Lysis-Assisted Balloon (LAB) Thrombectomy
5-year Results from 241 cases

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Disclosure

Speaker name:
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I have the following potential conflicts of interest to report:

- Consulting (Bard, Medtronic, Boston, Alvimedica, Rondis)
- Employment in industry
- Stockholder of a healthcare company
- Owner of a healthcare company
- Other(s)

- I do not have any potential conflict of interest
Facts & Figures

Thrombosis: Most important Vascular Access-Related Complication

Stenosis: Most common cause of Thrombosis

But also: hypotension, dehydration, infection, compression, etc.
Facts & Figures

Endovascular > Surgical

Facts & Figures

Why?
Perform both thrombectomy and angioplasty in the same setting.

Venous preservation
Rapid return to dialysis

Guideline Recommendation:
clinical success rate of at least 85%
primary patency at 3 months of at least 40%.

Am J Kidney Dis 2006; 48(1 Suppl 1):s192–s200
Options

Thrombolysis
Lysis: something that is solved, disintegrates (not a problem anymore)

Thrombectomy
Ectomy: Ablation, taking something away (not burning!)
Technique
Technique

Arterial Access: Micro-puncture Kit
5mg of rTPA for 6min

Venous Access: 6Fr Sheath
7 X Long (HPB): Multiple short-term inflations
Thrombus Maceration
Stenosis Evaluation

Access Sites: min 4cm apart
Technique

Venous Access:

5,000 IU of Heparin through the balloon catheter distal to the thrombus

Slow velocity hand injection of diluted contrast (5ml, 70% saline, 30% contrast)

residual thrombus estimation
Technique

Arterial Access: Upsize to 6Fr Sheath

4Fr catheter to inflow artery to perform DSA for thrombus estimation

Fogarty like technique with a 6X40mm low pressure balloon at 3-4atm
Technique

Residual Stenosis:

Very High Pressure Balloon

Stent Graft (Vein-Graft anastomosis or distally)
Lysis-Assisted Balloon (LAB) Thrombectomy. A Declotting Technique for the Treatment of Thrombosed Arteriovenous Dialysis Grafts. 5-Year Experience of 241 Endovascular Procedures

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Study

Single-Center, Retrospective analysis investigating the results of a hybrid thrombolysis-thrombectomy method for the treatment of thrombosed dialysis arteriovenous grafts (AVG)

Kitrou et al., Lysis-Assisted Balloon (LAB) Thrombectomy. A Declotting Technique for the Treatment of Thrombosed Arteriovenous Dialysis Grafts. 5-Year Experience of 241 Endovascular Procedures. CVIR, 2018
Baseline Variables

Period: 5 years (January 2012-December 2016)

De-clotting procedures: 291 for AVGs and AVFs

Data available for 129 patients (75 men, 58.1%) with an AVG undergoing 241 procedures [1.87 procedures/patient (1-10)].

Kitrou et al., Lysis-Assisted Balloon (LAB) Thrombectomy. A Declotting Technique for the Treatment of Thrombosed Arteriovenous Dialysis Grafts. 5-Year Experience of 241 Endovascular Procedures. CVIR, 2018
Baseline Variables

61 patients had ≥2 declotting procedures.

Stent Graft Insertion: 80 cases (80/241; 33.2%) for thrombus apposition or treatment of persistent stenosis.

Kitrou et al., Lysis-Assisted Balloon (LAB) Thrombectomy. A Declotting Technique for the Treatment of Thrombosed Arteriovenous Dialysis Grafts. 5-Year Experience of 241 Endovascular Procedures. CVIR, 2018
Outcome Measures

Primary outcome measure: Circuit Survival.

Secondary outcome measures included procedural complications and investigation of independent factors that could influence survival.

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Results
Circuit Survival

Median Survival: 434 days
54.27% @ 1-year

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Complications

In 6 cases (6/241, 2.49%) declotting failed and a catheter was placed.

There were 16 minor (16/241, 6.64%) and no major complications.

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Limitations

Single-Center

Single-Arm

Retrospective

• Failed to report the time between the event of thrombosis and the time of the procedure
• Not all interim angioplasty procedures were available and therefore primary patency is not mentioned

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Conclusion

This hybrid de-clotting method performed in our department has high survival rates with increased technical success and minimum complications without the use of thrombectomy devices.

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