



# i-MEET

## NEXT GENERATION

Multidisciplinary European Endovascular Therapy

# Mechanical treatment for acute DVT

Laurent Casbas, MD  
Toulouse, France

# Disclosure of Interest

Speaker name: Laurent Casbas

I have the following potential conflicts of interest to report:

Consulting

*Medtronic*

*General Electric*

# Acute DVT

## Venous thromboembolism

104-183 per 100,000 person-year

Two-year recurrence: 17%

50% of post thrombotic syndrom (inflammatory response)

Thromb J. 2018 May 1;16:9. doi: 10.1186/s12959-018-0163-7. eCollection 2018.

**Design and rationale of the non-interventional, edoxaban treatment in routine clinical practice in patients with venous ThromboEmbolism in Europe (ETNA-VTE-Europe) study.**

B Eklof M Perrin KT Delis RB Rutherford P. Gloviczki *Updated terminology of chronic venous disorders : The VEIN-TERM transatlantic interdisciplinary consensus document. J Vasc Surg 2009 (49)* [\[](#)

SR Kahn I Shrier JA Julian *Determinants and time course of the postthrombotic syndrome after acute deep venous thrombosis. Ann Intern Med 2008 (149)* [\]](#)

# Acute DVT

Life threatening at short term

And long term effects:

*Quality of life impaired*

*Chronic disease*

*High costs for public health*

# Acute DVT

## How to treat ?

Antithrombotic Therapy for VTE Disease: CHEST Guideline

Kearon C, Akl EA, Ornelas J, Blaivas A, Jimenez D, Bounameaux H, Huisman

M, King CS, Morris T, Sood N, Stevens SM, Vintch JRE, Wells P, Woller SC, Moores CL, Antithrombotic Therapy for VTE Disease: CHEST Guideline, CHEST (2016), doi: 10.1016/j.chest.2015.11.026.

The golden average remains anticoagulation  
therapies

Vitamin K antagonists and new oral anticoagulants

Rare indications for mechanical treatments

# Acute DVT

How to treat ?

Is there any evidence for a mechanical treatment?

Will it avoid or reduce acute and long-term consequences ?

# Mechanical treatment for acute DVT

Open surgery:

1937

Embolectomy probe

Invasive, blood loss, need for an AVF

86 % patency

Thrombectomie veineuse chirurgicale

**O. Hartung**

Service de chirurgie vasculaire, centre hospitalier universitaire Nord, Marseille, France

# Mechanical treatment for acute DVT

## Catheter Directed thrombolysis:

65,9 % patency (lack of stenting)

Reduce by 14 % the PTS

No change of QOL

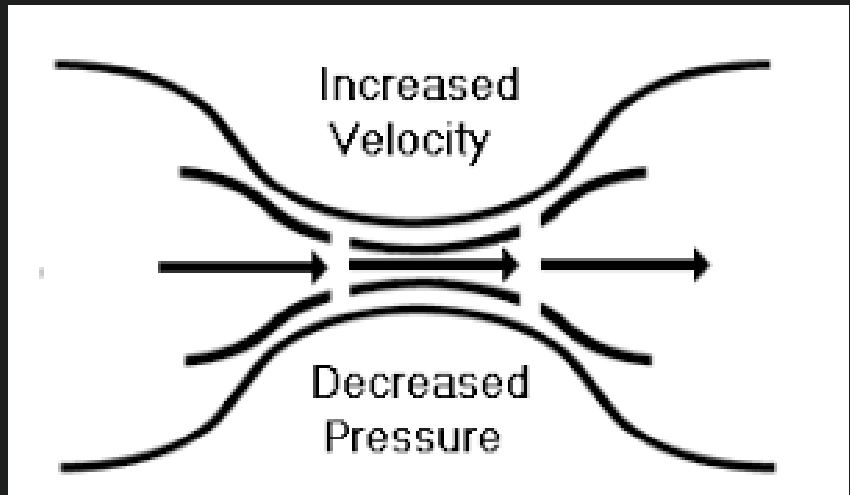
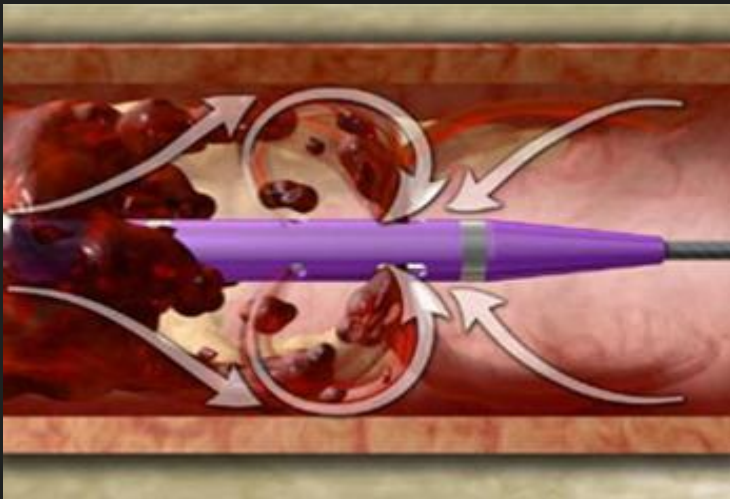
Higher risk of bleeding but less than with systemic thrombolysis



# Mechanical treatment for acute DVT

Pharmacomechanical thrombectomy:

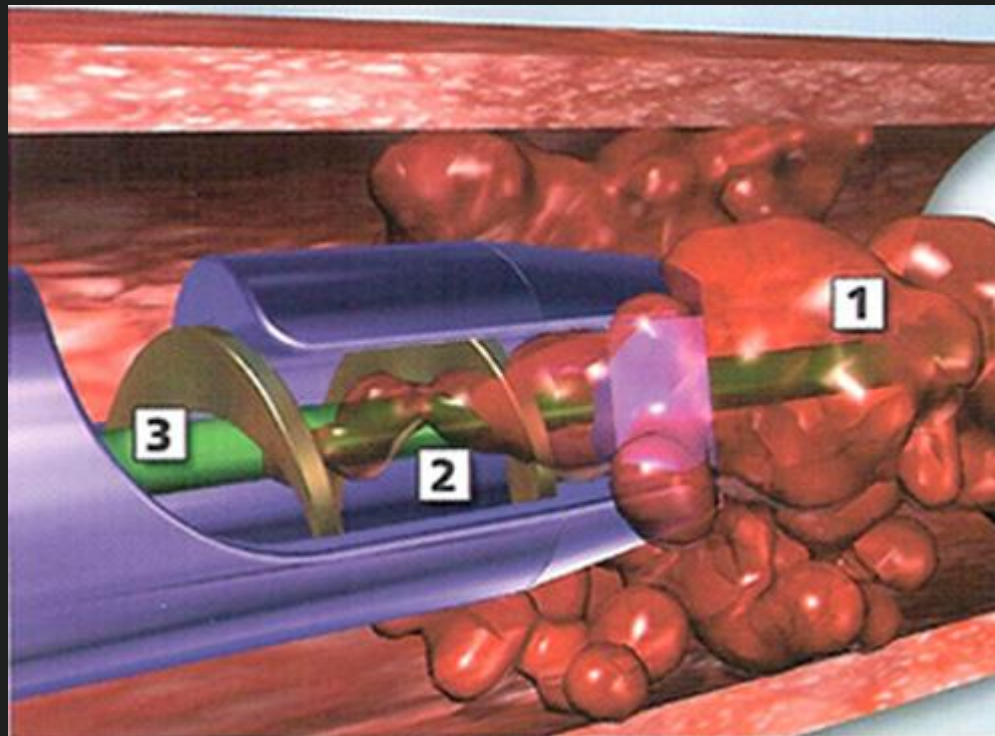
Rheolytic thrombectomy, Bernoulli effect



# Mechanical treatment for acute DVT

Pharmacomechanical thrombectomy:

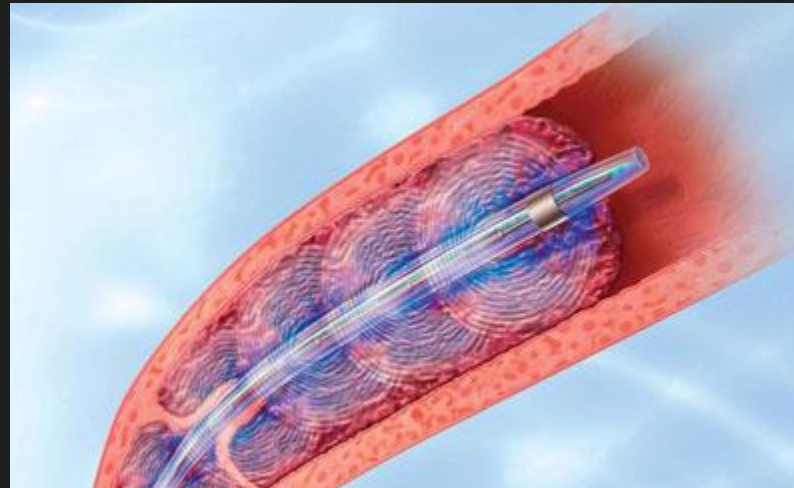
Rotational thrombectomy



# Mechanical treatment for acute DVT

Pharmacomechanical thrombectomy:

Ultrasonic thrombolysis



# Mechanical treatment for acute DVT

## Pharmacomechanical thrombectomy:

*In selected patients*

Phlegmatia caerulea dolens

Massive or submassive PE

Recurrent DVT

Antithrombotic Therapy for VTE Disease: CHEST Guideline

Kearon C, Akl EA, Ornelas J, Blaivas A, Jimenez D, Bounameaux H, Huisman M, King CS, Morris T, Sood N, Stevens SM, Vintch JRE, Wells P, Woller SC, Moores CL, Antithrombotic Therapy for VTE Disease: CHEST Guideline, CHEST (2016), doi: 10.1016/j.chest.2015.11.026.

# Mechanical treatment for acute DVT

## Pharmacomechanical thrombectomy:

*In routine*

Reduce the severity of the PTS

Increase the risk of bleeding

No change of QOL

Pharmacomechanical Catheter-Directed Thrombolysis for Deep-Vein Thrombosis

Suresh Vedantham, M.D., Samuel Z. Goldhaber, M.D., Jim A. Julian, M.Math., Susan R. Kahn, M.D., Michael R. Jaff, D.O., David J. Cohen, M.D., Elizabeth & AI for the ATTRACT Trial Investigators

# Mechanical treatment for acute DVT

## Pharmacomechanical thrombectomy:

### *FIRST RESULTS*

More than 90% patency

Safe

effective

Improve QOL

Reduce PTS

Less bleeding than CDT

Cost-effective ?

J Endovasc Ther. 2018 Feb;25(1):133-139. doi: 10.1177/1526602817714570. Epub 2017 Jun 16.

**Comparison of Direct Iliofemoral Stenting Following AngioJet Rheolytic Thrombectomy vs Staged Stenting After AngioJet Rheolytic Thrombectomy Plus Catheter-Directed Thrombolysis in Patients With Acute Deep Vein Thrombosis.**

Phlebology. 2018 Jul;33(6):388-396. doi: 10.1177/0268355517711792. Epub 2017 May 22.

**The effect of Angiojet rheolytic thrombectomy in the endovascular treatment of lower extremity deep venous thrombosis.**

# Mechanical treatment for acute DVT

Pharmacomechanical thrombectomy:

What about cancer ?

Life expectancy more than 1 year

[Ann Vasc Surg. 2018 Mar 5. pii: S0890-5096\(18\)30204-8. doi: 10.1016/j.avsg.2018.01.081. \[Epub ahead of print\]](#)

[Malignancy Does not Affect Outcomes of Pharmacomechanical Thrombolysis in Acute Symptomatic Iliofemoral Deep Vein Thrombosis](#)

# Mechanical treatment for acute DVT

Some additional treatments are mandatory such as venous stenting and long-term anticoagulant therapy



# Mechanical treatment for acute DVT

PMT is not yet the golden average

But it's a very promising way to improve venous  
therapies



# i-MEET

## NEXT GENERATION

Multidisciplinary European Endovascular Therapy

# Mechanical treatment for acute DVT

Laurent Casbas, MD  
Toulouse, France