2nd PARC TAULÍ INTERNATIONAL

VASCULAR ACCESS SYMPOSIUM

April 7-8, 2016

Sabadell, Barcelona
SYMPOSIUM INFORMATION

Important symposium dates:

- Online Registration opens: December 2, 2015
- Abstract Submission opens: December 16, 2015
- Pre-Symposium Workshop: April 5-6, 2016
- Symposium Sessions: April 7-8, 2016

WITH SUPPORT OF:

- Centre d’Educació Mèdica basada en la Simulació. Corporació Sanitària Parc Taulí
- Catalan Society of Nephrology and its Working Group of Vascular Access
- Spanish Society of Nephrology
- GEMAV. Spanish Multidisciplinary Working Group on Vascular Access
- Catalan Society of Angiology, Vascular and Endovascular Surgery
- Spanish Society of Angiology and Vascular Surgery
- Spanish Society of Dialysis and Transplant
- Spanish Society of Vascular and Interventional Radiology
- Vascular Access Society
- European Renal Association – European Dialysis and Transplantation Association
- International Society of Nephrology

AIMED AT:

The PTIVAS target audience includes: nephrologists, vascular surgeons, interventional radiologists, nurses and residents in training.

HEALTH INTEREST AND ACCREDITATION

Has been accredited by the European Accreditation Council for Continuing Medical Education (EACCME) to provide the following CME activity for medical specialists.

12 European CME credits (ECMEC).

Activitat acreditada pel Consell Català de Formació Continuada de les Professions Sanitàries - Comisión de Formación Continuada del Sistema Nacional de Salud. (09/10401-MD). Pending
WELCOME

We are preparing for the upcoming Second Parc Taulí International Vascular Access Symposium, 2nd PTIVAS 2016, and we would like to invite you to share our experience in Sabadell, Barcelona, in April, 2016.

The aim of PTIVAS is try to provide a comprehensive coverage of the field of vascular access in the dialysis patient in the areas of higher interest in daily clinical practice. In this edition the purpose is to cover three main objectives: review the current state in the fundamental topics in vascular access, highlight the latest trending topics and discuss regulation in vascular access training and certification. At the same time, we would like to give the opportunity to professionals of different interest areas to present their experiences with abstract submissions.

The perspective of the meeting is based on a multidisciplinary approach, with the participation of nephrology, vascular surgery, interventional radiology and infirmary. Main topics will be presented in round tables with invited speakers, panel discussions and poster sessions to encourage multidisciplinary interactions.

Prior to the symposium we offer a workshop: the V Edition of the theoretical and practical Workshop to update Ultrasound and Multidisciplinary approach in Vascular Access. The workshop will provide a practical review of ultrasound use in vascular access with hands on sessions with patients and simulation models. The objective of this course is to help the specialist involved in the care of vascular access, and who already has expertise in ultrasound, to consolidate and improve their skills and update their training in vascular access, from arteriovenous fistula pathology diagnosis to catheter ultrasound guided placement.

2016 Symposium Topic Highlights:

- Vascular Access Creation
- Vascular Access Surveillance
- Complications treatment. Interventional and surgical approach.
- Catheter
- Vascular access care
- Epidemiology
- Regulation in vascular access training and certification

We hope to provide a comfortable environment for learning and share your experience. We hope that you enjoy multidisciplinary interactions for the better understanding of the vascular access approach in the dialysis patient.

We look forward to welcoming you to Sabadell.

Jose Ibeas, MD, PhD
Chairman, Organizing Committee
COURSE VENUE
Auditorium Taulí nou
Corporació Sanitaria Parc Taulí
Parc Taulí, 1
08208. Sabadell (Barcelona)

ACCOMMODATION
Gran Hotel Verdi ****
C/ Francesc Macià, 62. 08206 – Sabadell
Room /day: 75 € + VAT (breakfast included)
The reservation and payment of accommodation must be made through the Technical Secretariat.

COURSE SECRETARIAT
Ester Freixa
Fundació Parc Taulí
E-mail efreixa@tauli.cat

REGISTRATION INFORMATION
For Registration, send an e-mail efreixa@tauli.cat

PRICE IN EUROS (VAT not included)

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* Fellows and Residents - Letter of verification from Department Head required.

Includes:
- Attendance at the symposium, and documentation CD, coffee breaks, lunch and certificate of attendance.
- Reduction in the membership fee of the Vascular Access Society for a year, which includes electronic subscription to the Journal of Vascular Access.

Cancellation: Up to 10 days before the course starts. Subsequently we do not refund the registration fee.

PAYMENT
Bank transfer to: Banc de Sabadell
IBAN: ES69-0081-5154-22-0002103622
SWIFT: BSABESBB
ORGANIZING COMMITTEE

Chairman
Jose Ibeas, MD, PhD. Nephrology

Organizing committee
Jose Ibeas, MD, PhD. Nephrology
Joaquim Vallespin MD. Vascular Surgery
Jose R. Fortuño. MD. Interventional Radiology
Ramon Roca-Tey. MD, PhD. Nephrology
Montserrat Marcet. Nursing

Hospital de Sabadell. Corporació Sanitària Parc Taulí. Sabadell. Barcelona

FACULTY

Guest Faculty

Kenneth Abreo, MD. Nephrology Department. Louisiana State University Health Shreveport, Shreveport, LA, and Boston University Medical Center, Boston, MA, USA. President of American Society of Diagnostic and Interventional Nephrology (ASDIN), Certification and accreditation committee and Education Committee

Marisa Agostinho, RN. Coimbra Dialysis Clinic and NephroCare Vascular Access Center, Portugal

Pierre Bourquelot. MD, Department of Angioaccess Surgery, Clinique Jouvenet, Paris - France. Past-President French Society of Vascular Access (SFAV)


Maurizio Gallieni. MD, Nephrology and Dialysis Unit, Ospedale San Carlo Borromeo, Milan - Italy. Past-President of the Vascular Access Society


Dr José Gil, MD Department of Vascular Surgery. Hospital Puerta de Hierro, Madrid

James Gilbert MD. Consultant Transplant & Vascular Access Surgeon at Oxford University Hospitals NHS Foundation Trust. United Kingdom.

Rick de Graaf, MD, PhD. Department of Radiology, Maastricht University Medical Centre. Holland

Ignacio Hernandez Lahoz. MD. Department of Vascular Surgery. Hospital Montecelo. Pontevedra
Nick Inston, MD, PhD. Consultant Surgeon and Clinical Lead for Renal Surgery and Transplantation at Queen Elizabeth Hospital Birmingham - United Kingdom. President of The Vascular Access Society of Britain & Ireland

Ana Junque, RN, Nephrology Department. Hospital de Terrassa, Consorci Sanitari Terrassa, Terrassa, Barcelona, España. Brand Ambassador European Dialysis and Transplant Nurses Association/European Renal Care Association

Konstantinos Katsanos, MD, PhD. Department of Interventional Radiology Guy's and St. Thomas' Hospitals. NHS Foundation Trust. King's Health Partners and Department of Imaging Sciences & Biomedical Engineering School of Medicine King's College London. United Kingdom.

Edward Wolfgang Lee, M.D., Ph.D., Division of Interventional Radiology, UCLA, Los Angeles, CA, USA


Jan Malik, MD, PhD. Third Department of Internal Medicine, General University Hospital and First Faculty of Medicine, Charles University, Prague, Czech Republic. President elect of the Vascular Access Society (VAS)

Anna Martí, RN, Nursing Supervisor, Nephrology Department, Hospital General y Universitario de Valencia. Valencia, Spain. Spanish Multidisciplinary Working Group on Vascular Access (GEMAV), Past-President of European Dialysis and Transplant Nurses Association/ European Renal Care Association (EDTNA/ERCA)

Wolfgang Meichelboeck, Dipl.-Ing., Pentenried, Germany


Gaspar Mestres, MD, PhD. Department of Vascular Surgery, Vascular Access Unit, Hospital Clinic, University of Barcelona, Barcelona, Spain. Coordinator of the Vascular Access Working Group of the Catalan Society of Angiology and Vascular Surgery

Manuel Miralles, MD, PhD. Chief of the Vascular Surgery Department of the Hospital Universitari I Politècnic La Fe, Valencia, Spain. President of the Spanish National Commission of Vascular Surgery Specialty


Manuel Pacheco. MD. Interventional Radiology, Hospital Juan Ramón Jiménez. Huelva, Spain.

Jose Luis del Pozo, MD, PhD. Division of Infectious Diseases and Clinical Microbiology, University Clinic of Navarra, Pamplona - Spain. Spanish Multidisciplinary Working Group on Vascular Access (GEMAV)


Thomas Schmitz-Rixen, MD, PhD. Dep. of Vascular and Endovascular Surgery, Goethe-University-Hospital Frankfurt, Germany

Surendra Shenoy, MD, PhD. Section of Transplantation, Department of Surgery, Washington University in St. Louis, St. Louis, Mo; Washington University School of Medicine in St. Louis, St. Louis, Mo. USA. President of the Vascular Access Society of the Americas (VASA)

Local Faculty

Anna Alguersuari, MD. Interventional Radiology, UDIAT, Parc Tauli Sabadell, University Hospital, Barcelona. Vascular Access Program

José-Ramón Fortuño, MD. Interventional Radiology, UDIAT, Parc Tauli Sabadell, University Hospital, Barcelona. Coordinator of the Interventional Radiology area of the Vascular Access Program.


Elena González, MD. Coordinator of the Vascular Surgery Department Corporació Sanitària Parc Taulí.

Jose Ibeas, MD, PhD. Nephrology Department, Coordinator of the Vascular Access Program. Parc Taulí Sabadell Hospital University Hospital, Barcelona. Vascular access working groups of the Catalan Society of Nephrology and the Spanish Society of Nephrology (GEMAV). Working group of Interventional Nephrology of the Spanish Society of Nephrology. Council of the Vascular Access Society (VAS). International Committee of the American Society of Diagnostic and Interventional Nephrology (ASDIN)

Rubén Iglesias. RN. Nephrology Department, Vascular Access Program. Parc Taulí Sabadell Hospital University Hospital, Barcelona. Hemodialysis Consultant at EDTNA/ERCA - European Dialysis and Transplant Nurses Association/European Renal Care Association

PROGRAM
THURSDAY - APRIL 7

07:00 - 07:30 h
Registration and Breakfast

07:30 - 08:30 h
Welcome and opening of the course
Cristina Carod
Executive Director, Hospital de Sabadell and Albada
Corporació Sanitària Parc Taulí

Jaume Almirall
Chief of Nephrology Department

Introduction and symposium objectives
José Ibeas

Trends in ESRD and Vascular Access epidemiology – What happens around the world
Wolfgang Meichelboeck

Multidisciplinary Team: fact or fiction
Maurizio Gallieni

08:30 - 12:15h

VASCULAR ACCESS CREATION
Moderators: Antonio Giménez Gaibar - Anna Alguersuari

- 08:30 – 09:45 h
Fundamentals in VA creation
  - What about mapping: selected or for everybody?
    Joaquim Vallespin
  - Graft indications and procedures
    Cristina Lopez Espada
  - Vascular access in incident heart failure patient: is it possible to avoid the catheter?
    Ramón Roca-Tey
09:45 – 11:15 h

**Latest trending topics in VA creation**

- Endovascular arteriovenous fistula creation  
  *Rick de Graaf*

- Early cannulation graft: is it worth it?  
  *Ignacio Hernández Lahoz*

- Bioprosthesis for Vascular Access: myth or reality?  
  *Nick Inston*

- Hero Vascular Access device: Benefits, but complications?  
  *James Gilbert*

11:15 – 11:45 h

Break

11:45 – 12:15 h

**Vascular access creation: Oral communications**

- Prosthetic vascular access outcomes in elderly: single centre results  
  *Matteo Tozzi, Circolo University Teaching Hospital, University of Insubria School of Medicine. Varese, Italy*

- Value of preoperative ultrasound mapping in native arteriovenous fistulas for hemodialysis in elderly patients  
  *Rui Abreu, Nephrology Departament, Centro Hospitalar Trás-os-Montes e Alto Douro Real. Portugal*

- Ultrasound mapping in high risk of fistula failure. Controlled study with 5 years follow up  
  *Sara Rioja, Corporació Sanitària Parc Taulí. Sabadell, Spain*
12:15 - 16:00 h

**VASCULAR ACCESS SURVEILLANCE**

*Moderators: Ramon Roca-Tey, Jose Ibeas*

- **12:15 – 13:30 h**

  **Fundamentals in VA surveillance:**
  
  - Surveillance for AVF: is it worth it?  
    *Ramón Roca-Tey*
  
  - Surveillance for AVG: an impossible dream?  
    *Jose Luis Merino*
  
  - Doppler Ultrasound: is it a third generation method?  
    *José Ibeas*

- **13:30 – 14:30 h**

  Lunch

- **14:30 – 15:15 h**

  **Latest trending topics in VA surveillance**
  
  - Do stenosis characteristics influence prognosis?  
    *Jan Malik*
  
  - Surveillance from the USA perspective  
    *Kenneth Abreo*

- **15:15 – 16:00 h**

  **Vascular access surveillance: oral communications**
  
  - Reducing thrombosis in arteriovenous fistula  
    *Inés Aragoncillo, Hospital Gregorio Marañón, Madrid, Spain*
  
  - It is worth keeping a multidisciplinary arteriovenous fistulae monitoring and surveillance program?  
    *Susana Pereira, Centro Hospitalar de Vila Nova de Gaia, Oporto, Portugal*
  
  - Doppler ultrasonography role in significant stenosis definition  
    *Ana Castro, Grupo de Estudos Vasculares, Oporto, Portugal*
  
  - Usefulness of Vector Volume Flow for Hemodialysis Access: A Future Trend to Explore?  
    *Ilaria Fiorina, Fondazione IRCCS Policlinico San Matteo, Pavia, Italy*
16:00 - 19:15 h

TREATMENT OF COMPLICATIONS:

Moderators: José García Revillo - Elena González

- 16:00 – 17:00 h
  Fundamentals in vascular access complications:
  - Early fistula failure: best approach
    Manuel Pacheco - Teresa Moreno
  - Steal syndrome: best approach
    Pierre Bourquelot
  - Approach to aneurysms
    Gaspar Mestres

- 17:00 – 17:30 h
  Break

- 17:30 – 18:45 h
  Latest trending topics in vascular access complications
  - Drug eluting balloon for the treatment of failing dialysis access: do we have evidence?
    Konstantinos Katsanos
  - Surgical management of cephalic arch and central venous occlusive disease
    Surendra Shenoy
  - Covered Stents and its role in the recovery of vascular access
    José Gil
  - Surgical management of deep outflow veins
    Surendra Shenoy

- 18:45 – 19:15 h
  Oral communications
  - Mid-term Results of a Stapling Technique For Autogenous Aneurysmal Arterio-Venous Fistula Repair
    Matteo Tozzi, Circolo University Teaching Hospital, University of Insubria School of Medicine. Varese, Italy
  - End stage vascular access failure-one problem, which solutions?
    Joana Gameiro, Hospital Santa Maria, Lisbon, Portugal
FRIDAY - APRIL 8

08:30 - 13:30 h

REGULATION IN VASCULAR ACCESS TRAINING AND CERTIFICATION.
WHERE WE ARE AND WHERE WE ARE GOING
Moderators: Jose Ibeas, Jose Luis Merino

- 08:30 – 11:00 h

What about countries:

- Italy
  Carlo Lomonte

- France
  Pierre Bourquelot

- Germany
  Thomas Schmitz-Rixen

- UK
  Nick Inston

- Spain. Nephrology
  José Ibeas

- Spain. Interventional Radiology
  Maria Dolores Ferrer

- Spain. Vascular Surgery
  Guillermo Moñux

- USA – ASDIN
  Kenneth Abreo

- 11:00 – 11:30 h

Break
11:30 – 13:30 h

What about Societies:

- Spanish/European Society of Vascular Surgery (SEACV – ESVS)
  Manuel Miralles
- Spanish/European Society of Interventional Radiology (SERVEI – CIRSE)
  Enrique Esteban
- Spanish/European Society of Nephrology (SEN – EDTA)
  Jose Luis Merino
- Vascular Access Society (VAS)
  Maurizio Gallieni
- Vascular Access Society of the Americas (VASA)
  Surendra Shenoy

13:30 - 14:30 h
Lunch

14:30 - 16:45 h

DIALYSIS CATHETERS
Moderators: Manel Ramirez de Arellano, Anna Alguersuari

14:30 – 15:30 h

Fundamentals in Hemodialysis Catheter:

- Best approach for dysfunction management
  Anna Alguersuari
- Catheter lock
  José Ibeas
- Best approach for biofilm and infection management
  Jose Luis Del Pozo
• 15:30 – 16:30 h

**Last trending topics in Hemodialysis Catheter**

- Catheter designs: impact on performance?
  *Maurizio Gallieni*

- Coated catheters: Does it work?
  *José Ibeas*

- The technology of the new materials for enhanced hemodialysis performance
  *Edward Wolfgang Lee*

• 16.30 h - 16:45 h

**Catheter: Oral communications**

- Optimized catheter-related bacteremia in dialysis: 6-year prospective study using only universal measures.
  *Ramiro Cazar. Hospital de Alcorcón, Madrid*

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16:45 - 17:15 h

Break

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17:15 - 19:00 h

**VASCULAR ACCESS CARE**

*Moderators: Anna Martí, Anna Junqué*

• 17:15 - 18:30 h

- Arteriovenous access needling: an Update
  *Ramón Roca-Tey*

- Button Hole for selected patients
  *Rubén Iglesias*

- Individualized vascular access self-care
  *Pilar Caro*

- Self-cannulation
  *Marisa Agostinho*
18:30 – 19:00 h

Oral communications

- Subcutaneous Implantable Electronic Devices in Renal Patients
  Adam Austin, Albany Medical College, New York, United States

- Outcome after arteriovenous fistula creation: a single center experience from Belgium
  Concetta Catalano, CHU Brugmann, Brussel, Belgium

- Vascular Access in Patients with Kidney Transplant Failure
  Ariana Azevedo, Hospital Curry Cabral – Centro Hospitalar Lisboa Central, EPE, Lisbon, Portugal

19:00 – 19:15 h

Presentations awards and symposium closure
ORAL COMMUNICATIONS
PROSTHETIC VASCULAR ACCESS OUTCOMES IN ELDERLY: SINGLE CENTRE RESULTS

Matteo Tozzi, MD; Marco Franchin, MD; Antonino Tarallo, MD; Hamdia Abdullah; Patrizio Castelli, MD FACS; Gabriele Piffaretti, PhD MD

Vascular Surgery. Department of Surgery and Morphological Sciences
University of Insubria School of Medicine Circolo University Teaching Hospital, Varese – Italy

Aims:
Literature suggests that HD fistula patency may be lower among older dialysis patients if compared to younger population. NKF guideline for central venous catheter (CVC) placement includes age and comorbidity. The aim of the present study is to report our results of prosthetic arteriovenous fistulas creation in elderly population.

Materials and methods:
The present is a single center experience with retrospective analysis of prospectively collected patients. We considered all the patients aged 70 years or over that underwent prosthetic vascular access creation between 2011 and 2015. Primary end-point was to evaluate mortality rate, primary patency, number of access per person and need for central venous catheter placement.

Results:
We treated 60 patients (M:F 2:1; mean age 77.5 ± 4.8yrs, range 70 – 91yrs). Fifty-eight grafts were implanted in the upper limb, two in the lower. Graft implantation was technically successful in all cases. In-hospital mortality and major local or systemic morbidity were not observed. The mean follow-up was 542 days (range 59 -1345). Nine (15%) patients died during the follow-up: causes of death were not related to pVA and included intestinal perforation (n = 1), cerebral haemorrhage (n=1), neoplasms (n=2) and AMI (n=5). Thrombosis occurred in 20 cases, in 4 cases thrombosis occurred more than once. Overall, primary patency was 73.3%. Graft explant and prosthetic access re-do was necessary in 9 (15.0%) patients: thrombosis (n = 3), infection (n = 2), DASS (n = 1). Secondary patency was 85.0%. In no case a central catheter placement was necessary.

Conclusions:
Prosthetic vascular access placement in elder patients proves to be safe and effective in terms of mortality, complications and patency rates.
Outcomes are comparable to whom reported in literature for standard population.
VALUE OF PREOPERATIVE ULTRASOUND MAPPING IN NATIVE ARTERIOVENOUS FISTULAS FOR HEMODIALYSIS IN ELDERLY PATIENTS

Rui Abreu¹; Sara Rioja²; Joaquin Vallespin²; Xavier Vinuesa³; Ruben Iglesias¹; José Ibeas³

¹ Nephrology Department, Centro Hospitalar Trás-os-Montes e Alto Douro, Vila Real, Portugal
² Vascular Surgery Department, Hospital Universitari Parc Taulí, Sabadell, Barcelona, Spain
³ Nephrology Department, Hospital Universitari Parc Taulí, Sabadell, Barcelona, Spain

Aims of the study:
The introduction of Doppler ultrasound (US) has changed the approach to vascular access surgery for hemodialysis. The integrity of veins and arteries are usually compromised in specific population like elderly patients. The aim of this study was to analyze survival of native arteriovenous fistulas (AVFs) in older patients and determine predictors of AVF early failure and secondary patency.

Methods:
A prospective and uni-center study was conducted. Inclusion criteria were elderly patients (≥ 65 years) submitted to preoperative US mapping and native AVF placement between January 2011 and December 2015. Clinical, laboratorial and US data were collected.

Results:
Sixty native AVF were created. Median age was 75 (69-80) years and they were predominantly men (68.3%, n=41). Hypertension, diabetes, arteriopathy and tobacco use were present in 92.9% (n=39), 59.5% (n=25), 45.2% (n=19) and 28.6% (n=12), respectively. Almost half patients had a distal AVF (49.2%, n=29). Median Charlson index was 7 (6-9). Hemoglobin, calcium, phosphorus and PTH were in recommended range levels for dialysis patients. Secondary patency at 5 years and early failure were 68.3% and 21.7%, respectively. No clinical or analytical differences were seen between patients with or without a patent vascular access. In univariate analyse, higher radial (p=0.014) and cubital peak systolic velocity (p=0.039) were associated to longer vascular access survival. AVF with smaller vein diameter (p=0.036) and lower radial peak systolic velocity (p=0.035) were likely to fail in the first month.

Conclusions:
Doppler US evaluation can have the responsibility for good patency rate and distal AVF predominance in these patients, searching suitable vessels that could not be identified at physical examination. Distal hemodynamic and vein diameter showed some predictable value in secondary patency and early AVF failure. Increasing aging with multiple comorbidities could justify a systematic preoperative US mapping.
Background:
It has been suggested the usefulness of mapping for prevention of failure in patients with higher risk but recommendation is not well established. The aim is to evaluate the usefulness of ultrasound mapping in AVF patency in high risk patients for fistula failure.

Materials and Methods:
1. Prospective cohorts study. Reference University Hospital with a multidisciplinary team.
2. Groups:
   2.1. Control: Preoperative physical examination by a specific vascular surgeon
   2.2. Ultrasound (US): Preoperative ultrasound examination by a nephro-surgical team
   2.3. Surveillance (both groups): by US
3. Treatment: Surgery/angioplasty depending stenosis location. In juxtaanastomotic area: surgery; in the rest: angioplasty
4. Risk variables: Hypertension, diabetes, anteriopathy, > 75 y.o., female and radial artery
6. Data Record: NephroCloud®

Results:
1. Patients. n=600. Control: 287; US: 313
2. Age: 64.7±15.4 Gender: 60.7 % Male, 40.3% female; location: radial 50.3 %, brachial 49.7 %
3. There is no significant difference between two groups at 5 years. Control 54%; US: 63% (p= 0.2).
   No significant difference by hypertension, diabetes or arteriopathy.
4. After stratifying by risk factors, the patency to 1, 2, 3, 4 and 5 years was:
   4.1. > 75 y.o. Control: 63%, 61%, 61%, 56%, 56%; US: 77%, 69%, 67%, 64%, 64% (p= 0.2)
   4.2. Sex= female. Control: 60%, 56%, 56%, 49%,49%; US: 70 %, 66%, 63%,62%,62%, (p= 0.1)
   4.3. Radial artery: Control: 59%, 52%, 52%,51%,49%; US: 67 %, 63%, 61%,61%,61% (p= 0.1)
   4.4. Combination > 75 y.o. + female: Control: 50%, 50%,50%,50%; US: 75%, 66%, 62%,58%,58% (p= 0.2)
   4.5. Combination: > 75 y.o. + female + radial: Control: 28%; 28%; 28%; 28%; 28%; US: 84%, 68%, 62%,62%,62% (p < 0.05)

Conclusions:
US mapping can be helpful for AVF planning in high risk patients for fistula failure. The results of secondary patency in patients with the combination of older age, female sex and distal vessels can be comparables to general dialysis population
Quarterly access blood flow measurement in native arteriovenous fistula: Reduction in thrombosis rate and improvement in assisted surveillance rate. A randomized clinical trial.

Introduction:
Stenosis is the main cause of arteriovenous fistula (AVF) failure. It is still unclear if surveillance measuring vascular Access blood flow (QA) enhances AVF function and longevity.

Methods:
We show a 3-year follow up randomized, controlled, multicentric, open trial, comparing QA surveillance and pre-emptive repair of subclinical stenoses (using angioplasty and/or open surgery) with standard monitoring and surveillance and intervention based upon classics criteria. The main purpose of the trial is to clarify if the QA measurement can improve the longevity of mature forearm autologous AVFs.

AVFs were randomized to either control group (surveillance using classic parameters, increased venous pressure, recirculation, decreasing in dialysis dose; n=104) or to a QA measurement group [QA has been measured every three months using two methods, doppler ultrasound and ultrasound dilution method (transonic). n= 103].

Criteria for intervention in QA group was a 25% decrease in QA, a QA under 500 ml/min or the detection of a significant stenosis (50% reduction in vessel lumen) with hemodynamic repercussion (PSV>400 ml/min or PSV pre-stenotic/PSV stenotic > 3).

Results:
At the end of follow up we found a significant reduction in the thrombosis rate (0.025 thrombosis/patient/year in the QA group compared with 0.086 thrombosis/patient/year in the control group. p= 0.007) Assisted primary patency rate was higher in QA group than in control group AVFs (HR 0.30 CI 0.11-0.82. P=0.011) and there was a trend to improve secondary patency rate in QA group (HR 0.54 CI 0.26-1.12. p=0.086). There was no significant difference in non assisted primary patency rates between groups (HR 1.04 CI 0.63-1.72. p=0.865).

The number of central venous catheter (CVC) and surgeries related with VA was lower in QA group. Cost efficacy analysis will be performed during the next month.

Conclusion:
QA based surveillance combining doppler ultrasound and ultrasound dilution method prevents thrombosis, increases assisted primary patency rate in AVF and reduces the needs of CVC and VA surgeries. There is a trend improving secondary patency rate.
THROMBOSIS RATE AND ASSISTED PRIMARY PATENCY

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<td>O2 group</td>
<td>5 thrombosis (0.025 thrombosis/patient/year)</td>
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<td>Control group</td>
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Hazard Ratio: 0.30
IC 0.11-0.82
p= 0.011

SECONDARY PATENCY

Hazard Ratio: 0.51
IC 0.26-1.12
p= 0.085
IT IS WORTH KEEPING A MULTIDISCIPLINARY ARTERIOVENOUS FISTULAE MONITORING AND SURVEILLANCE PROGRAM?

Susana Pereira¹; Simone Gonçalves²; Christophe Moreira³; Sónia Marques³; Ana Marta Gomes¹; Ana Ventura¹

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Introduction:
The vascular access is critical on chronic haemodialysis patients. A well functional arteriovenous fistula (AVF) is associated with reduced morbidity and mortality. Monitoring and surveillance program for early recognition and treatment of vascular access (VA) dysfunction could increase patency rates, reducing number and time on central venous catheters (CVC).

Aim:
Analyse the results from our monitoring and surveillance program for AVF, implemented since April 2011. This approach relies on a monthly basis systematic physical examination and measure of static intra-access pressure, associated with intra access flow measure with transonic every other month. Well-trained team of nurses coordinated by nephrologists makes this evaluation. Endpoints were number of VA thrombosis and catheter rate. Patients with follow-up lower to 6 months were excluded.

Results:
Overall we included 169 patients with AVF (75 with well function vascular access on April 2011, and afterward 94 patients enter to this program); mean age of 68, 106 were male and 61 were diabetics. They were on haemodialysis meaning time of 54 months (minimum and maximum 7 and 305). During the follow-up time, mean 35 months, we detect 245 VA problems in 119 patients (5,1% had at least 3 complications). They were solved by endovascular angioplasty in 73 (29,8%), 75 (30,6%) with surgery and 12 with hybrid procedures (4,9%). New vascular access was created in 10,4%. No additional procedure was necessary in 24,0%, just surveillance. We registry 13 thrombosis, 6 well succeeded allowing immediately AVF cannulation, and 7 need CVC temporarily until new VA matured. Five patients needed also a central line and 3 remain with it because no vascular access options or comorbidity/end-of life plan care.

Conclusion:
Our monitoring and surveillance program detect early VA problems leading to a reduced thrombosis rate (0,03 for patients/year at risk). Nurses, supported by skill nephrologists and vascular surgeons team, play a central role in this process.
Arteriovenous fistulas (AVFs) are the preferred vascular access in hemodialysis patients. Stenosis and thrombosis are the major causes of loss of vascular access patency and international guidelines recommend surveillance for their early detection and correction. Unnecessary interventions traumatize vessel wall, which in turn accelerates restenosis. The definition of significant stenosis varies among centres and remains controversial.

A 4 year prospective study was performed to evaluate AVFs who were referred to a Vascular Access Center with possible stenosis. All access were studied with Duplex Ultrasonography. Criteria for significant stenosis were: resistance index in the feeding artery > 0.7, residual diameter <2.0 mm, Qa < 500 ml/min or Qa decrease > 25% for a 30 days period.

260 AVFs were evaluated: 38% had no significant stenosis (NS, n=89), 35% had significant stenosis (SS, n=82), 21% had no dysfunctional access (ND, n=50) and 6% had other complications. During the follow up period of 308 days ± 238, 55% of NS evolved to SS and 45% remained stable with 1 thrombosis after 537 ± 395 days. ND access had 1 thrombosis within 584 ± 377 days. Comparing NS with SS, cumulative survival of AVFs was lower in the significant stenosis access ( p>0.05): 91%, 88% e 82% in the 1st, 2\textsuperscript{nd} and 4th year in SS and 97% at 4th year in NS.

Duplex Ultrasonography is essential to evaluate dysfunctional vascular access and it must be used before angiography or surgery. Vascular access monitoring and surveillance in conjunction with RI >0.7 in the feeding artery and residual diameter of the stenosis<2.0 mm appear to be appropriate and safe criteria for therapeutic referral.
Aims of the study:
The purpose of this retrospective review is to evaluate a possible clinical use of a new ultrasound technique: Vector Flow Imaging in arteriovenous fistulas evaluation.

Methods:
We enrolled 2 patients (Patient 1: female, 58 years, Patient 2: male, 73 years) with upper arm arteriovenous fistula (radio-cephalic fistula), one of which presented with malfunction of the vascular access for a significant stenosis on the efferent vein.

We performed the examination with Resona 7, Mindray.

The scans were performed prior to insertion of the hemodialysis needles. Volume flow was calculated recording two consecutive heart cycles during a longitudinal scanning, one cycle with color-Doppler imaging and the other with vector flow imaging.

Discussion:
Early identification of stenosis, especially near bifurcations or sharp curvatures, allows to maintain the functionality and patency of the arteriovenous fistula. Vector Flow Imaging (VFI) shows the blood flow direction and velocity, with multiple arrows real-time within a color box. This technique permits to calculate volume flow during systole and diastole with a conventional probe with different scanning planes, avoiding angle-related mistakes differently from conventional Doppler ultrasound, and for that reason less prone to operator-dependance.

Conclusion:
VFI provides not only morphological informations, but also flow data of the fistulas using a conventional ultrasound scanner, it is a promising technique for diagnostic examination and surveillance of vascular accesses.
TERM RESULTS OF A STAPLING TECHNIQUE FOR AUTOGENOUS ANEURYSMAL ARTERIO-VENOUS FISTULA REPAIR

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Aim:
We report the mid – term results of an alternative technique for repairing autogenous aneurysmal arterio-venous fistula.

Materials and methods:
Between January 2012 and December 2015, all patients with an aneurysmatic autogenous arterio-venous fistula were treated with this technique. First, the arterio-venous fistula was remodelled using a stapler on the lateral side of the vein wall. Subsequently, if a stenotic segment was present it was excised. Follow-up included clinical examination and echo-color-Doppler of the fistula and was performed at 7, 15, and 30 days after the intervention, and every 6 months thereafter.

Results:
We treated 41 patients (M : F = 2 : 3, median age 65.3 ± 7.4 yrs).
Elective interventions were performed in 34 (82.9%) cases; for 7 of them it was necessary to undergo emergent treatment because of skin ulceration (n = 4) or post-cannulation bleeding (n = 3). Technical success was achieved in all cases. Overall, the mean duration of the intervention was 67 minutes (IQR, 57.32-76.48). In-hospital mortality or major morbidity were not observed. Median hospitalization time was 24 hours (IQR, 20-29). Postoperative puncture was performed after a median delay of 11.4 hours (IQR, 9.4-15.3). No patient was lost during the follow-up; median follow-up was 36.3 months (range 4 - 48). During follow – up we documented complication in 10 (24.4 %) cases: thrombosis (n = 4), aneurysm relapse (n = 4), pseudoaneurysms (n = 3). In 7 (17.1%) cases vascular access abandonment was necessary. Four – years primary functional patency is 75.6%, secondary patency is 82.9%.

Conclusions:
In our experience, the stapling technique proved to be easy, fast and safe. Mid-term follow-up outcomes showed satisfactory primary patency and confirmed the effectiveness of the technique.
Haemodialysis (HD) vascular access failure affects many dialysis patients, culminating in end-stage vascular access failure (ES-VAF), leaving the nephrologist with a complex problem to resolve. The authors reviewed the experience of their Nephrology Department in these situations.

**Methods:**
ES-VAF was defined as the impossibility to insert a central venous catheter (CVC) in a large vessel (femoral, internal or external jugular, or subclavian vein) due to stenosis or thrombosis of these vessels, as documented by computed tomography angiogram or angiography. We reviewed the clinical data of patients who were admitted to our department with ES-VAF between January 2006 and December 2015.

**Results:**
During this period, 16 patients with ES-VAF were admitted. Eight males (50%), six blacks (37.5%), mean age at the beginning of renal replacement therapy (RRT) of 47.3 ± 21.9 years; in 100% the initial choice of RRT was HD, and they were on HD for 6.5 ± 2.7 years. Follow up, starting on diagnosis of ES-VAF, was 32 ± 22.8 months. Nine patients (56.2%) were transferred to peritoneal dialysis (PD), five patients (31.3%) required placement of an intra-atrial catheter (IA), and in two patients (12.5%) a CVC was inserted in the inferior vena cava (IVC). In 11 of these patients (68.8%), due to failure of the initial option, at least one reintervention was necessary.

- In the patients who were transferred to PD, at the last follow-up only two patients remain in this technique and one patient died. Two patients were transplanted and four patients were transferred to HD.
- In the patients with a CVC IA, two died during the post-operative period, one remains on HD, one was transferred to PD, and one patient after multiple episodes of catheter dysfunction, was submitted to HeRO graft insertion, followed by a kidney transplant due to medical urgency.
- The patients with a CVC IVC were transferred to PD, one electively, one due to catheter dysfunction. Both died due to septic shock.

At the last follow-up: three patients were transplanted, three remain on PD, three remain on HD (one with a CVC IA, one with a CVC IVC, one with an upper arm graft), seven patients died (43.8%) (four due to complications of ES-VAF).

**Conclusion:**
PD was an option in 12 of the 16 patients at some moment during their disease, allowing for survival on this technique or as a transition to another. The rotation through different RRT allowed survival of most patients. Our departments technical experience in endovascular therapy and the articulation with Vascular Surgery and Cardio-Thoracic Surgery Departments were essential to the resolution of this problem.

Vascular patrimony monitoring and preservation is crucial to dialytic technique and patient survival, and in facing the extreme situation of ES-VAS, the articulation between different technical areas in the hospital is essential to formulate an individualized strategy.
OPTIMIZED CATHETER-RELATED BACTEREMIA IN DIALYSIS: 
6-YEAR PROSPECTIVE STUDY USING ONLY UNIVERSAL MEASURES.

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Introduction and Aims:
Catheter related bacteremia in tunneled catheters (CRB) causes high mobility and mortality in patients in chronic hemodialysis programs. It has been suggested that catheter locks using antibiotics reduce the incidence of CRB after clinical trials, but on the control group of these studies is showed high rates of CRB, which creates controversial discussion. The aim of the current study is to prove the effectiveness of universal asepsis measures to obtain an optimum CRB rate in a long-term study in one centre.

Material and methods:
Design: Prospective cohorts study, single centre
Follow up time: 6 years (2008-2013)
Tunneled catheters: Optiflow, Hemostar, Hemosplit, Equistream (Bard Access Systems, New Jersey, USA) and Palindrome (Covidien, Mansfield, Massachusetts, USA)
Analysed days / catheter: 107,420
Catheter placement: US and radioscopy by an interventional radiologist
Follow up: Chronic hemodialysis hospital unit. Nurses and nephrologists.
Universal asepsis measures.
Heparin lock.
CRB is considered present either when blood culture is positive and once another catheter-related focus has been ruled out, or when there is negative blood culture only related to the catheter. All available samples were analyzed when bacteremia was discovered: blood, sputum, urine, faeces, pleural liquid, peritoneal liquid, cephaloraquidic liquid, exudates, etc and the results.
BRC rate is assessed x 1000 days / catheter.
Database: NephroCloud *

Results:
CRB 2008 to 2013: 0.57, 0.47, 0.31, 0.1, 0.43 and 0.37 respectively.

The catheters being assessed, the follow up days and catheter-related bacteremia were analysed, the germ was classified and treatment given: medical vs catheter withdrawal in Table 1.

Conclusions:
Only universal measures, without using antibiotic lock or anticoagulants other than heparin, can achieve an optimum rate of catheter-related bacteremia, which is cost effective and prevents possible resistance to antibiotics and side effects of other anticoagulant drugs.
While epicardial leads have been reported to avoid central venous stenosis, their placement is more invasive and requires implantation by a cardiothoracic surgeon. Additionally, recent data have demonstrated successful defibrillation using a subcutaneous ICD (SICD). Although the use of these devices is expanding, their insertion in advanced kidney disease and hemodialysis patients is somewhat limited.

In this analysis, we present ten CKD and seven hemodialysis patients treated successfully with an SICD. Demographic characteristics revealed: male=9, diabetes=9, hypertension=14, coronary artery disease=10, peripheral vascular disease=8. Five of the seven hemodialysis patients had an AVF, one of which had central venous stenosis prior to SICD placement. Two patients were dialyzing with use of a tunneled dialysis catheter. SICD devices were implanted for primary prevention of sudden cardiac death (cardiomyopathy with low ejections fraction). 4/17 patients had non-ischemic cardiomyopathy (CMP) with an ejection fraction of <25% while 12/17 suffered from ischemic CMP with an EF of <30%. The decision to place a SICD for one patient was associated with a history of sudden cardiac arrest secondary to long QT syndrome.

In regards to procedure-related complications, there were no instances of excessive bleeding or SICD-related infection. One case was complicated by a small postoperative hematoma requiring no intervention. At an average follow-up of 6 months, one death occurred that was unrelated to the procedure or arrhythmia.

Subcutaneous ICD is a minimally invasive procedure when compared with an epicardial device. By leaving the venous system untouched, this approach offers the advantage of reduced risk of central venous stenosis and infection over an endocardial ICD with transvenous leads. This alternative method is particularly helpful for CKD and hemodialysis patients who rely on venous capital for their survival. SICD has been FDA approved and is currently being utilized in the United States and Europe.
Aim of the study:
Investigate primary and secondary functional patency of AV accesses created at the CHU Brugmann (Brussels, Belgium).

Methods:
We retrospective reviewed all hemodialysis patients treated at the CHU Brugmann dialysis unit between 01/01/2010 and 31/12/2013 for AV accesses created between 01/01/2009 to 31/12/2012. Patient characteristics and access-related data were recorded in a dedicated database. Patency rates were estimated using the Kaplan Meier method.

Results:
297 patients were reviewed. 50 patients with 58 AV accesses (57 fistulas and 1 graft) created during the study period were included. 80% of patients were dialyzed by a central venous catheter at the moment of AV access creation and 28% had their AV access created before starting hemodialysis. 7% of AV accesses needed surgical and 21 % angiographic revision before first use, in 83% of cases to correct venous stenosis. 78% of all created AV accesses were successfully used for dialysis. 9% of AV accesses needed surgical revision and 41% at least one angiographic revision after first use (89% due to venous stenosis). 7% of accesses developed thrombosis during follow up, which was successfully reversed in 75% by thrombolysis with urokinase. Functional primary patency was 60 % at 12 months and 50 % at 24 months. The Kaplan-Meier estimate of functional secondary patency was 90% at 3 years after AV access creation.

Conclusions:
In this cohort nearly 80% of fistulas were successfully used as vascular access and primary patency was in line with currently published evidence. The excellent secondary functional patency of AV fistulas is probably due to a policy of systematic follow up and aggressive treatment of access complications.
VASCULAR ACCESS IN PATIENTS WITH KIDNEY TRANSPLANT FAILURE

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Introduction:
The arteriovenous access (fistula or graft) is the preferred vascular access (VA) in end-stage renal disease patients.

However, central venous catheter (CVC) remains the most frequent access in hemodialysis (HD) incident patients in Portugal. The aim of this study was to evaluate the types of VA used by patients initiating HD after kidney transplant (KT) failure.

Methods:
Single center retrospective study of all KT failure patients who started HD between January/2012 and December/2014. The analyzed data were: age, gender, KT period, VA type after KT failure and initiation of HD and referral to VA surgery. In patients who returned to HD by catheter, data about KT failure cause, immunosuppressive therapy, time to arteriovenous VA creation and type of VA were also collected.

Results:
From January/2012 to December/2014, 69 KT patients started HD after transplant failure. Patients with early KT failure (< 30 days) were excluded (n=12). We analyzed 57 patients: mean age was 60 ± 12 years-old, 66.6% were male and median KT duration was 152 months. In 32 patients (56%) the VA used for HD after KT failure was the same that the patient had immediately before KT. In 10 patients (18%) the VA used was a new one, created during the patient follow-up and it was an arteriovenous fistula (AVF) in all cases. The remaining 15 patients started HD by CVC: all had chronic renal allograft dysfunction, none of them was on Mtor immunosuppressive therapy and in 8 patients a concomitant infectious intercorrence was present. Previous referral to VA surgery had not been made in 8 patients. Median time to arteriovenous VA creation in patients who started HD by catheter was 40 days. The new VA in those patients was an AVF in 10 cases (66.7%), an arteriovenous graft in 4 cases (26.7%) and 1 patient who had previous history of VA exhaustion remained with tunnelled hemodyalisis catheter.

Conclusion:
Between January/2012 and December/2014, about 1/4 of patients with KT failure started HD by CVC. In KT patients, more attention to VA surveillance and early referral for surgery is needed in order to avoid the use of catheter in these patients.
POSTERS
USING NEW TECHNOLOGIES IN VASCULAR ACCESS

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Introduction:
Venous cannulation is the invasive procedure most frequently used in hospitals and enjoying greater variability. Until recently the insertion site of central venous catheter (CVC), peripheral inserted central catheter (PICC), midlines and peripheral catheters (PVC) was determined by palpation of anatomic sites related with the vein to cannulate, showing that this technique is associated with complications. The use of new technologies such as ultrasound and Doppler to guide catheterisation and intracavitary IC-ECG for the location tip, they offer theoretical advantages and allow the implementation of safe reducing vascular access complications and decreasing time insertion.

Methodology:
Our objective is design a multicentric study to demostrate the importance of the use of these systems to avoid complications related with the vascular catheterization and extending the use of this systems to others vascular access and others units in ours hospitals.

Results:
We don’t have final results now only preliminaries By the moment the ultrasound is the golden standar techique in catheterization compered with the blind technique. We use it in hospitalizacion and haemodialysis units. Doppler is used to confirm the vessel in case of doubt in patiens with compresibility problems and when professional have doubts about the vessel and as a useful system in haemodialysys unit because is a good option to see the FAVI anatomy and flows.
IC-ECG is the best option to confirm the tip location because is “on bedside”, is not an invasive device and it seems to be cost effective.

Conclusions:
Ultrasound, Doppler and IC-ECG are showing as standards of care in clinical practice. It is important to become familiar with these techniques to provide a safe, quality care to our patients. They are many and difficult to quantify the elements of morbidity associated with venous catheterization, but the benefits of using these three systems give us arguments for incorporation into routine clinical practice as they are safe, are performed at the bedside and are not invasive. Also compared to other systems such as fluoroscopy, X-ray Fistulography and are cost effective.
IMPLEMENTATION OF THE BUTTONHOLE PUNCTURE TECHNIQUE FOR ARTERIOVENOUS FISTULA IN AN HEMODIALYSIS UNIT

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Introduction:
The buttonhole (BH) technique of puncturing of the fistulas arteriovenous (AVF) is an alternative to the classical staggered puncture. We present the results of incorporating the BH puncture technique of AVF in our dialysis unit after three years.

Material and Methods:
Until December 2015, 22 patients have been initiated on BH technique, 15 men and 7 women, mean age 62±12 years, with dialysis duration 34 months median (range:3-136). The etiology of renal disease is: 11 diabetic, 2 malignant hypertension, one polycystic disease, 5 glomerulopathy, one anephric and 2 unknown etiology. Seven patients received acenocoumarol and nine antiplatelet agents (ASA). The median time with the vascular access (VA) at the beginning of the technique was 41 months (range:3-252). The types of AVF were: 7 left radio-cephalic, 9 left humerus-cephalic, 3 left humerus-basilic, 2 right radio-cephalic, and one right brachio-cephalic.

Results:
Five-eight consecutive dialysis sessions were necessary to achieve a proper tunnel puncture. The average time on buttonhole technique until December 2015 was 12±10 months, range: 1-45. No patient suffered major complications. The previous puncture technique was ladder in 10 patients, area in 6 patients and a combination of both in 6 patients. At the end of the study six patients performed self-puncture. Hemostasis post-dialysis times have been reduced, previous BH technique time was 18.6±8 minutes vs 12.2±3 minutes after buttonhole (P:0.0005). At the end of the study, 14 patients were in BH technique, one had deceased, four had received a Kidney Transplant, one have suffered a vascular access thrombosis and two were failed in the development of BH.

Conclusions:
The BH technique is an alternative puncture technique for dialysis patients. A more widely diffusion of this technique in the hemodialysis units would allow more experience and a better knowledge of BH technique. Self-puncture and reduction in hemostasis time are potential beneficial aspects. A highly motivated nursing staff is necessary for its implementation and its establishment in the Dialysis Units.
CHANGE OF TECHNIQUE OF PUNCTURE OF THE ARTERIOVENOUS FISTULA FROM THE ULTRASOUND FINDINGS

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Introduction:
The puncture technique in area is not recommended, the technique of first choice is staggered or buttonhole technique.
Objective: identify patients with a FAVI that are punctured by the technique of the area and that are susceptible to change by the technical staggered from the findings obtained from the exploration by ED( doppler ultrasound).

Patients and methods:
the subjects of the study are prevalent patients treated by HD (hemodialysis) assisted three times a week who had the inclusion criteria: older than 18 years, prevalent in chronic HD program, patients with AV (vascular access) permanent type FAVI brachial or radial and channelling of the FAVI of the patient by the technique of the Area. The method of exploration of the native FAVI was with portable Doppler ultrasound. Certain ultrasound parameters were blood flow of nutrient artery (ml/min), diameter and depth of the segment of arterialized vein that not be punctures made points (cm). The determination of ultrasound parameters was twice and averaged, the design of the study was cross-sectional observational and in January - 2016 period.

Results:
Total of 63 patients prevalent, 24 were Favis prosthetic and catheters, 39 access Favis native and of them only 9 with puncture in area (14.4 %), n= 9 Favis native humeral with technical puncture area (6 brachiobasilic and 3 brachioperforating), average age of 73 and of them 77.7 % have at least one comorbidity. The results of the parameters ultrasound we have an average diameter 0.7 cm and depth 0.5 cm . The average flow was 1309 ml/minute. All the cases of technical area can potentially be changed by the puncture staggered. In most of these cases it is possible to use the staggered technical thanks to the enlargement of the puncture zone arterialized vein. And in two cases, it is imperative the superficializacion of the same.

Conclusions:
There has registered a low incidence of use of the technique of puncture in area in our Unit of HD, in the case of our study, it is possible change the technique of puncture in area to staggered in all the cases from the morphologic and functional parameters obtained in the FAVI and portable ED used “in situ” in the Unit of HD is a tool that allows to change the technique of puncture of the FAVI.
EVALUATION OF TUNNELLED CENTRAL CATHETERS PLACEMENT UNDER ULTRASOUND CONTROL IN A COUNTY HOSPITAL: FOUR YEARS OF EXPERIENCE.

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Introduction:
The internal arteriovenous fistula (AVF) is the vascular access (AV) of choice for patients (ptes) in hemodialysis (HD), given the lower frequency of complications and increased survival relative to other types of AV. The tunneled venous catheter (TVC) is a “necessary problem” for some ptes requiring hemodialysis either their starting or continuing in the program.

Objectives:
to analyze the characteristics of the patients (ptes) in whom a tunnelled venous catheter (TVC) was implanted in the nephrology department of the Mollet Hospital (MH) between 01/07/2010 and 31/12/2014.

Method:
we analyze both incidents and prevalent ptes of the MH and Granollers nephrology institute (GNI). All the TVCs were palindrome type, implanted by the same nephrologist using the same methodology of placement. The placements were always made under ultrasound control and posterior radiological control.

Results:
75 TVCs were placed in 69 ptes, 38 H (55 %), mean age 72.2 years, 58 ptes (84 %) with at least one comorbidity, diabetes was the most frequent cause of primary renal disease (62,3 %), 13 (17.3%) were incidents ptes, 28 (62.2%) outpatients, mean time on HD 9,44 months, Prevalence: 41 patients, equally from both centers. In 55 ptes (73.4%) the objective of implantation was tunneling a temporary catheter due to CKD progression secondary to cardiac failure, 62 TVCs (87.3%) had a right internal jugular position. No immediate complications were found. 17 late complications: 13 dysfunctions that require fibrinolysis treatment and 4 sepsis that led to the removal of TVCs. Of the 7 incident ptes not Advanced chronic kidney disease (ACKD), only 1 kept the TVC at the end of the study, but all 3 incidents ACKD kept it.

Conclusions:
1. The most prevalent cause of implantation TVCs in incident pte was CKD progression secondary to cardiac failure.
2. In over 50% of incidents ptes with tunnelled catheters there is the option of perform an internal arteriovenous vascular access.
3. The tunneled catheter is a good choice in the incident patients with cardiorenal syndrome.
4. The palindrome catheter has proven to be effective as a vascular access both in incident and prevalent patients with a very low rate of infectious complications.