The Algorithm*

Panos M. Kitrou MD, MSc, PhD, EBIR
Consultant Interventional Radiologist
Patras University Hospital
Greece
Disclosures

Travel and Lecture Honoraria from BD

All images have been provided by Dr. Kitrou with his permission
Before we get there

Stenosis: Fibromuscular thickening, Aggressive

Sizing: Move from “Under-sizing” to “Normal-sizing”

Residual stenosis: <30% is acceptable

Elastic Recoil: Is common, does not seem to affect patency

Dariushnia et al, Quality Improvement Guidelines for Percutaneous Image-Guided Management of the Thrombosed or Dysfunctional Dialysis Circuit/ Vasc Interv Radiol. 2016 Oct;27(10)
Central Veins

Outflow Veins

AVG

Synthetic Graft

Vein

AVA

Artery

VGA: Venous-Graft Anastomosis, AGA: Arterial-Graft Anastomosis, AVA: Arterio-Venous Anastomosis
Vein Preparation
HPB (Atlas® Catheter or Dorado® Catheter) or UHP (Conquest®40 Catheter)
Success?

- DCB
  - Lutonix®
  - DCB Catheter

- CS
  - Covera™
  - Covered Stent

Veins distal to the junction of axillary vein + cephalic arch
Subclavian, Brachiocephalic, SVC
Vessel Sizing is crucial
“2 minute” DCB inflation + Size availability main limitations

HPB: High Pressure Balloon, LPB: Low Pressure Balloon, UHP: Ultra high Pressure Balloon, MDM: Multi-Disciplinary Meeting
Vein → Outflow

Vessel Preparation
HPB (Atlas® Catheter or Dorado® Catheter) or UHP (Conquest®40 Catheter)
Success?

- **DCB Lutonix® DCB Catheter**
  Conquest® 40 Catheter reaching 40 atm will most probably “beat” every stenosis
  Site of treatment were the majority of DCB data is available
  Interim results from the AVeNEW RCT suggest a 78.7% PP @ 6 months for the Covera™ Covered Stent

- **CS Covera™ Covered Stent**

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Vessel Preparation
HPB (Atlas® Catheter or Dorado® Catheter) or UHP (Conquest®40 Catheter)
Success?

DCB
Lutonix®
DCB
dCB
Catheter

CS
Covera™
Covered
Stent

HPB: High Pressure Balloon, LPB: Low Pressure Balloon, UHP: Ultra high Pressure Balloon, MDM: Multi-Disciplinary Meeting
Cannulation Zone

AVF

Vessel Preparation
HPB (Atlas® Catheter or Dorado® Catheter) or UHP (Conquest®40 Catheter)
Success?

→ DCB
Lutonix® DCB Catheter

→ MDM

HPB: High Pressure Balloon, LPB: Low Pressure Balloon, UHP: Ultra high Pressure Balloon, MDM: Multi-Disciplinary Meeting
Cannulation Zone

Vein

Central

Outflow

AVF

Vessel Preparation
HPB (Atlas® Catheter or Dorado® Catheter) or UHP (Conquest® 40 Catheter)
Success?

DCB Lutonix® DCB Catheter

CS Covera™ Covered Stent

DCB Lutonix® DCB Catheter

MDM

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Cannulation Zone

AVG

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Cannulation Zone

AVF | AVG

Vessel Preparation
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Success?

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Vessel Preparation
HPB (Atlas® Catheter or Dorado® Catheter) or UHP (Conquest®40 Catheter)
Success?

Level 1 evidence for primary CS use
AVeVA study interim results suggest a pp of
70.9% for the Covera™ Covered Stent
Use of DCB maybe consider due to presence of
neo-intimal hyperplasia graft-“edge” stenosis
In the case of arterial anastomotic involvement a LPB is suggested. Scoring or Cutting balloons may be considered as a bail-out option. Arterial anastomosis is considered a “no-stent” zone.
Cannulation Zone

Vein

Central

Outflow

Cannulation Zone

AVF

AVG

VGA

Anastomosis

AGA, AVA

Vessel Preparation

HPB (Atlas® Catheter or Dorado® Catheter) or UHP (Conquest®40 Catheter)

Success?

DCB Lutonix® DCB Catheter

DCB Lutonix® DCB Catheter

DSB Lutonix® DCB Catheter

MDM

LPB/(SB?) (Ultraverse® Catheter)

Success?

CS Covera™ Covered Stent

MDM

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Cannulation Zone

Vein

Cannulation Zone

Central

Outflow

AVF

AVG

VGA

Anastomosis

AGA, AVA

Vessel Preparation

HPB (Atlas® Catheter or Dorado® Catheter) or UHP (Conquest®40 Catheter)

Success?

DCB

Lutonix®

Catheter

DCB

Lutonix®

Catheter

CS

Covera™

Covered

Stent

MDM

MDM

LPB/(SB?)

(Ultraverse® Catheter)

Success?

DCB

Lutonix

MDM

DCB

Lutonix

CS

Covera

MDM

MDM

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Synopsis

- Vessel Preparation is key to further DCB treatment
- Successful vessel angioplasty can be followed by DCB treatment
- CS maybe used as a primary treatment for venous-graft anastomosis
- CS can be used as a bailout option in central veins and outflow veins when vessel preparation fails
Case 1
Cheese Cutting Technique

0.035”
0.018”
Conquest® 40 Catheter
6X60mm
40atm
Lutonix® DCB Catheter
7X80mm
Case 2
Vessel Preparation

Dorado® Catheter 5X100mm
Case 3
Atlas® Catheter 12X40mm
Lutonix® DCB Catheter 12X40mm
Case 4
Follow the wire!!!!

Axillary V.

Anastomosis

Graft
The Algorithm*

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