Save-CFA trial

Pr Bahaa NASR

CHU Cavale Blanche Brest, France

ESVS 2024 guidelines

Recommendation 61

For patients with disabling intermittent claudication undergoing revascularisation, with common femoral artery stenosis or occlusion not extending down to the femoral bifurcation, endovascular treatment may be considered as an alternative to open surgery due to similar midterm patency rates compared with open surgery in non-complex common femoral artery lesions.

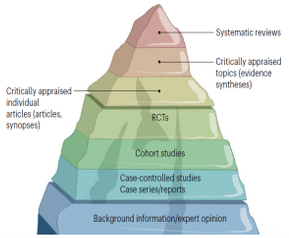
Class	Level	References	ToE
IIb	B	Changal *et al.* (2019)[543] Boufi *et al.* (2021)[544]	

Recommendation 62

For patients with disabling intermittent claudication and a hostile groin (e.g., prior ipsilateral common femoral endarterectomy, morbid obesity, or previous regional radiotherapy to the groin region) undergoing revascularisation, endovascular treatment of steno-occlusive disease of the femoral bifurcation may be considered over open surgery due to the lower risk of surgical wound complications.

Class	Level	Reference
IIb	C	Consensus

Nordanstig, Eur J Vasc Endovasc Surg, 2023



ESVS 2024 guidelines

Systematic review and meta-analysis of endovascular versus open repair for common femoral artery atherosclerosis treatment

Mourad Boufi, MD, PhD,[a,b] Meghan Ejargue, MD,[a] Magaye Gaye, MD,[a] Laurent Boyer, MD, PhD,[c] Yves Alimi, MD, PhD,[a,b] *and* Anderson D. Loundou, PhD,[c] *Marseille, France*

ABSTRACT

Background: Encouraging recent reports on endovascular treatment of common femoral artery (CFA) atherosclerotic disease has rendered the question regarding the place of this technique evermore pertinent and legitimizes the performance of randomized trials. The present comprehensive review focused on the early and midterm outcomes to help assess the benefit/risk balance of endovascular vs open repair for CFA treatment.

Methods: Embase and Medline searches were conducted according to the PRISMA (Preferred Reporting Items for Systematic review and Meta-Analyses) standards to identify studies from 2000 to 2018 reporting on endovascular repair (ER), open surgery (OS), and comparisons of both techniques for CFA atherosclerosis treatment. The outcomes measured were 30-day mortality, morbidity, reintervention rates, midterm patency, late reintervention, and restenosis rates.

Results: Twenty-eight studies were eligible: 14 OS (1920 patients), 12 ER (1900 patients), and 2 comparative randomized trials (197 patients). The meta-analysis of the comparative studies revealed no differences in 30-day mortality or reintervention rates but improved 30-day morbidity after ER. At 1 year, the primary patency rates did not differ between ER and OS, nor did the late reintervention rate. In the noncomparative studies, with a mean follow-up period of 23.8 months for ER and 66 months for OS, the restenosis rate was 14.4% and 4.7%, respectively. The reported stent fracture rate was 3.6%. In the ER cohort, the overall primary patency at 1, 2, and 3 years was 81.9%, 77.8%, and 75.1%, respectively. For the OS cohort, the overall primary patency rate at 1, 2, and 3 years was 93.4%, 91.4%, and 90.5%, respectively.

Conclusions: Despite expectations, our analysis of the reported data suggests that the perioperative mortality is not in favor of ER; however, the perioperative morbidity showed an advantage for ER compared with OS. Also, although comparable in the first year, the long-term primary patency rate was much greater after OS. At present, the place of ER for CFA treatment still requires further definition. Additional clarification of the indications and more research are both required to determine the optimal endovascular technology and femoral bifurcation reconstruction with stenting. (J Vasc Surg 2021;73:1445-55.)

Research Article

Systematic Review and Proportional Meta-Analysis of Endarterectomy and Endovascular Therapy with Routine or Selective Stenting for Common Femoral Artery Atherosclerotic Disease

Khalid Hamid Changal,[1] Mubbasher Ameer Syed,[2] Tawseef Dar,[3] Muhammad Asif Mangi,[2] and Mujeeb Abdul Sheikh[4]

[1]*Internal Medicine, Mercy Health St. Vincent Medical Center, Toledo, OH, USA*
[2]*Cardiovascular Medicine, University of Toledo College of Medicine and Life Sciences, Toledo, OH, USA*
[3]*Cardiology Division, Massachusetts General Hospital, Harvard Medical School, Boston, Massachusetts, USA*
[4]*Cardiovascular Medicine and Interventional Cardiology, University of Toledo College of Medicine and Life Sciences, 3065 Arlington Ave. Toledo, OH 43614, USA*

Correspondence should be addressed to Mujeeb Abdul Sheikh, Mujeeb.Sheikh@utoledo.edu

Received 6 December 2018; Revised 4 March 2019; Accepted 28 March 2019; Published 14 April 2019

Academic Editor: Yuichiro Maekawa

Introduction. Common femoral endarterectomy (CFE) has been the therapy of choice for common femoral artery atherosclerotic disease (CFA-ASD). In the past, there was inhibition to treat CFA-ASD endovascularly with stents due to fear of stent fracture and compromise of future vascular access site. However, recent advances and new evidence suggest that CFA may no longer be a 'stent-forbidden zone.' In the light of new evidence, we conducted a meta-analysis to determine the use of endovascular treatment for CFA-ASD and compare it with common femoral endarterectomy in the present era. *Methods.* Using certain MeSH terms we searched multiple databases for studies done on endovascular and surgical treatment of CFA-ASD in the last two decades. Inclusion criteria were randomized control trials, observational, prospective, or retrospective studies evaluating an endovascular treatment or CFE for CFA-ASD. For comparison, studies were grouped based on the treatment strategy used for CFA-ASD: endovascular treatment with selective stenting (EVT-SS), endovascular treatment with routine stenting (EVT-RS), or common femoral endarterectomy (CFE). Primary patency (PP), target lesion revascularization (TLR), and complications were the outcomes studied. We did proportional meta-analysis using a random-effect model due to heterogeneity among the included studies. If confidence intervals of two results do not overlap, then statistical significance is determined. *Results.* Twenty-eight studies met inclusion criteria (7 for EVT-RS, 8 for EVT-SS, and 13 for CFE). Total limbs involved were 2914 (306 in EVT-RS, 678 in EVT-SS, and 1930 in CFE). The pooled PP at 1 year was 84% (95% CI 75–92%) for EVT-RS, 78% (95% CI 69–85%) for EVT-SS, and 93% (95% CI 90–96%) for CFE. PP at maximum follow-up in EVT-RS was 83.7% (95% CI 74–91%) and in CFE group was 88.3% (95% CI 81–94%). The pooled target lesion revascularization (TLR) rate at one year was 8% (95% CI 4–13%) for EVT-RS, 19% (95% CI 14–23%) for EVT-SS, and 4.5% (95% CI 1-9%) for CFE. The pooled rate of local complications for EVT-RS was 5% (95% CI 2–10%), for EVT-SS was 7% (95% CI 3 to 12%), and CFE was 22% (95% CI 14–32%). Mortality at maximum follow-up in CFE group was 23.1% (95% CI 14–33%) and EVT-RS was 5.3% (95% CI 1–11%). *Conclusion.* EVT-RS has comparable one-year PP and TLR as CFE. CFE showed an advantage over EVT-SS for one-year PP. The complication rate is lower in EVT-RS and EVT-SS compared to CFE. At maximum follow-up, CFE and EVT-RS have similar PP but CFE has a higher mortality. These findings support EVT-RS as a management alternative for CFA-ASD.

Stenting or Surgery for De Novo Common Femoral Artery Stenosis

Yann Gouëffic, MD, PhD,[a,b,c] Nellie Della Schiava, MD,[d] Fabien Thaveau, MD, PhD,[e] Eugenio Rosset, MD, PhD,[f] Jean-Pierre Favre, MD, PhD,[g] Lucie Salomon du Mont, MD,[h] Jean-Marc Alsac, MD, PhD,[i] Réda Hassen-Khodja, MD,[j] Thierry Reix, MD,[k] Eric Allaire, MD, PhD,[l] Eric Ducasse, MD, PhD,[m] Raphael Soler, MD,[n] Béatrice Guyomarc'h,[o] Bahaa Nasr, MD[p]

JACC: CARDIOVASCULAR INTERVENTIONS CME/MOC

This article has been selected as this issue's CME/MOC activity, available online at http://www.acc.org/jacc-journals-cme by selecting the *JACC* Journals CME/MOC tab.

Accreditation and Designation Statement

The American College of Cardiology Foundation (ACCF) is accredited by the Accreditation Council for Continuing Medical Education (ACCME) to provide continuing medical education for physicians.

The ACCF designates this Journal-based CME/MOC activity for a maximum of 1 *AMA PRA Category 1 Credit*(s). Physicians should only claim credit commensurate with the extent of their participation in the activity.

Method of Participation and Receipt of CME/MOC Certificate

To obtain credit for this CME/MOC activity, you must:

1. Be an ACC member or *JACC: Cardiovascular Interventions* subscriber.
2. Carefully read the CME/MOC-designated article available online and in this issue of the journal.
3. Answer the post-test questions. At least 2 out of the 3 questions provided must be answered correctly to obtain CME/MOC credit.
4. Complete a brief evaluation.
5. Claim your CME/MOC credit and receive your certificate electronically by following the instructions given at the conclusion of the activity.

CME/MOC Objective for This Article: At the end of the activity the reader should be able to: 1) appraise the rate of major adverse cardiovascular and local complications in patients undergoing surgical repair of the common femoral artery stenosis; 2) compare the rates of perioperative mortality and morbidity, morphological and hemodynamic outcomes in patients undergoing stenting or surgical repair for de novo common femoral artery stenosis; and 3) recognize the limitations of balloon angioplasty and bioresorbable scaffold deployment in attempting to obtain revascularization for common femoral artery stenosis.

CME/MOC Editor Disclosure: *JACC: Cardiovascular Interventions* CME/MOC Editor Bill Gogas, MD, PhD, has reported that he has no disclosures.

Author Disclosures: Funded by a grant from the French ministry of health (PHRC 2010 - DGOS 20-03). The authors have reported that they have no relationships relevant to the contents of this paper to disclose.

Medium of Participation: Print (article only); online (article and quiz).

CME/MOC Term of Approval

Issue Date: July 10, 2017
Expiration Date: July 9, 2018

Boufi et al. J Vasc Surg 2021

Changal et al. J Interv Cardiol 2019

Gouëffic et al. JACC Cardiovasc 2017

CFA Calcifications

Peripheral Arteries

Eur J Vasc Endovasc Surg (2022) 64, 684–691

Editor's Choice – Eligibility of Common Femoral Artery Atherosclerotic Disease for Endovascular Treatment – the CONFESS Study

Gabriela Kaneta [a,*], Shehzeen Husain [a], Liam Musto [b], Tatiana Hamakarim [a], Ahmed Elsharkawi [a], Sofia Littlejohn [b], Jessica Helm [b], Athanasios Saratzis [b], Hany Zayed [c]

[a] Guy's and St Thomas' NHS Foundation Trust, London, UK
[b] Department of Cardiovascular Sciences, University of Leicester, Leicester, UK
[c] King's College, London, UK

WHAT THIS PAPER ADDS

With the constant development of endovascular techniques, the need to explore the use of this treatment modality in the common femoral artery (CFA) territory has become clear. In this study, a detailed anatomical and morphological examination of CFA atherosclerotic plaques was performed. The results of this in depth analysis showed that a large proportion of these patients could be considered for endovascular treatment based on their anatomical features and the extent of disease. These results could form the basis of future large scale studies in this area.

Objective: Advances in endovascular technologies have allowed the treatment of common femoral artery (CFA) steno-occlusive disease by minimally invasive means; however, the proportion of lesions treated with common femoral artery endarterectomy (CFAE) which would be amenable to endovascular treatment is unknown. This observational study aimed to describe the morphology and composition of CFA lesions treated with CFAE and report the proportion that would be amenable to endovascular treatment with modern technologies.

Methods: Patients presenting with symptomatic peripheral artery disease who underwent CFAE from January 2014 to December 2018 in two tertiary NHS hospitals were included. Extensive data relating to patient demographics, risk factors, clinical outcomes, as well as anatomical and morphological characteristics of the CFA atherosclerotic lesions, were collected which included detailed plaque analysis using 3D reconstruction of pre-operative computed tomography angiograms. CFA lesions were considered suitable for endovascular treatment if presented with patent iliac inflow, at least one patent outflow vessel (superficial femoral artery [SFA] or profunda femoral artery [PFA]), and stenotic rather than occluded CFA.

Results: A total of 829 CFAs in 737 consecutive patients who underwent CFAE were included (mean age 71 ± 10 years; 526 males, 71%); 451 (62%) presented with chronic limb threatening ischaemia. Overall, 35% of CFAs had a localised lesion (no bifurcation disease) that could possibly be treated endovascularly. In total, 376 (45%) target vessels did not feature severe calcium load, with a patent CFA, PFA, and proximal SFA and therefore would have been amenable to endovascular treatment; while 271 CFAs (33%) featured a significant calcium load which would have potentially required stenting.

Conclusion: A significant proportion of patients with atherosclerotic CFA lesions who undergo surgery could potentially be candidates for endovascular treatment. A randomised trial comparing CFAE and new endovascular techniques in this clinical context is required.

Keywords: Common Femoral Artery, Endarterectomy, Endovascular, Peripheral Arterial Disease, Plaque analysis
Article history: Received 8 March 2022, Accepted 28 August 2022, Available online 6 September 2022

CONFESS Study

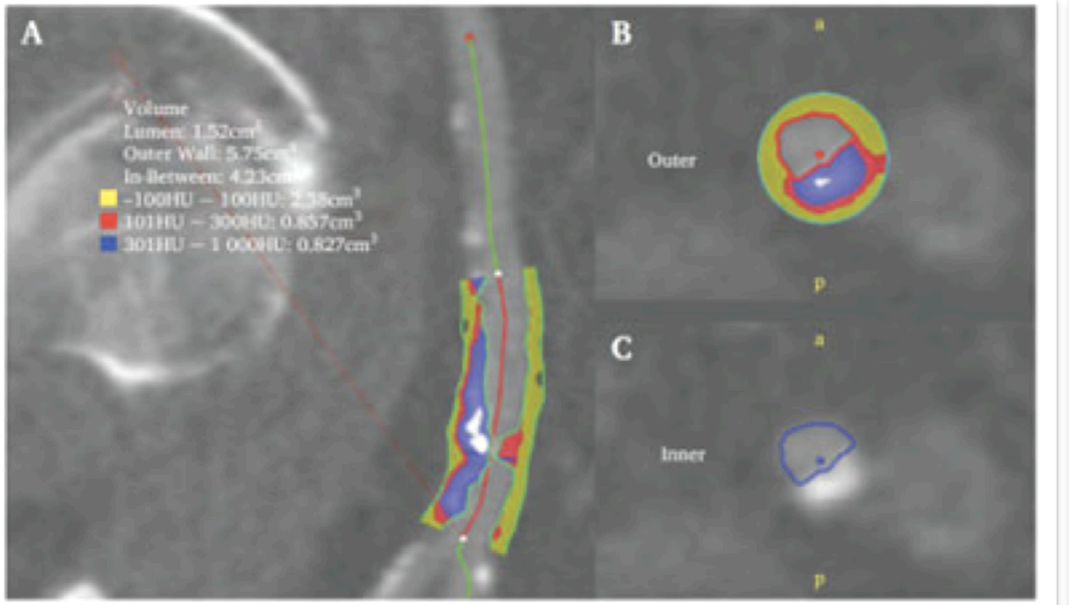
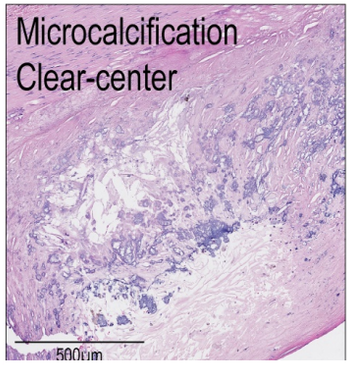
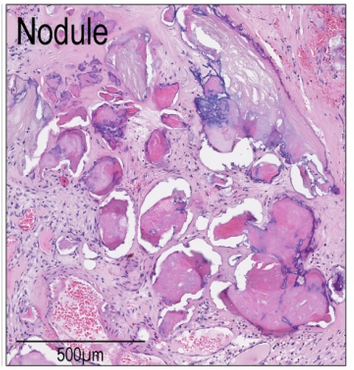


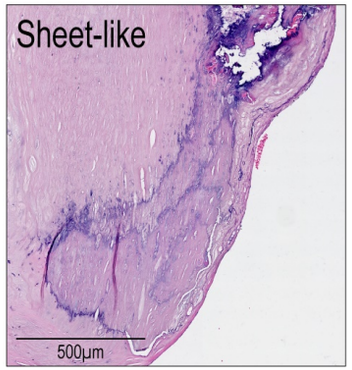
Figure 1. Computed tomography angiography analysis of atherosclerotic plaque of common femoral artery. (A) Multiplanar reformat with centreline and region of interest identified. (B) Outer wall line and plaque colour map with soft (yellow), fibrocalcific (red), and calcified (blue) components. (C) Transverse section with lumen identified. a = anterior; p = posterior.

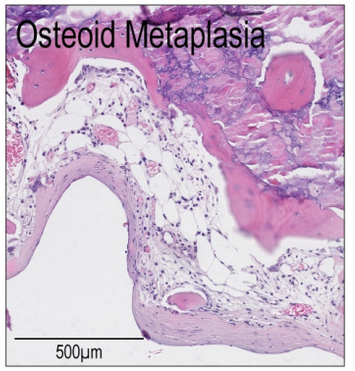
67% did not have heavily calcified plaques

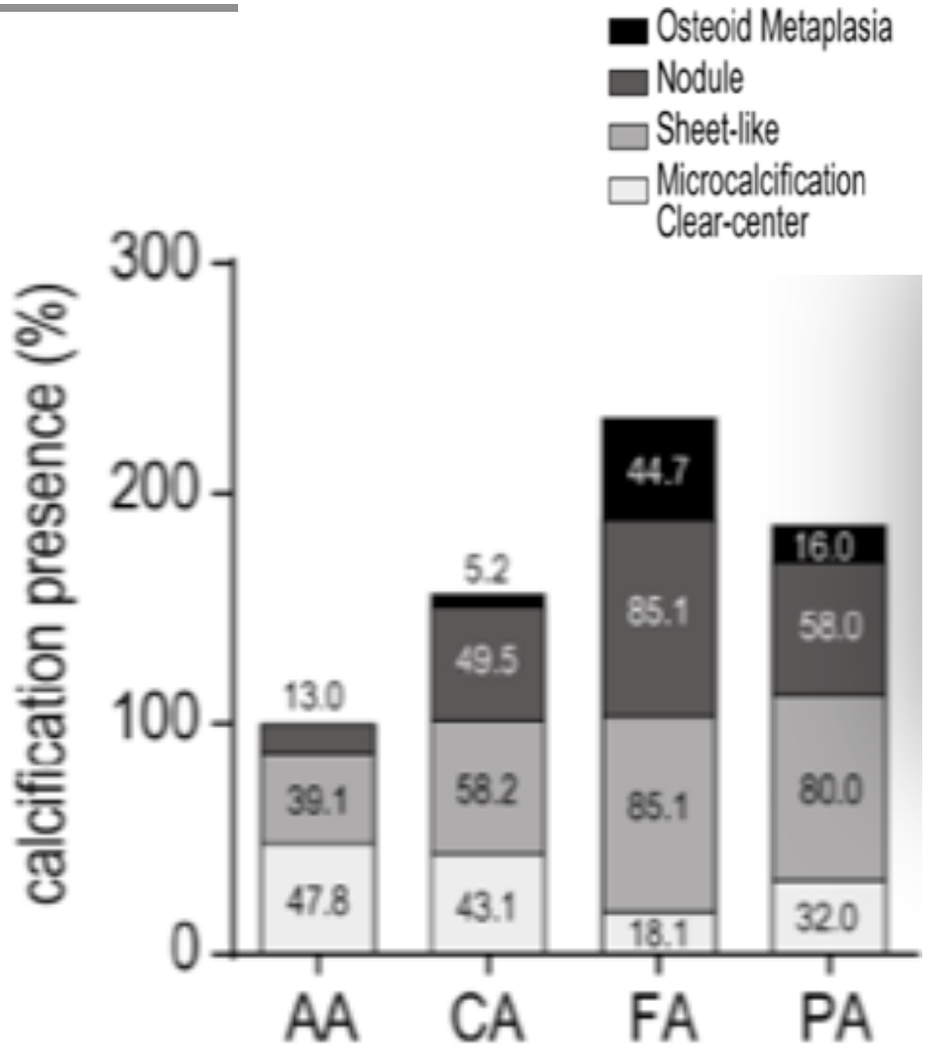
CFA Calcifications











Steenman, Scientific Reports, 2018 *Espitia, PLOSone, 2018* *Davaine, EJVES 2015*

Review

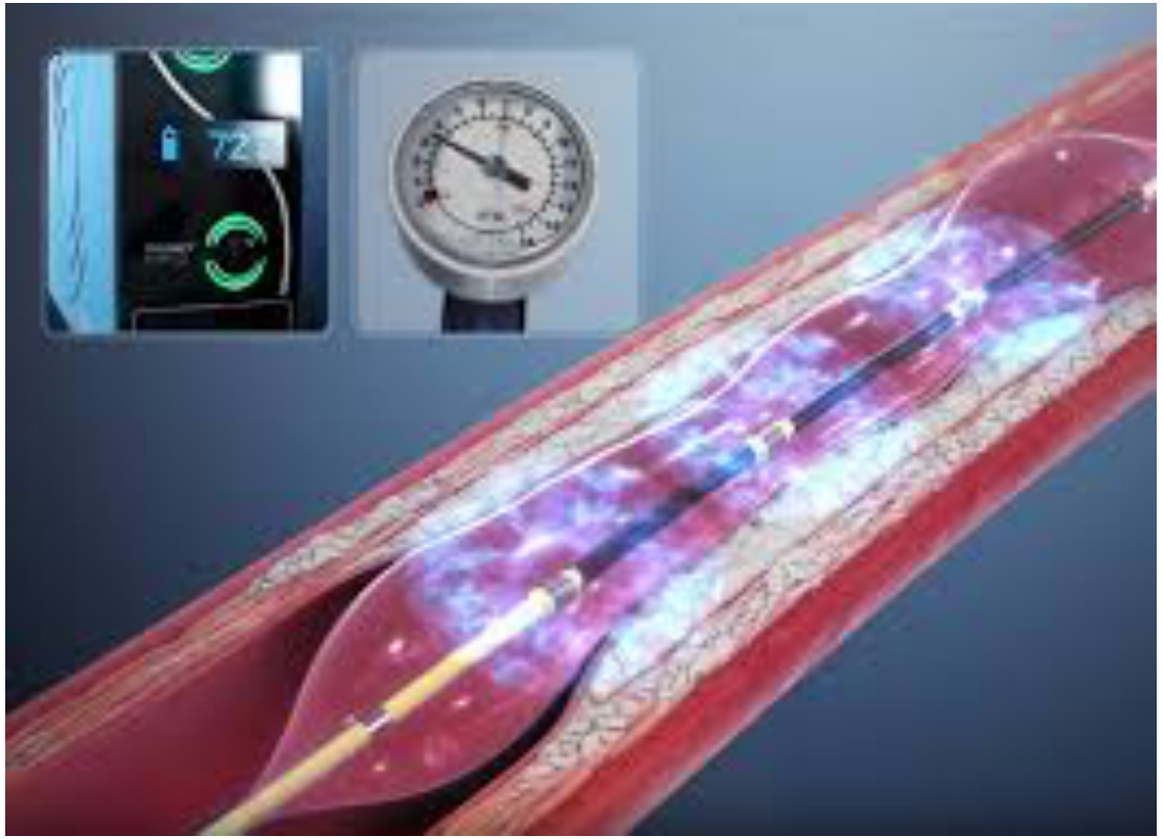
Percutaneous Endovascular Reconstruction of the Common Femoral Artery and Its Bifurcation

Stephanie Rassam [1] and Raphaël Coscas [2,3,*]

Authors	Publication Year	Trial	CFA Lesions (n)	Preparation Tool	Devices Used	DCB	Filter	Technical Success	Compli-cations n (%)	Bailout Stenting n (%)	Freedom from TLR
Bonvini [23]	2011	retrospective, registry, subgroup	25	atherectomy	SH	NR	NR	96%	0	NR	95.2%
Lee [48]	2017	retrospective, registry, subgroup	200	atherectomy	NR	NR	NR	NR	34 (17)	12 (6)	NR
Stavroulakis [50]	2018	retrospective, subgroup	21	atherectomy	TH, HO, P	100%	100%	95%	6 (28.6)	1 (4.8)	89%
Picazo [62]	2020	retrospective	25	atherectomy	HO	92%	100%	92%	3 (12)	1 (4)	93.4%
Böhme [46]	2020	retrospective	250	atherectomy	TH, HO, SH	60.4%	75.6%	92.4%	26 (10.4)	20 (8)	86.4% *
Cioppa [47]	2021	retrospective, registry	80	atherectomy	TH, SH	100%	100%	100%	0	6 (7.5)	86.7%
Baig [49]	2022	retrospective, subgroup	35	atherectomy	SH, HO, DB	100%	83%	100%	2 (5.7)	2 (5.7)	91.2%
Baig [49]	2022	retrospective, subgroup	33	intravascular lithotripsy	Shockwave Medical	100%	0	100%	1 (3)	0	79.4%
Stavroulakis [61]	2023	retrospective	33	intravascular lithotripsy	Shockwave Medical	90%	NR	97%	4 (12)	4 (12)	94%

Advantages of IVL

- Modification of vessel compliance
- Increase technical success
- Improve stent delivery
- Better stent apposition to the arterial wall
- Reduce bail-out stenitng rates



Save-CFA: Comparison of **S**tent-**AV**oiding with a stent-pr**E**ferred strategy in **C**ommon **F**emoral **A**rtery endovascular treatment after IVL preparation

Background: limited comparative data exist on CFA endovascular treatment after IVL preparation

Objective: the study aims to compare a stent-avoiding (SA) vs a stent-preferred (SP) strategy, after IVL preparation in both arms

SAVE-CFA trial

Methods:

- Retrospective, muticenter study.
- Patients with symptomatic CFA lesions (Rutherfrord 2 – 5) will be included.

- *Primary outcome* of this study will be target-lesion revascularization (TLR)

- Secondary endpoints: all-cause mortality, primary patency, vascular reinterventions of the index limb, major amputation, major adverse limb event (MALE), change in Rutherford class, redo puncture of the CFA treated.

- *Statistical analysis*: Propensity score matching (PSM) will be performed to compare outcomes