VŠEOBECNÁ FAKULTNÍ NEMOCNICE V PRAZE

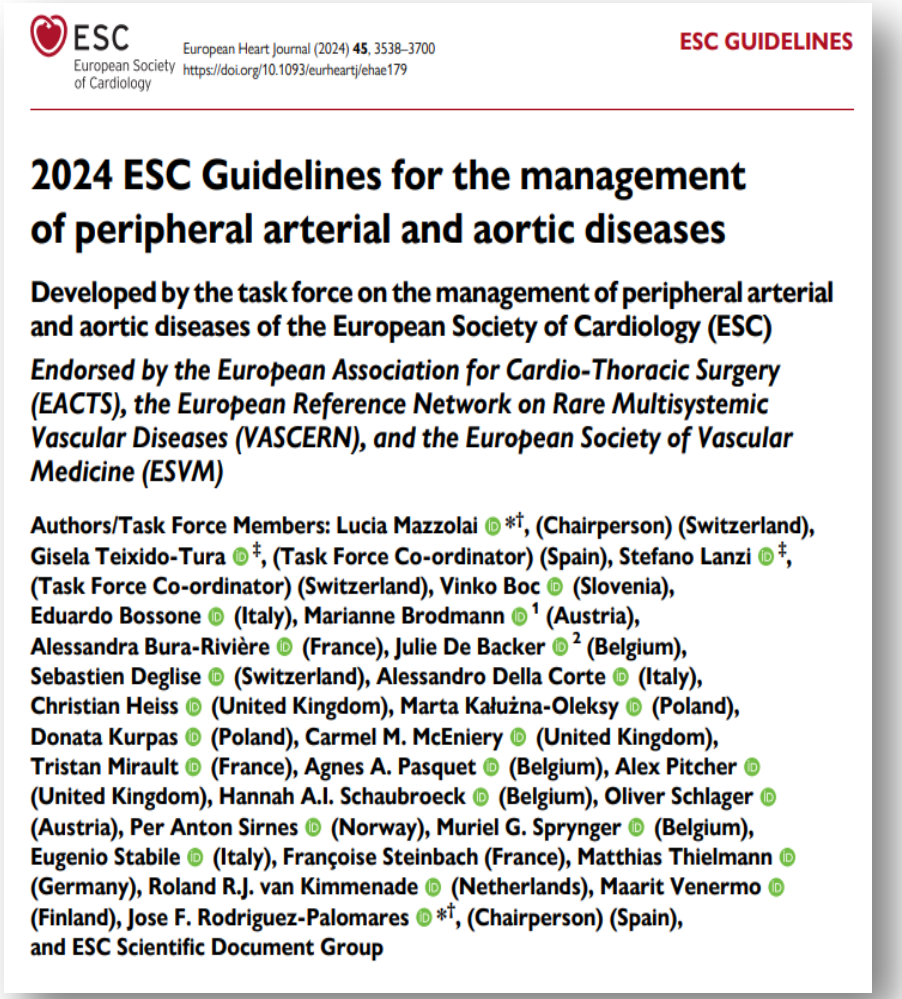
1. LÉKAŘSKÁ FAKULTA Univerzita Karlova

# Co říkají recentní doporučené postupy o léčbě onemocnění aorty

**Debora Karetová**

KOMPLEXNÍ KARDIO VASKULÁRNÍ CENTRUM VFN Praha

# Aorta v doporučeních ESC 2024 a ESVS 2026



ESC European Society of Cardiology
European Heart Journal (2024) **45**, 3538–3700
https://doi.org/10.1093/eurheartj/ehae179
ESC GUIDELINES

## 2024 ESC Guidelines for the management of peripheral arterial and aortic diseases

**Developed by the task force on the management of peripheral arterial and aortic diseases of the European Society of Cardiology (ESC)**

***Endorsed by the European Association for Cardio-Thoracic Surgery (EACTS), the European Reference Network on Rare Multisystemic Vascular Diseases (VASCERN), and the European Society of Vascular Medicine (ESVM)***

**Authors/Task Force Members: Lucia Mazzolai *†, (Chairperson) (Switzerland), Gisela Teixido-Tura ‡, (Task Force Co-ordinator) (Spain), Stefano Lanzi ‡, (Task Force Co-ordinator) (Switzerland), Vinko Boc (Slovenia), Eduardo Bossone (Italy), Marianne Brodmann [1] (Austria), Alessandra Bura-Rivière (France), Julie De Backer [2] (Belgium), Sebastien Deglise (Switzerland), Alessandro Della Corte (Italy), Christian Heiss (United Kingdom), Marta Kałużna-Oleksy (Poland), Donata Kurpas (Poland), Carmel M. McEniery (United Kingdom), Tristan Mirault (France), Agnes A. Pasquet (Belgium), Alex Pitcher (United Kingdom), Hannah A.I. Schaubroeck (Belgium), Oliver Schlager (Austria), Per Anton Sirnes (Norway), Muriel G. Sprynger (Belgium), Eugenio Stabile (Italy), Françoise Steinbach (France), Matthias Thielmann (Germany), Roland R.J. van Kimmenade (Netherlands), Maarit Venermo (Finland), Jose F. Rodriguez-Palomares *†, (Chairperson) (Spain), and ESC Scientific Document Group**

Clinical Practice Guidelines
Eur J Vasc Endovasc Surg (2026) 71, 172–270
EJVES Open Access

CLINICAL PRACTICE GUIDELINE DOCUMENT

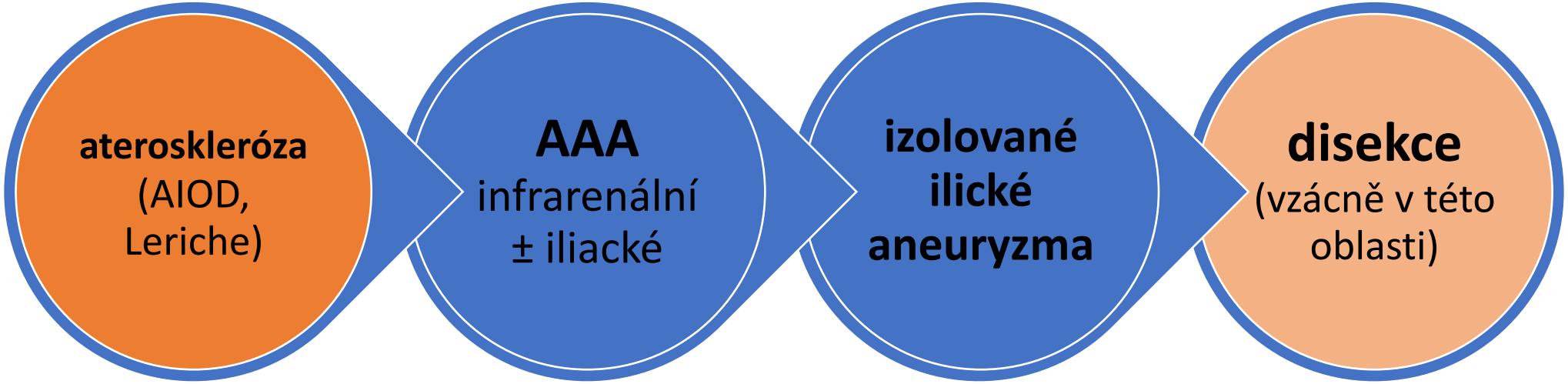
## European Society for Vascular Surgery (ESVS) 2026 Clinical Practice Guidelines on the Management of Descending Thoracic and Thoraco-Abdominal Aortic Diseases – Editor's Choice

Anders Wanhainen [*], Alexander Gombert, George A. Antoniou, Liliana A. Fidalgo Domingos, Ryan Gouveia e Melo, Martin Grabenwöger, Stephan Haulon, Athanasios Katsargyris, Tilo Kölbel, Ian M. Loftus, Kevin Mani, Barend M.E. Mees, Germano Melissano, Luís Mendes Pedro, Carlota F. Prendes, Konstantinos Spanos, Nikolaos Tsilimparis, Isabelle Van Herzeele, Maarit Venermo, Eric L.G. Verhoeven, Frederico Bastos Gonçalves, Martin Björck, Nabil Chakfé, Raphaël Coscas, Nuno V. Dias, Sandro Lepidi, Timothy A. Resch, Jean-Baptiste Ricco, Santi Trimarchi, Riikka Tulamo, Christopher P. Twine, Adam W. Beck, Colin D. Bicknell, Philippe Kolh, Anne Lejay, Gustavo Oderich, Hence J.M. Verhagen, Frank E.G. Vermassen [*]

**Objective:** The European Society for Vascular Surgery (ESVS) has developed clinical practice guidelines for the care of patients with descending thoracic and thoraco-abdominal aortic pathologies, in succession to the 2017 version, with the aim of assisting physicians and patients in selecting the best management strategy.
**Methods:** The guidelines are based on scientific evidence complemented with expert opinion on the matter. By summarising and evaluating the best available evidence, recommendations for the evaluation and treatment of patients have been formulated. The recommendations are graded according to the ESVS grading system, where the strength (class) of each recommendation is graded from I to III and the level of evidence from A to C.
**Results:** One hundred and twenty-nine recommendations have been issued across the following main topics: (1) acute thoracic aortic syndrome; (2) chronic type B aortic dissection; (3) descending thoracic and thoraco-abdominal aortic aneurysms; (4) ruptured descending thoracic and thoraco-abdominal aortic aneurysms; and (5) blunt thoracic aortic injury. Additional topics include genetic aortopathy, floating thrombus and shaggy aorta, inflammatory aortitis, mycotic aortic aneurysms, coarctation of the aorta, aberrant subclavian artery, and service standards such as surgical volume, imaging, risk assessment, and optimisation. Special considerations include pregnancy, left subclavian artery revascularisation, spinal cord ischaemia, stroke prevention, vascular access, and the patient's perspective. A final chapter addresses unresolved issues.
**Conclusion:** These clinical practice guidelines provide comprehensive, up to date advice to clinicians and patients on the management of descending thoracic and thoraco-abdominal aortic pathologies.

Keywords: Aneurysm, Aortic, Descending thoracic aorta, Dissection, Guideline, Thoraco-abdominal aorta
Available online 23 December 2025

# Hlavní témata v oblasti patologie břišní aorty




- shaggy aorta

- ≥55 mm (muži),
- ≥50 mm (ženy)
- rychlá progrese růstu

- ≥ 40 mm

k elektivnímu výkonu

# Aorta a aterosklerotické postižení

**statiny, antihypertenziva, antiagregace**

Grading Scheme for Aortic Atheroma

| Grade | Severity | Description | Thickness |
|---|---|---|---|
| 1 | Normal | Normal intima | <2 mm |
| 2 | Mild | Intimal thickening | ≥2 to <3 mm |
| 3 | Moderate | Atheroma | ≥3 to <4 mm |
| 4 | Severe | Atheroma | ≥4 mm |
| 5 | Complex | Atheroma | Any thickness ≥2 mm with mobile or ulcerated components |

**4-5:** vyšší riziko embolizace, SAPT+statin, ne DAPT

| Recommendations | Class | Level |
|---|---|---|
| ***Primary prevention*** | | |
| In patients with severe/complex aortic atheromatous plaques, statins should be considered to decrease progression and risk of CV events. | IIa | C |
| SAPT with clopidogrel or low-dose aspirin should be considered in severe/complex plaques. | IIa | C |
| Anticoagulation or DAPT are not recommended in aortic plaques since they present no benefit and increase bleeding risk. | III | C |
| ***Secondary prevention after an embolic event related to aortic atherosclerosis*** | | |
| In patients with an embolic event and evidence of an aortic arch atheroma, intensive lipid management to an LDL-C target <1.4 mmol/L (<55 mg/dL) is recommended to prevent recurrences. | I | A |
| In patients with an embolic event and evidence of an aortic arch atheroma, SAPT is recommended to prevent recurrences. | I | C |

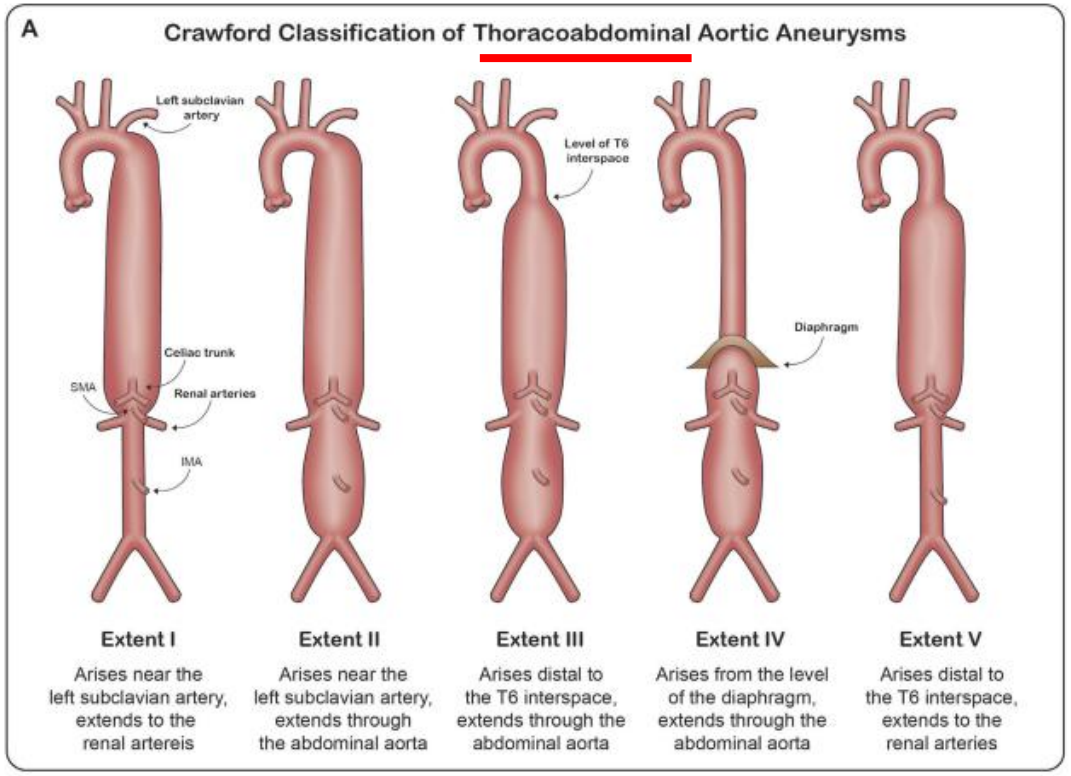
2024 ESC Guidelines for the management peripheral arterial and aortic diseases (European Heart Journal; 2024 – doi: 10.1093/eurheartj/ehae179)

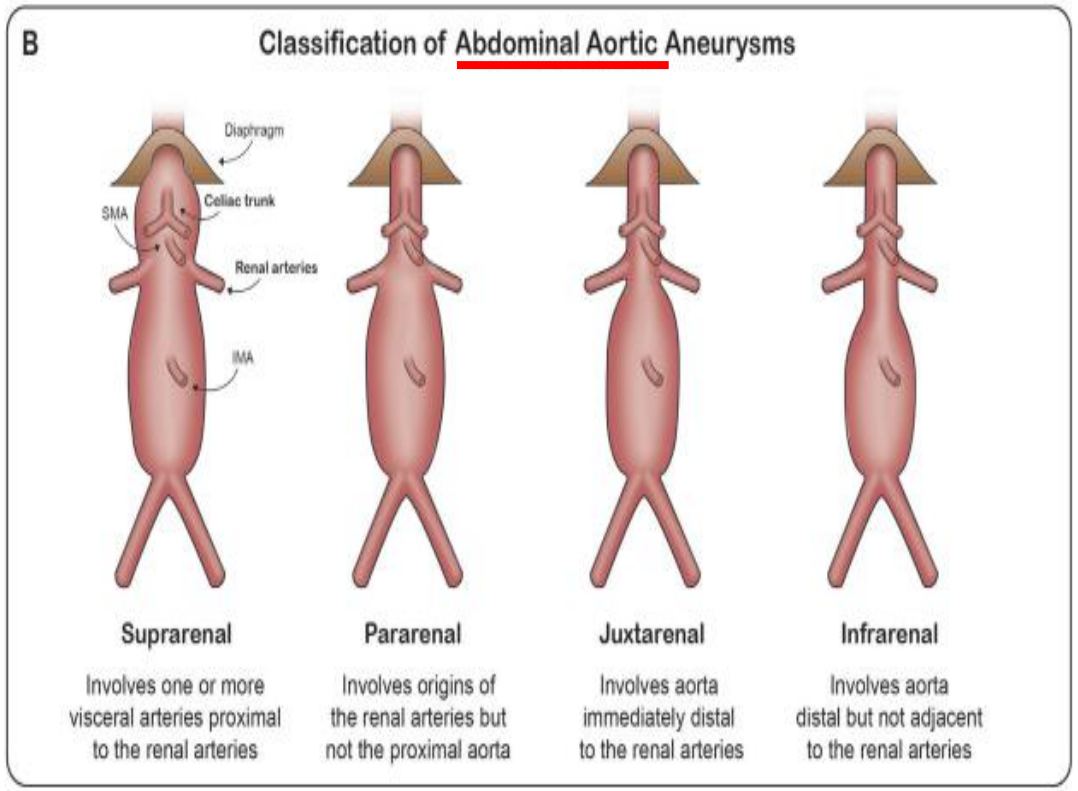
# Implikace zjištění aneuryzmatu hrudní a/nebo abdominální aorty

| Recommendations | Class | Level |
|---|---|---|
| When an aortic aneurysm is identified at any location, assessment of the entire aorta is recommended at baseline and during follow-up. | I | C |
| When a TAA is identified, assessment of the aortic valve (especially for BAV) is recommended. | I | C |
| When an AAA is identified, evaluation of the presence of aneurysm in the femoro-popliteal arterial segment should be considered. | IIa | C |
| Patients with aortic aneurysm are at increased risk of CVD, thus general CV prevention should be considered. | IIa | C |

2024 ESC Guidelines for the management peripheral arterial and aortic diseases (European Heart Journal; 2024 – doi: 10.1093/eurheartj/ehae179)

# Aneuryzmata hrudní a břišní aorty




Operace/TEVAR/EVAR: **≥ 60 mm** (≥ 55 nízké oper. riziko)

**≥ 55 mm resp. 50 u žen** při očekávaném dožití > 2 roky

**Sakulární: ≥ 45mm**

# Frekvence sledování AAA ultrasonograficky

| Recommendations | Class | Level |
|---|---|---|
| DUS surveillance is recommended every 6 months in men with AAA of 50–55 mm and in women with AAA of 45–50 mm. | I | B |
| CCT or CMR is recommended if DUS does not allow adequate measurement of AAA diameter. | I | B |
| DUS is recommended for AAA surveillance. | I | C |
| DUS surveillance every 3 years should be considered in patients with AAA of 30–<40 mm. | IIa | B |
| DUS surveillance should be considered annually in women with AAA of 40–<45 mm and in men with AAA of 40–<50 mm. | IIa | B |
| DUS surveillance should be considered every 4 years in patients with aortic diameter ≥25 mm and <30mm and life expectancy >2 years. | IIa | C |

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# Chirurgická vs endovaskulární léčba

| Characteristic | Favours open repair | Favours endovascular repair |
|---|---|---|
| Biological age and life expectancy | • Younger age<br>• Considerable life expectancy with acceptable quality of life | • Older age<br>• Limited life expectancy |
| Anatomical considerations | • If aortic and branch anatomy preclude endovascular approach<br>• Poor vascular access | • Suitable proximal and distal landing zones<br>• Favourable visceral and renal configuration<br>• Vascular access obtainable |
| Pathological | • Chronic dissection | • Acute dissection |
| Background/causal factor | • Hereditary aortic disease | • Degenerative aortic disease |
| Cardiopulmonary condition | • Good cardiopulmonary reserve | • Poor cardiopulmonary reserve |
| Fitness | • No significant comorbidities<br>• Successful rehabilitation likely | • Severe organ impairment (renal, kidney, pulmonary)<br>• Obesity<br>• Limited mobility, unlikely to rehabilitate successfully |
| Urgency | • Elective repair<br>• Emergency repair without a viable endovascular solution | • Elective repair<br>• Emergency repair with time for custom-made graft or suitable for standard grafts |

2024 ESC Guidelines for the management peripheral arterial and aortic diseases (European Heart Journal; 2024 – doi: 10.1093/eurheartj/ehae179)

# AAA: endovaskulární vs chirurgická revaskul.

**EVAR-first** (kde anatomie dovolí)

- personalizace
- anatomie (krček, a. iliaca)
- neplatí: „one-size-fits-all“
- fenestrované / větvené grafty
- řešení ilických aneuryzmat

Limitace EVAR

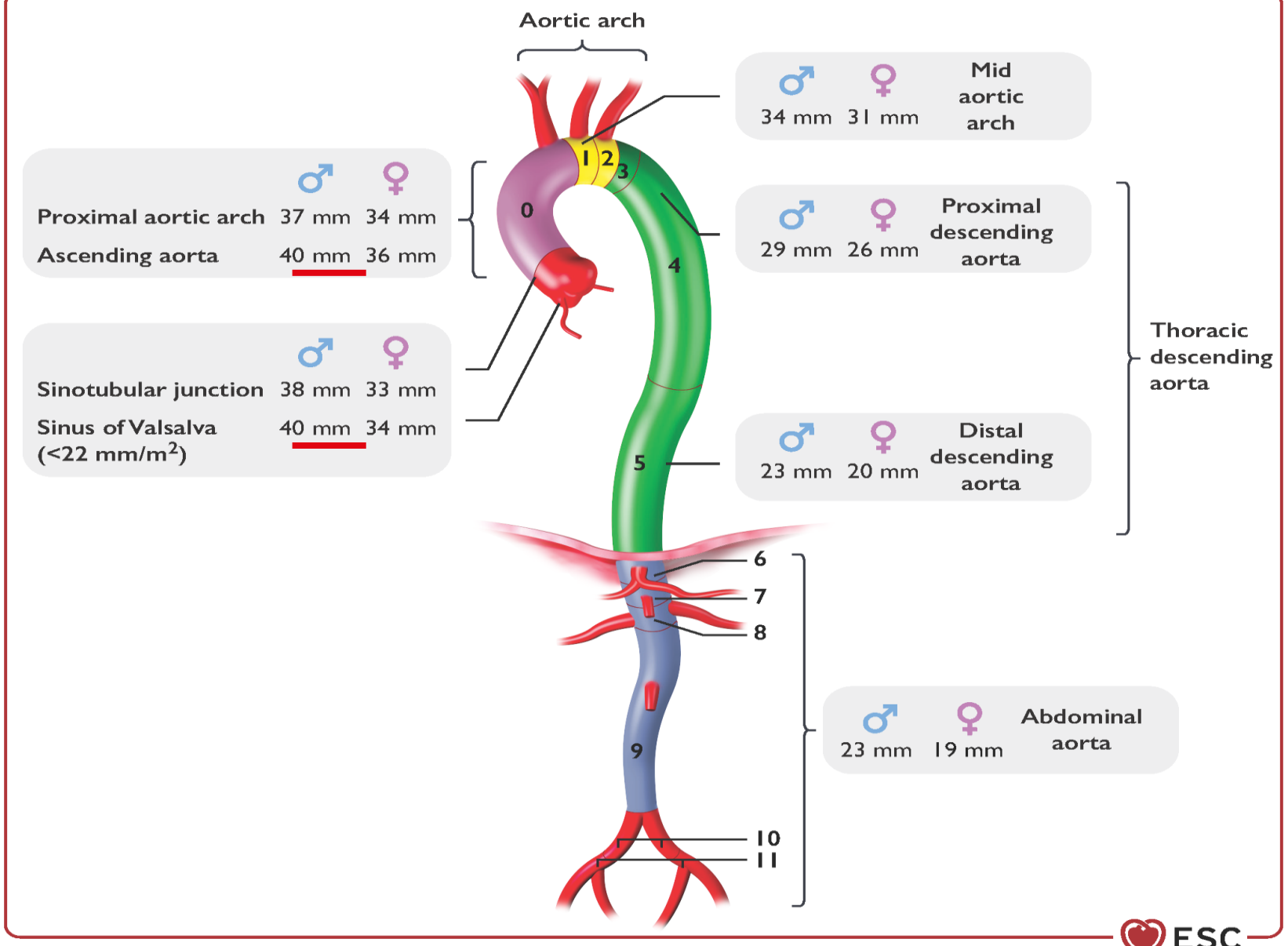
- reintervence
- endoleaky
- potřeba doživotního sledování

**Chirurgie:**

- mladší pacient
- dlouhá životní prognóza
- nevhodná anatomie pro EVAR

Periprocedurální mortalita daná u většiny díky přít. **ICHS,** nicméně u stabilních nem. není „preventivní“ revaskularizace myokardu indikována - nezlepšuje přežití

# INTERVENCE – ANEURYZMATA AORTY




**Obl. Valsalvova sinu:**
≥ 45 mm
**Aorta ascendens:**
≥ 50-55 mm
**Aortální oblouk:**
≥ 50-55 mm
**Aorta descendens:**
≥ 55-60 mm

**Abdominální aorta:**
muži ≥ 55 mm
ženy ≥ 50 mm

+ aortic size index (průměr/BSA)
+ rychlost růstu
+ lokalizace
+ etiologie (genetika, BAV, ..)

# AAA souhrn

| Recommendations | Class | Level |
|---|---|---|
| Elective repair is recommended if AAA diameter is ≥55 mm in men or ≥50 mm in women. | I | A |
| In ruptured AAA with suitable anatomy, endovascular repair is recommended over open repair to reduce peri-operative morbidity and mortality. | I | B |
| Prior to AAA repair, DUS assessment of the femoro-popliteal segment, to detect concomitant aneurysms, should be considered. | IIa | B |
| In patients with AAA with suitable anatomy and reasonable life expectancy (>2 years), EVAR should be considered as the preferred therapy, based on shared decision-making. | IIa | B |
| In patients with unruptured AAA and aneurysm growth ≥5 mm in 6 months or ≥10 mm per year, repair may be considered. | IIb | C |
| Elective repair for patients presenting with a saccular aneurysm ≥45 mm may be considered. | IIb | C |
| In patients with AAA and limited life expectancy (<2 years), elective AAA repair is not recommended. | III | B |
| Prior to AAA repair, routine evaluation with coronary angiography and systematic revascularization in patients with chronic coronary syndromes is not recommended. | III | C |

2024 ESC Guidelines for the management peripheral arterial and aortic diseases
(European Heart Journal; 2024 – doi: 10.1093/eurheartj/ehae179)

# ESVS 2026 - Aorta

**Hlavní témata:**

- Endovaskulární léčba prioritně, kdykoliv je anatomicky schůdná.
- Multidisciplinární přístup: centralizace v komplexních specializovaných centrech a důraz na multioborové indikační semináře
- Doklady kvality péče na podkladě dat – registry, reporty, dokládání kvality péče …
- hledání „neprobádaných oblastí evidence“ – plánování prospektivních studií.

Přístup na základě charakteristik pacienta – funkční statut a perspektivy do/přežití.

*Eur J Vasc Endovasc Surg (2026) 71, 172—270*

**Table 1. New, changed, and unchanged recommendations included in the European Society for Vascular Surgery (ESVS) 2026 clinical practice guidelines on the management of descending thoracic and thoraco-abdominal aortic pathologies in comparison with the previous 2017 guidelines. Numbers correspond to the numbers of the recommendations in the guideline document.**

**New Class I recommendations**

1. Management of descending thoracic aortic disease is recommended to be organised in defined networks with established referral pathways.
4. A fast track vascular surgical care pathway is recommended for patients with a descending thoracic aortic pathology who meet the size criteria for elective repair.
5. Aortic centres performing descending thoracic aortic repair are recommended to enrol cases in validated prospective quality registries to enable systematic monitoring of practice and clinical outcomes.
16. Assessment and optimisation of cardiovascular risk factors, best medical therapy, and a healthy lifestyle including smoking cessation are recommended for patients with descending thoracic aortic disease.
18. Patients with thoracic aortic disease are recommended to be fully informed about all treatment options (medical management, endovascular repair, or open surgery), as well as their short and long term risks, including their potential impact on function, independence, and quality of life, to support shared decision making.
20. Pregnant women with descending thoracic aortic aneurysm or dissection are recommended to be referred to experienced aortic centres for individualised multidisciplinary management by a cardiovascular–obstetric team.
29. Early clinical neurological evaluation is recommended after open or endovascular thoracic or thoraco-abdominal aortic repair to enable prompt detection and treatment of spinal cord ischaemia.
32. Pre-operative assessment of the iliofemoral access vessels is recommended before thoracic endovascular aortic repair.
35. Ultrasound guidance is recommended for percutaneous common femoral artery access in thoracic endovascular aortic repair.

**Table 1-*continued***

42. Patients with residual malperfusion following thoracic endovascular aortic repair for complicated acute type B aortic dissection are recommended to undergo immediate selective endovascular revascularisation of the affected target vessels.
60. Patients with a small descending thoracic or thoraco-abdominal aortic aneurysm who are deemed fit for repair are recommended for surveillance with serial cross sectional imaging to monitor growth.
74. Intra-operative administration of intravenous heparin (50 – 100 IU/kg) is recommended during elective endovascular repair of descending thoracic and thoraco-abdominal aortic aneurysms to prevent thromboembolic complications.
81. Thoracic endovascular aortic repair is recommended as the preferred treatment modality for ruptured descending thoracic aortic aneurysm.
88. Non-operative management, with blood pressure control and follow up imaging to assess lesion stability, is recommended for ESVS grade 1 blunt thoracic aortic injury without concomitant traumatic brain injury.
96. Continued medical therapy with anti-impulse treatment and serial imaging until aortic remodelling is recommended for patients with blunt thoracic aortic injuries managed non-operatively.
97. After endovascular stent graft repair of blunt thoracic aortic injury, follow up imaging is recommended at one month, one year, and annually thereafter for a minimum of five years, followed by continued imaging follow up every five to ten years for life.
103. Genetic counselling and testing are recommended in patients with thoracic aortic disease < 60 years of age, a family history of thoracic aortic disease, concomitant arterial aneurysms or dissections, or syndromic features.
104. Patients with suspected or confirmed genetic aortopathies are recommended for multidisciplinary management at highly specialised aortic centres.
114. Multidisciplinary team management is recommended for active inflammatory disease of the aorta and or its branches.
118. Long term post-operative surveillance is recommended for patients treated for inflammatory aortitis, given the high risk of delayed complications and disease progression.
119. Multidisciplinary management at highly specialised aortic centres is recommended for patients with mycotic thoracic and thoraco-abdominal aortic aneurysms.

# ESVS 2026 / hrudní aorta

## DISEKCE

**Recommendation 49** — Changed

Patients with chronic type B aortic dissection are recommended for life long antihypertensive therapy, with target blood pressure < 130/80 mmHg, and surveillance with serial cross sectional imaging after six and 12 months and thereafter individualised as appropriate.

| Class | Level | Reference |
|---|---|---|
| I | C | Consensus |

**Recommendation 52** — Unchanged

Patients with chronic type B aortic dissection and an aortic diameter ≥ 6.0 cm should be considered for repair, taking into account fitness, aneurysm anatomy, and patient preferences.

| Class | Level | Reference |
|---|---|---|
| IIa | C | Consensus |

**Recommendation 53** — Unchanged

A lower aortic diameter threshold (≥ 5.5 cm) for repair may be considered in selected* patients with chronic type B aortic dissection.

| Class | Level | Reference |
|---|---|---|
| IIb | C | Consensus |

* Based on aortic size index or significant growth.

**Recommendation 76** — New

For patients without an increased bleeding risk, temporary dual antiplatelet therapy may be considered after endovascular thoraco-abdominal aortic aneurysm repair with fenestrated or branched endografts to reduce thrombotic complications and improve target vessel patency.

| Class | Level | Reference |
|---|---|---|
| IIb | C | Consensus |

**Recommendation 135** — Changed

Patients with an iliac artery aneurysm (common iliac artery, internal iliac artery, and external iliac artery, or combination thereof) should be considered for elective repair at a diameter of ≥ 40 mm.

| Class | Level | References | ToE |
|---|---|---|---|
| IIa | C | Charisis *et al.* (2021),[826] Laine *et al.* (2017),[1065] Krupski *et al.* (1998),[1066] Chaer *et al.* (2008),[1072] Steenberge *et al.* (2022),[1077] Huang *et al.* (2008),[1079] Jalalzadeh *et al.* (2020),[1081] Fossaceca *et al.* (2015),[1083] Kasirajan *et al.* (1998),[1084] Kobe *et al.* (2018)[1085] | |

## TROMBUS V HRUDNÍ AORTĚ

**Recommendation 111** — New

Escalation of antithrombotic therapy is not indicated for asymptomatic mural thrombus in the descending thoracic aorta.

| Class | Level | Reference |
|---|---|---|
| IIIa | C | Consensus |

**Recommendation 112** — New

Antithrombotic therapy should be considered for symptomatic thrombus or asymptomatic "floating" thrombus in the descending aorta.

| Class | Level | Reference |
|---|---|---|
| IIa | C | Consensus |

**Recommendation 113** — New

Endovascular intervention may be considered for symptomatic thrombus or asymptomatic "floating" thrombus in the descending aorta when medical management is unsuccessful.

| Class | Level | Reference |
|---|---|---|
| IIb | C | Consensus |

# Periferní tepenné postižení (PAD):

# aortolické léze (AIOD)

# Aorto-ilická okluzívní nemoc / AIOD

- (asympt.) - klaudikace (hýždě, stehna) – kr
- nad 70 let: 15%
- Lericheův syndrom (Rene Leriche 1879-19
  dysfunkce + chybějící femorální pulzace v
- diferenciálně diagnosticky: venózní klaudi
  muskuloskeletální)

- Léčba: chirurgická vs endovaskulární

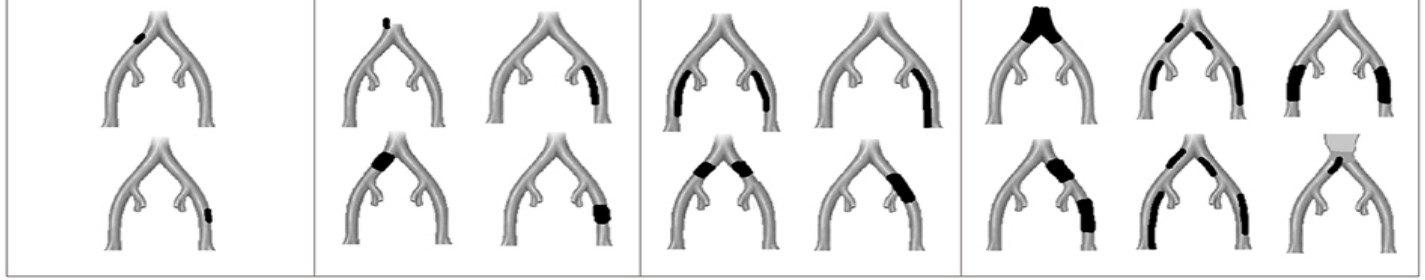
| Table 1: Surgical vs Endovascular Treatment of AOID | | |
|---|---|---|
| | Open Bypass | Endovascular Treatment |
| Weighted mean patient age | 60.4 years | 60.8 years |
| Mean length of hospital stay | 13 days | 4 days |
| Complication rate | 18.0% | 13.4% |
| 30-day mortality | 2.6% | 0.7% |
| Pooled primary patency - 1 year | 94.8% | 86.0% |
| Pooled primary patency - 3 years | 86.0% | 80.0% |
| Pooled primary patency - 5 years | 82.7% | 71.4% |
| Pooled secondary patency - 1 year | 95.7% | 90.0% |
| Pooled secondary patency - 3 years | 91.5% | 86.5% |
| Pooled secondary patency - 5 years | 91.0% | 82.5% |
| All values are statistically significant | | |

Adapted from: Indes JE, Pfaff MJ, Farrokhyar F, et al. Clinical outcomes of 5358 patients undergoing direct open bypass or endovascular treatment for aortoiliac occlusive disease: a systematic review and meta-analysis. J Endovasc Ther. 2013;20(4):443-455. doi:10.1583/13-4242.1

*Frederick M, et al. Leriche syndrome. J Gen Intern Med 2010; 25(10): 1102-4*

# TASC II klasifikace (2007)

endovaskulárně chirurgicky




| | |
|---|---|
| Type A lesions | 1. Single stenosis less than 3 cm of the CIA or EIA (unilateral/bilateral) |
| Type B lesions | Unilateral EIA occlusion not involving origin of internal iliac artery or the CFA<br>2. Single stenosis 3–10 cm in length, not extending into the CFA<br>3. Total of 2 stenoses 3–10 cm long in the CIA and/or EIA and not extending into the CFA<br>4. Unilateral CIA occlusion |
| Type C lesions | Unilateral EIA occlusion involving origin of internal iliac artery and/or the CFA<br>5. Bilateral 3–10 cm long stenoses of the CIA and/or EIA, not extending into the CFA<br>6. Unilateral EIA occlusion not extending into the CFA<br>7. Unilateral EIA stenosis extending into the CFA<br>8. Bilateral CIA occlusions |
| Type D lesions | 9. Diffuse multiple unilateral stenoses involving the CIA, EIA, and CFA (usually more than 10 cm)<br>10. Unilateral occlusion involving both the CIA and EIA<br>11. Bilateral EIA occlusions<br>12. Diffuse disease involving the aorta and both iliac arteries<br>13. Iliac stenoses in a patient with an abdominal aortic aneurysm or other lesion requiring aortic or iliac surgery |

*Norgren L, Hiatt W, Dormandy J, et al.*
***Inter-Society Consensus for the Management of Peripheral Arterial Disease (TASC II)***
*Journal of Vascular Surgery, 45, 2007, S5-S67*

# Aorto-ilické stenózy / okluze (AIOD)

## Endovaskulární přístup

- first-line u většiny lézí (ESC trend)
- PTA, stenty - covered, bare-metal
- CERAB – lepší anatomická rekonstrukce: stentgraft infrarenálně+2 stentgrafty do ilik

+ IVUS, intravaskulární lithotripse, aterektomie

## Hybridní výkony

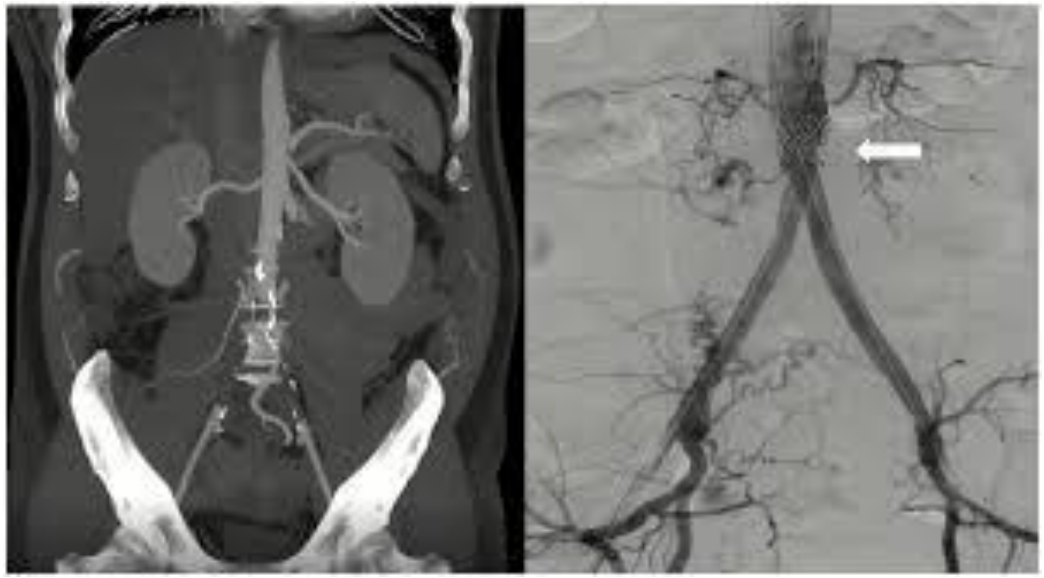
- kombinace:
  - endovaskulární + chirurgické bypassy

## Chirurgie

- aortobifemorální bypass
- aortoilický bypass, ilikofemorální bp
- (aortoilická endarterektomie)

Indikace:

- dlouhé TASC D léze
- selhání endovaskulární léčby



# Éra **CERAB:** Covered Endovascular Reconstruction of the Aortic Bifurcation

# COBEST trial – multicentrická studie

## Durability of the balloon-expandable covered versus bare-metal stents in the Covered versus Balloon Expandable Stent Trial (COBEST) for the treatment of aortoiliac occlusive disease

Bibombe P. Mwipatayi, MMed (Surg), FCS (SA), FRACS,[a,b] Surabhi Sharma, MBBS,[a] Ali Daneshmand, MD,[a] Shannon D. Thomas, BMedSc, FRACS,[c,d] Vikram Vijayan, MRCS, FRCS,[e] Nishath Altaf, PhD, FRCS,[a] Marek Garbowski, MB BS, FRACS,[f] and Mark Jackson, MD, FRACS,[g] on behalf of the COBEST co-investigators,* *Perth, Sydney, and Queensland, Australia; and Singapore*

*Objective:* The Covered vs Balloon Expandable Stent Trial (COBEST) is the first multicenter trial to investigate the patency of covered stents (CSs) and bare-metal stents (BMSs) in the treatment of aortoiliac arterial disease. The short-term results demonstrated that CSs were superior to BMSs in maintaining patency for TransAtlantic Inter-Society Consensus (TASC) C and D lesions at 18 months and were equivalent to BMSs for TASC B lesions. The current study was conducted to determine if the initial patency advantage of CSs over BMSs was sustained at the 5-year follow-up.

*Methods:* A retrospective post hoc analysis of COBEST was performed. Originally, 125 patients with 168 iliac arteries were prospectively enrolled and randomly assigned to receive a CS or BMS. In this study, 77 of the 125 patients (61.6%; 119 limbs) were assessed at 60 months for the primary and secondary end points, with particular attention paid to the outcomes stratified according to TASC lesion severity. The primary end point was the rate of binary stenosis or freedom from stent occlusion of the treated area, as determined by ultrasound imaging or quantitative visual angiography.

*Results:* The 5-year results of the COBEST showed that the CS had a significantly higher patency rate than the BMS at 18, 24, 48, and 60 months (95.1%, 82.1%, 79.9%, 74.7% for CS vs 73.9%, 70.9%, 63% and 62.5% for BMS; log-rank test, $P = .01$). On multivariate analysis, the type of stent used (hazard ratio [HR], 2.797; 95% confidence interval [CI], 1.471-5.318; $P = .002$) and the Rutherford classification (HR, 2.019; 95% CI, 1.278-3.191; $P = .026$) significantly affected the adjusted primary patency. On subgroup analysis, the CS showed significantly higher patency and a survival benefit compared with the BMS in TASC C and D lesions (HR, 8.639; 95% CI, 54.253-75.753; $P = .003$). Moreover, fewer patients received target limb revascularization in the CS group than in the BMS group (odds ratio, 2.32; 95% CI, 1.47-3.36; $P = .02$); however, there was no statistically significant difference in the rate of amputations between the groups.

*Conclusions:* The 5-year results of the COBEST demonstrated that the CS has an enduring patency advantage over the BMS in both the short and long terms. Furthermore, the CS showed acceptable patency rates for the treatment of more severe TASC C and D lesions, and patients who received a CS required fewer revascularization procedures. However, the choice of stent did not affect the rate of major limb amputations. (J Vasc Surg 2016;64:83-94.)

- průchodnost Covered Stents a Bare Metal Stents po 5 letech, TASC II léze C/D
- CS - vyšší průchodnost než BMS

  po 18, 24, 48 a 60 měs.:

- CS: 95.1%, 82.1%, 79.9%, 74.7%
- BMS: 73.9%, 70.9%, 63% a 62.5%

  p = 0.01

# Porovnání stentů – studie DISCOVER

## Editor's Choice – Two Year Results of the Randomised DISCOVER Trial Comparing Covered Versus Bare Metal Stents in the Common Iliac Artery

Joost A Bekken [1], Dammis Vroegindeweij [2], Jan Albert Vos [3], Jean-Paul P M de Vries [4], Jan Willem H P Lardenoije [5], Bart-Jeroen Petri [6], Maurice E N Pierie [7], Vincent van Weel [8], Joep A W Teijink [9], Bram Fioole [10]

Affiliations + expand

PMID: 36336284 DOI: 10.1016/j.ejvs.2022.11.008

Free article

### Abstract

**Objective:** It has been suggested that covered stents (CS) may lower restenosis rates compared with bare metal stents (BMS) after endovascular treatment of the common iliac artery. This trial aimed to provide additional evidence on the efficacy of CS vs. BMS in the common iliac artery.

**Methods:** This multicentre, randomised, single blind controlled superiority trial compared balloon expandable CS and balloon expandable BMS for advanced atherosclerotic lesions in the common iliac artery; this was defined as a stenosis > 3 cm in length or occlusion. The primary end point was freedom from binary restenosis after two years of follow up. The study was conducted according to the principles of the Declaration of Helsinki (version: October 2008) and registered with the Dutch Trial register (NTR3381).

**Results:** One hundred and seventy-four limbs were included between 2012 and 2019 with 87 limbs in each group. Six patients crossed over from the BMS group to the CS group but were analysed according to an intention to treat principle. Freedom from binary restenosis after two years of follow up was 84.7% (95% CI 76.7 - 92.7%) in the BMS group and 89.1% (95% CI 82.4 - 95.8%) in the CS group (p = .40). Freedom from occlusion was 95.0% (95% CI 90.3 - 95.7%) in the BMS group and 96.4% (95% CI 92.5 - 100%) in the CS group (p = .66). Freedom from target lesion revascularisation was 91.1% (95% CI 84.8 - 97.3%) and 95.2% (95% CI 90.7 -99.7%), respectively (p = .31). Technical success, complications, haemodynamic success, and clinical success were also comparable between both groups. Per-protocol analysis did not affect the outcomes of the study.

**Conclusion:** No difference was found between balloon expandable CS and BMS for treating advanced atherosclerotic lesions of the common iliac artery.

**Keywords:** Aortoiliac occlusive disease; Bare metal stents; Common iliac artery; Covered stents; Peripheral artery disease; Randomised controlled trial.

**Bare Metal Stents (BMS)** *versus* **Covered Stents (CS):**

**společné ilické tepny**, léze > 3 cm, i „A“ léze
174 končetin (2012-2019)

**Po 2 letech:**

- bez restenózy: 84,7% BMS a 89,1% CS
- bez okluze: 95% BMS a 87,4% CS

➢ **bez rozdílu** (lehčí pacienti než v COBEST)

# Management of Extensive Aorto–Iliac Disease: A Systematic Review and Meta–Analysis of 9319 Patients

Murtaza Salem [1], Mohammed Sayed Hosny [2], Federica Francia [2], Morad Sallam [2], Athanasios Saratzis [3], Prakash Saha [2], Sanjay Patel [2], Said Abisi [2], Hany Zayed [2]

Affiliations + expand

PMID: 34279686 DOI: 10.1007/s00270-021-02785-6

## Abstract

**Purpose:** Despite advances in endovascular management of aorto-iliac occlusive disease (AIOD) including covered endovascular reconstruction of aortic bifurcation (CERAB) techniques, guidelines for management of symptomatic Trans-Atlantic Inter-Society Consensus (TASC II) type C/D lesions favour open surgical revascularisation. This meta-analysis investigates outcomes in patients with TASC II C/D lesions treated with open bypass procedures (OS), standard endovascular treatments (SEV) or CERAB.

**Methods:** Multiple databases (MEDLINE, EMBASE and the Cochrane database) were searched to identify studies reporting endovascular and open treatment of extensive AIOD. Studies were independently assessed. Outcomes reported included 30-day morbidity/mortality and patency rates.

**Results:** A total of 9319 patients undergoing intervention for extensive AIOD were identified from 66 studies. Median patient age was 64 years (n = 3204) for SEV, 58 years (n = 240) for CERAB and 59 years for OS (n = 5875). Pooled meta-analysis for 30-day morbidity in patients undergoing SEV, CERAB and OS was 9, 10 and 15%, respectively. Thirty-day mortality rate was 0.79, 0 and 3% in the SEV, CERAB and OS groups, respectively. In these groups, one-year primary and secondary patency was 90, 88, 96 and 96, 97, and 97% whilst three-year primary and secondary patency was 78, 82, 93 and 93, 97, 97% respectively. Five-year primary and secondary patency was 71 and 89% for SEV and 88 and 95% for OS, respectively. CERAB data were only available to 3 years.

**Conclusions:** This meta-analysis shows that thirty-day morbidity and mortality favours endovascular techniques. Primary patency remains better with OS in both early and midterms;; however, secondary patency is comparable in all groups. These findings suggest that SEV/CERAB may be considered as an alternative to OS in higher-risk patients.

**Keywords:** Aorto-iliac disease; CERAB; Open bypass surgery; TASC C and D.



- 9 319 pac., TASC II C/D léze
- Data ze 66 studií

*Porovnání:*

- **SEV**/ standardní endovaskulární (3204 pac.)
- **CERAB** (240 pac.)
- **OS**/chirurgie (5875 pac. )

- 30 denní morbidita: 9 x 10 x 15%
- 30 denní mortalita: 0,8 x 0 x 3%
- 1roční průchodnost: 90 x 88 x 96%

- 3letá průchodnost: 78 x 82 x 93 %
- 5letá průchodnost: 71 x ??? x 89%

➢ **větší benefity endovaskulární léčby v 30-denní morbi a mortalitě**

➢ **primární průchodnost lepší u chirurgické léčby**

# Meta-analýza potahovaných stentů v aorto-ilickém řečišti

Meta-Analysis > Vasc Endovascular Surg. 2021 Aug;55(6):560-570.
doi: 10.1177/15385744211010381. Epub 2021 Apr 27.

## Covered Stents for Endovascular Treatment of Aortoiliac Occlusive Disease: A Systematic Review and Meta-Analysis

Austin Mallory [1], Stefanos Giannopoulos [1], Paul Lee [1], Damianos G Kokkinidis [1], Ehrin J Armstrong [1]

Affiliations + expand

PMID: 33902342 DOI: 10.1177/15385744211010381

### Abstract

**Purpose:** The treatment of aortoiliac occlusive disease (AIOD) has largely shifted to endovascular techniques, with primary stenting constituting the preferred treatment approach. The goal of the current study was to summarize available literature and to determine whether covered stents are superior to bare metal stents for the treatment of AIOD, in terms of both periprocedural and long-term outcomes.

**Methods:** A meta-analysis of 47 studies was conducted with the use of random effects modeling. The incidence of adverse events during follow up among the individual included studies was synthesized.

**Results:** Most of the lesions were located at the common iliac arteries and were chronic total occlusions. The procedure was technically successful in almost all cases in both groups, with a low rate of periprocedural complications observed in both groups. The reported primary patency rates for the non-covered and covered stent group during an average follow up of 24.3 months among the individual studies, were 84% and 92% respectively, while surgical or endovascular re-intervention was required in 10% of non-covered stent cases and in 6% of covered stent cases. Eight studies comparing covered vs non-covered stents in terms of patency demonstrated superiority of covered stents (OR: 2.47; 95% CI: 1.01-6.01; p = 0.047 Combining TASC C/D lesions together 12 studies reported 92% (95%CI:89%-95%) primary patency in the covered stent group, while 7 studies reported 75% (95%CI: 60%-88%) primary patency for cases treated with non-covered stents.

**Conclusion:** This study demonstrated that covered stents are safe and effective when utilized for the treatment of AIOD. Covered stents were associated with a statistically significant higher odds of primary patency in both the overall cohort and in more complex TASC C/D lesions. However, additional high-quality comparative analyses between covered vs bare metal stents and between several types of covered stents are needed to determine the most optimal treatment modality for AIOD.

- 47 studií, většina lézí v AIC a šlo o okluze
- Stanovení superiority potahovaných stentů (CS)
- Technický úspěch procedury vysoký v obou skupinách, malá četnost komplikací
- Průměrná doba sledování 24 měsíců
- Primární průchodnost – BMS: 84%, CS 92%
- Reintervence – BMS 10% a CS 6%

- **8 studií porovnávajících BMS vs potahované stenty prokázalo superioritu CS**

(OR: 2.47; 95% CI: 1.01-6.01; p = 0.047)

# Meta-analýza potahovaných stentů v aorto-ilickém řečišti se zahrnutím dat 2020-2024

## Systematic Literature Review and Meta-analysis of Covered Balloon-Expandable Stents for Aortoiliac Occlusive Disease

Michele Piazza [1], Kashfa Iqbal [2], Ryan J Imhoff [3], Bismark Baidoo [3], Martin Henessey [4], Masahiko Fujihara [5], Tatsuya Nakama [6]

Affiliations + expand

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Free article

### Abstract

**Purpose:** To analyze the safety and effectiveness of covered balloon-expandable (CBE) stent grafts for treatment of aortoiliac occlusive disease (AIOD) from publications between 2000 and 2024.

**Materials and methods:** A PubMed systematic literature review search was conducted to expand a previous review (2000-2019) and include publications between 2020 and 2024. Terms included balloon-expandable/expanding, iliac, and specific stent graft names. Study eligibility criteria included ≥5 patients with AIOD treated with CBE stents and reports of patency or freedom from target lesion revascularization (fTLR). Primary, primary-assisted, and secondary patency and fTLR rates at 1, 6, 9, 12, 24, 36, 48, and 60 months were analyzed.

**Results:** The search identified 252 records; 25 studies (29 publications) met eligibility, resulting in 1,983 patients included in the meta-analysis. The stent grafts included Advanta V12 Balloon Expandable Covered Stent/iCast Covered Stent System (Advanta V12/iCast; Getinge Maquet, Rastatt, Germany), GORE VIABAHN VBX Balloon Expandable Endoprosthesis (VBX Stent Graft; W. L. Gore & Associates, Inc. Flagstaff, Arizona), BeGraft Peripheral Stent Graft System and/or BeGraft Peripheral Plus Stent Graft (Bentley InnoMed GmbH, Hechingen, Germany), LifeStream Balloon Expandable Vascular Covered Stent (Becton Dickenson, Tempe, Arizona), iCover Stent Graft (iVascular, Barcelona, Spain), and mixed-device cohorts. Pooled stent graft primary patency rates at 12, 24, 36, 48, and 60 months were 91%, 85%, 81%, 79%, and 80%, respectively, and fTLR rates were 94%, 91%, 87%, 84%, and 85%, respectively. Primary patency was higher (P ≤ .05) for VBX Stent Graft than that for V12/iCast Stent Graft at 6 months (odds ratio [OR], 3.1), 12 months (OR, 2.2), and 24 months (OR, 2.8). The fTLR was also higher for VBX Stent Graft at 24 months (OR, 1.8; P = .042).

**Conclusions:** This updated systematic review and meta-analysis and findings, although observational and not confirmatory, add to the body of evidence supporting the clinical utility of CBE stents in managing AIOD.

- 25 studií…… 1 983 pacientů
- ADVANTA syst., GORE VIABAHN, BeGraft syst., LifeStream syst.
- Průchodnost: 12 – 24 – 36 – 48 – 60 měs.

  91% 85% 81% 79% 80%

# Současné možnosti léčby AIOD

**Endovaskulární léčba dominuje:**

- CERAB – komplexní léze
- Stentgrafty pro okluze, dlouhé léze, těžké kalcifikace, restenózy, bifurkační léze
- Kovové balon expandibilní stenty pro ostiální stenózy AIC, krátké rigidní

**Chirurgie – aortobifemorální bypass:** nejlepší dlouhodobá průchodnost, ale…