vascular scientist was always blinded to the pre-haemodialysis flow. Haematological and physiological blood viscosity measures were recorded for each patient.

Results: Paired t-test showed a statistically significant reduction of 105.27ml/min (P = 0.0257) post haemodialysis. However, this change was shown to be within the limits of observer variability shown by Bland-Altman analysis to be between -173.04ml/min and +216.86ml/min. Haematological and physiological measures showed no statistically significant association with the change in flow observed post-haemodialysis (p > 0.05).

Conclusion: Practicality and financial considerations of implementing an AVF surveillance programme are likely to outweigh the minimal benefit of consistency that would be enabled by strict protocol of pre-haemodialysis flow measurements. Therefore, this study confirms the validity of our current AVF surveillance protocol. This may be used as a pilot study for larger studies in the future.

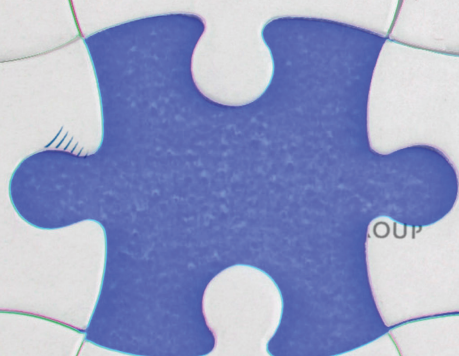
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