Mid-term Results of Catheter Directed Thrombolysis in Vasculitic Patients with Acute Ischemia

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Disclosure

I do not have any disclosure or conflict of interest

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- **Acute limb ischemia (ALI)** remains a challenging dilemma with high risk for major amputation.

- Treatment of ALI has shifted toward **endovascular therapies**.

- **Vasculitis** is one of the less frequent etiologies of acute limb ischemia with high risk of limb loss.

- Vasculitis is simply an **inflammatory process of the vessel wall** and leading to destruction and subsequent hemorrhagic and ischemic events [1].

- It affects different arterial sizes and sites.

- Its involvement could extend from chronic limb ischemia up to acute limb ischemia and limb loss.

1- Chen, KR., Carlson, J.A. Clinical Approach to Cutaneous Vasculitis. Am J Clin Dermatol 9, 71–92 (2008).

AIM OF STUDY

- To assess outcomes of the use of **rt-PA** (thrombolytic) in vasculitis patients presented with acute ischemia and discuss in details its favorable results, complications, need for secondary intervention, limb survival without amputation for 2-3 years follow up.

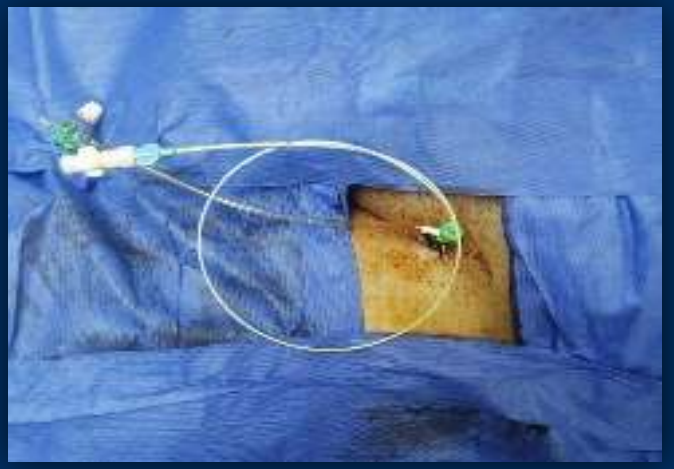
- A study conducted in Mansoura cardiothoracic &vascular surgery center, Egypt , from January 2016 to December 2022

- We included vasculitis patients with acute ischemia **class 1 & 2a** according to Rutherford classification

- Patients with evidence of atherosclerosis and patients with absolute contraindication to thrombolytic therapy were excluded from the study.

Technique

- Under local anathesia. A 6-F sheath was anterogradely placed.
- A Berenstein catheter(Merit Medical™) ➡ selective angiography.
- Fountain Infusion catheter (Merit Medical™) was inserted into the occluded vessel



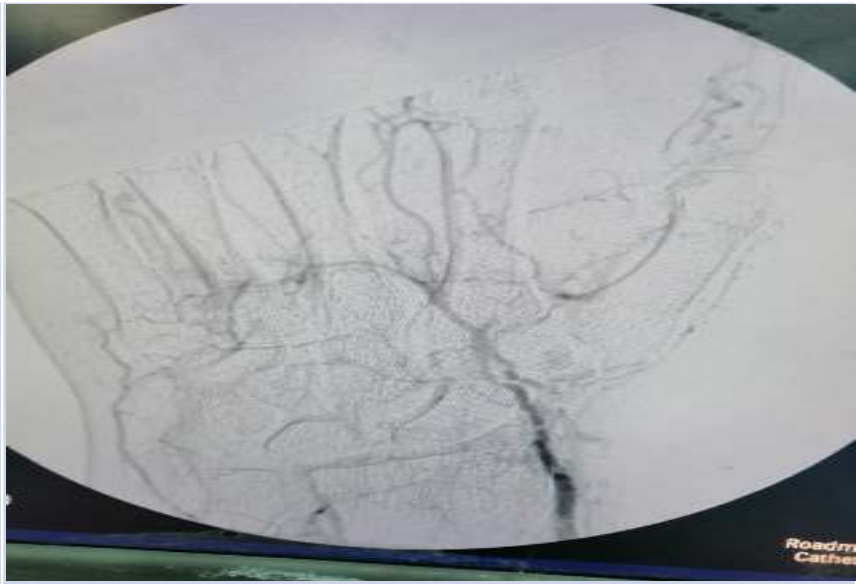
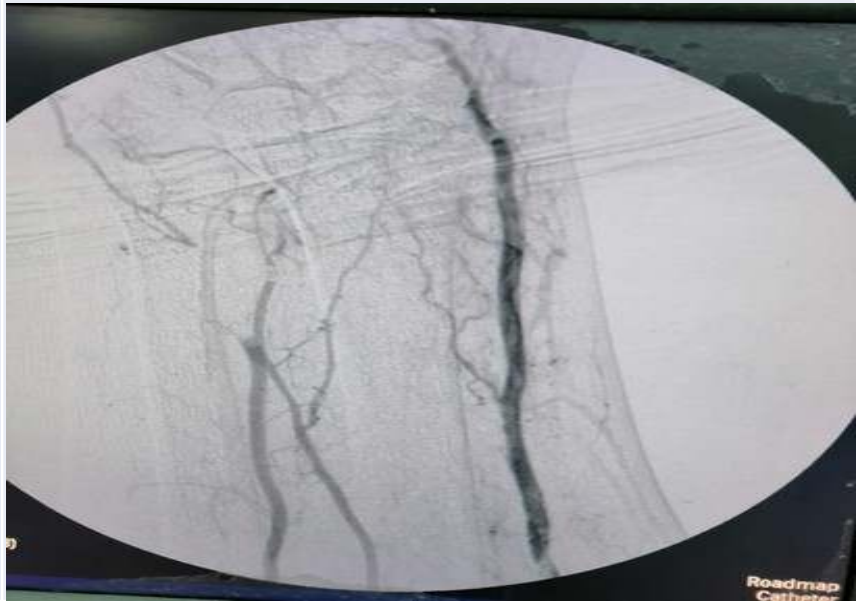
- **loading dose of rt-PA** according to body weight (8 ml average) in the operative room then 1 ml per hour in the ICU.

- Follow up angiogram was done 24 and 48 hours to monitor the effect on the target vessel .

Follow up protocol

- full dose anticoagulation and anti-platelet for 6 months in addition to the immuno-suppressive therapy.

- All patients were re-evaluated 2 weeks after the procedure then 1,3,6,9 and 12 months then, yearly by clinical examination, hand-held Doppler and ultra-sound duplex examination.

Pre	Post	
		
		

Pre

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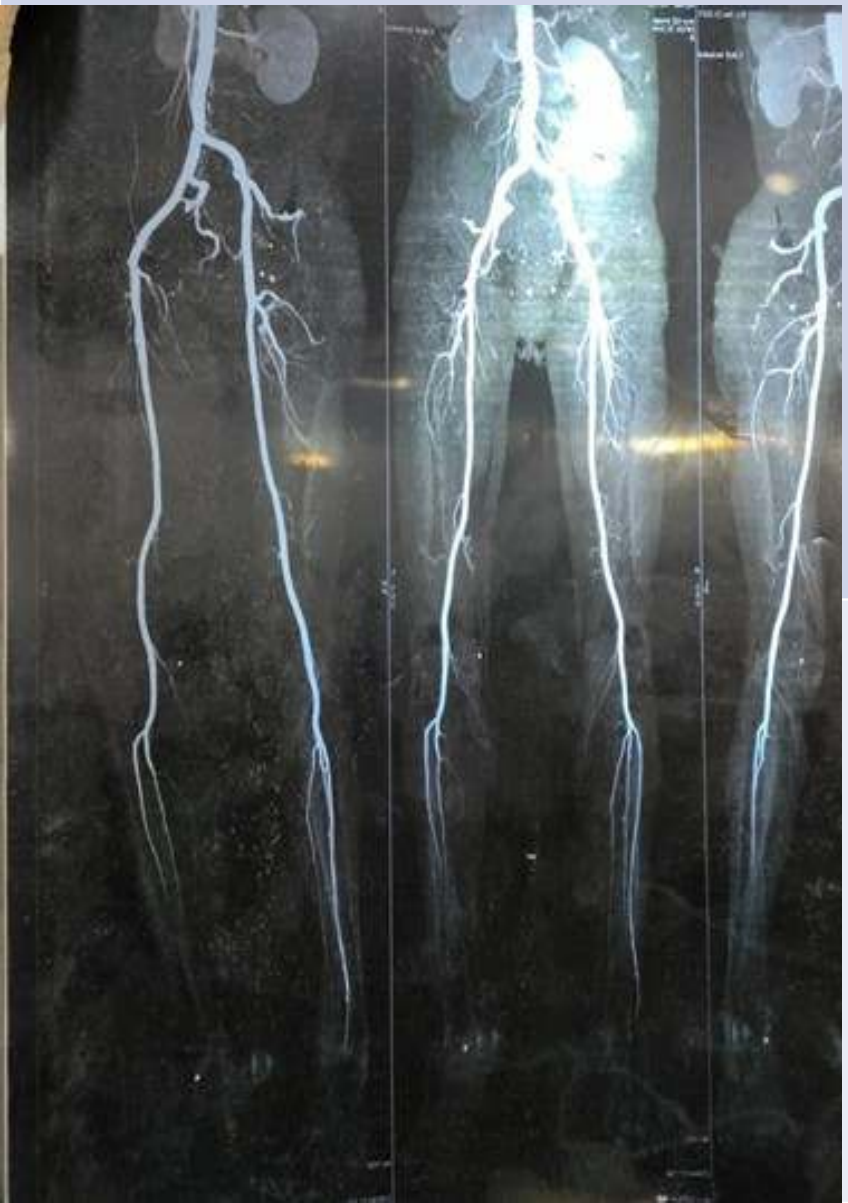
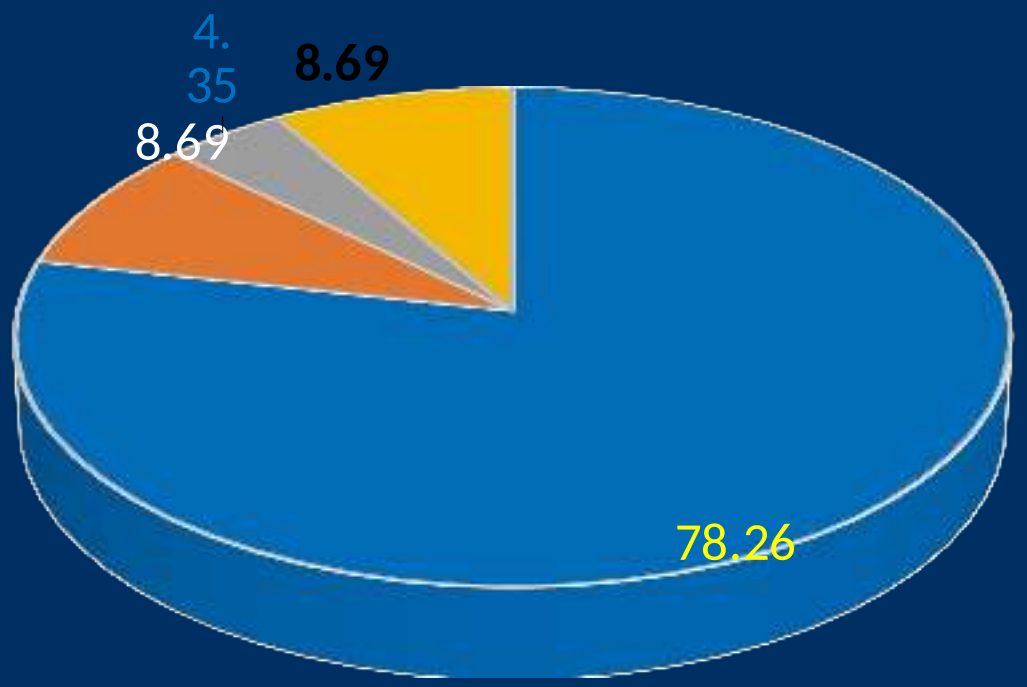


PATIENT CHARACTERISTICS

Patients characteristics	The study groups (n=69)
Age (years)	
Mean ± SD	**52.33±9.52**
Min-Max	**35-68**
≤50 y	29 (42.0%)
>50 y	40 (58.0%)
Gender	
Male	27 (39.1%)
Female	42 (60.9%)
Etiology	
SLE	27 (39.1%)
TAO	21 (30.4%)
Rheumatoid	15 (21.7%)
PAN	6 (8.7%)
Limb	
Upper	19 (27.5%)
Lower	50 (72.5%)
Cyanosis	6 (8.7%)
Pain	9 (13.0%)
Amputation	
Minor amputation	12 (17.4%)
Major amputation	6 (8.7%)
Survival	
Died	3 (4.3%)
Survived	66 (95.7%)
Outcome	
Good	49 (71.0%)
Poor	20 (29.0%)

RESULTS OF CLOT LYSIS

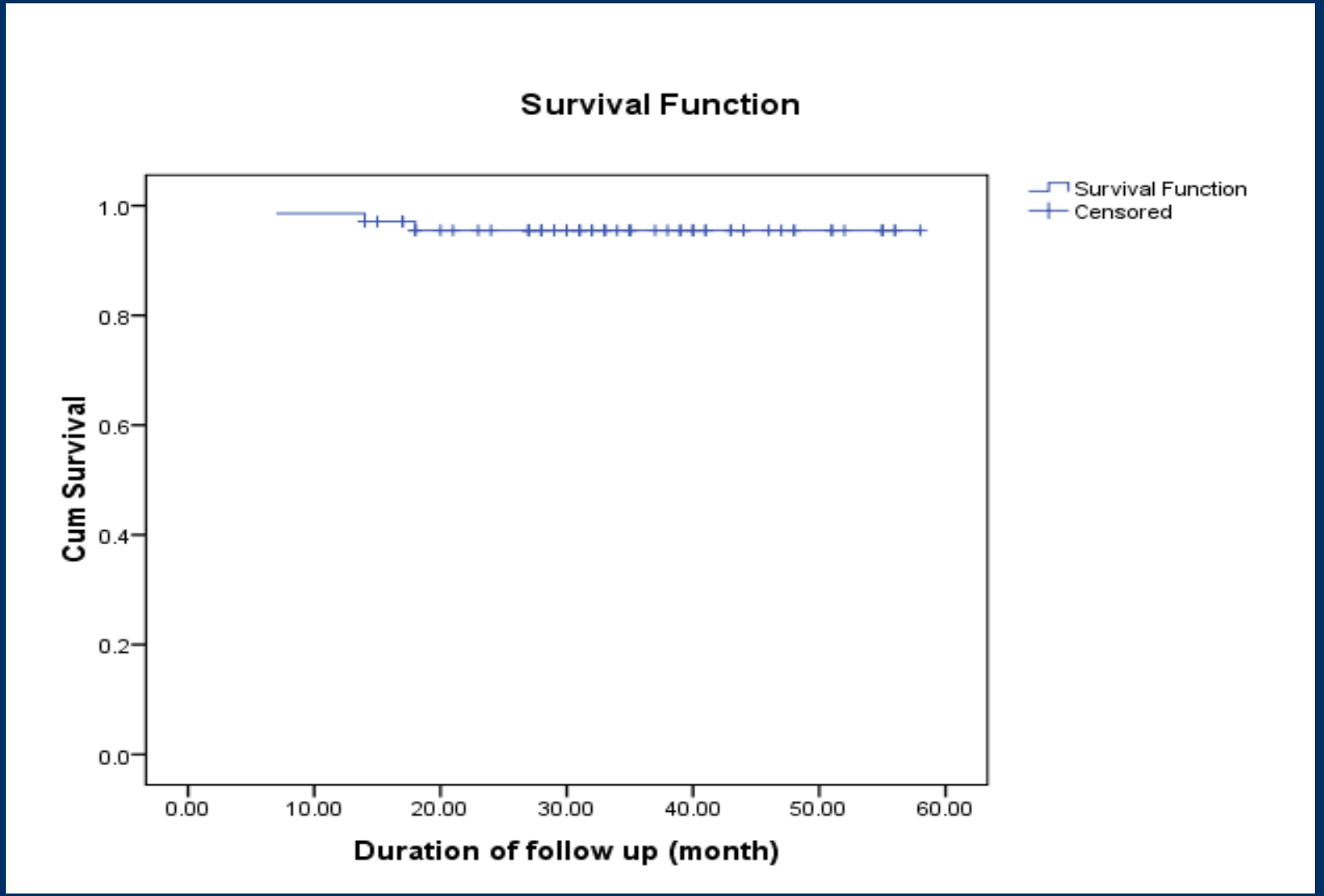
NO OF PATIENTS	RESULT
patients (78.26%) 54	COMPLETE CLOT LYSIS WITH 48 HOURS OF ALTEPLASE
patients (8.69%) 6	COMPLETE CLOT LYSIS AFTER 72 HOURS OF ALTEPLASE
patients (4.35%) 3	INCOMPLETE CLOT LYSIS DESPITE 72 HOURS OF ALTEPLASE
patients (8.69%) 6	LYTIC THERAPY WAS INTERUPTED DUE TO MASSIVE ORIFICE BLEEDING



Relation between outcome and patients characteristics

Patients characteristics	Good outcome (n=49)	Poor outcome (n=20)	Test of significance	P value
Age (years)				
≤50 y	26 (53.1%)	3 (15.0%)	χ^2=8.45	0.004*
>50 y	23 (46.9%)	17 (85.0%)		
Gender				
Male	17 (34.7%)	10 (50.0%)	χ^2=1.39	0.237
Female	32 (65.3%)	10 (50.0%)		
Etiology				
SLE	23 (46.9%)	4 (20.0%)		
TAO	9 (18.4%)	12 (60.0%)	χ^2=15.64	0.001*
Rheumatoid	14 (28.6%)	1 (5.0%)		
PAN	3 (6.1%)	3 (15.0%)		
Limb				
Upper	15 (30.6%)	4 (20.0%)	χ^2=0.802	0.371
Lower	34 (69.4%)	16 (80.0%)		

Kaplan-Meier overall survival (month) among the studied group



Based on the results of the comparative trials on surgery and local lysis in ALI, the ACC/AHA guidelines have included the following recommendations:

- Catheter-based thrombolysis (CDT) is an effective and beneficial therapy. It is indicated for patients with ALI (Rutherford categories 1 and 2a of ALI) of less than 14 days of duration (class 1, level of evidence A).
- Mechanical thrombectomy devices can be used as adjunctive therapy for ALI due to peripheral arterial occlusion (class 2a, level of evidence B).
- Catheter-based thrombolysis or thrombectomy may be considered for patients with ALI (Rutherford category 2b) of more than 14 days (class 2b, level of evidence B)

Conclusion

conclusion

- Catheter directed thrombolysis (CDT) in vasculitis patients with acute limb ischemia is a safe, effective and gives a promising result with lower risk of major amputation if compared with surgical thrombectomy.
- CDT requires more time than surgical treatment. Therefore, CDT should be considered when there is time, such as in severity classifications 1 and 2 a. In contrast, reperfusion after CDT is slower than with surgical thromboembolectomy and can reduce the risk of ischemia-reperfusion injury.


Thank you
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