Iliac Branch Devices: What Does The Data Teach Us?

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To exclude or not to exclude the hypogastric artery?
Which are the clinical symptoms of HA embolisation during EVAR?
The effect of HA exclusion

Type of exclusion
- Coverage
- Coils
- Plug

Location of exclusion
- Proximal HA
- Distal HA

Side of exclusion
- Unilateral
- Bilateral

GRADE analysis: very low

61 studies

Type of exclusion

DIRECT COVERAGE

PLUG

GRADE analysis: very low
The effect of HA exclusion

61 studies

Type of exclusion
- Coverage
- Coils
- Plug

Location of exclusion
- Proximal HA
- Distal HA

Side of exclusion
- Unilateral
- Bilateral

GRADE analysis: very low

LOCATION OF EXCLUSION

Buttock claudication

22%

4%
The effect of HA exclusion

61 studies

GRADE analysis: very low

Type of exclusion
- Coverage
- Coils
- Plug

Location of exclusion
- Proximal HA
- Distal HA

Side of exclusion
- Unilateral
- Bilateral

It is recommended that the blood flow should be preserved to at least one hypogastric artery in the course of EVAR
Revascularisation of the HA

Treatment options

Sandwich technique
Nellix
Hybrid procedure
AUI + x-over
Iliac side branch devices

OFF-LABEL COMBINATIONS
Endografts with iliac side branch

Zenith Branch Endovascular Graft-Iliac Bifurcation
COOK Medical
20F

Excluder Iliac branch endoprosthesis
GORE
16F

E-iliac endoprosthesis
JOTEC
18F
Zenith ISB-endograft Evidence

From the Society for Vascular Surgery

**Durability of iliac artery preservation associated with endovascular repair of infrarenal aortoiliac aneurysms**

Behzad S. Farivar, MD, Mohammad N. Abbasi, MD, Agenor P. Dias, MD, Yuki Kuramochi, BSN, Corey S. Brier, MA, F. Ezequiel Parodi, MD, and Matthew J. Eagleton, MD, Cleveland, Ohio

N=72 pts
Mean FU: 41±28 months

Technical success: 97%
Overall morbidity (30 days): 8%

**Freedom from AAA-related mortality @ 10yr**: 99%

**Freedom from type I/III endoleaks @ 10yr**: 99%

**Freedom from secondary interventions @ 10yr**: 81%

**Primary patency @ 10 yr**: 77%

Farivar et al. J Vasc Surg 2017
Zenith ISB-endograft Evidence

650 IBDs
6 European countries
Mean radiological follow-up: 30 months

Technical success: 98%
Overall occlusion rate: 2%

Main risk factors
- Poor landing zone in case of isolated IBDs
- Elongated external iliac arteries

Donas et al. J Endovasc Ther 2017
Excluder ISB-endograft

Evidence

From the Society for Vascular Surgery

Prospective, multicenter study of endovascular repair of aortoiliac and iliac aneurysms using the Gore Iliac Branch Endoprosthesis

Darren B. Schneider, MD, a Jon S. Matsumura, MD, b Jason T. Lee, MD, c Brian G. Peterson, MD, d Rabih A. Chaer, MD, e and Gustavo S. Oderich, MD, f

New York, NY; Madison, Wisc; Stanford, Calif; St. Louis, Mo; Pittsburgh, Pa; and Rochester, Minn.

- Prospective multicentre study
- 63 patients
- 28 centres – USA
- Bilateral CIA aneurysms: occlusion of the contralateral side

Technical success: 95%

Primary patency @ 6 months: 95% (n=3)

Buttock claudication: 0%

Type I/III endoleaks: 0%

5-year follow-up?

Schneider et al. J Vasc Surg 2017
E-iliac ISB-endograft Evidence

A multicenter 12-month experience with a new iliac side-branched device for revascularization of hypogastric arteries

- Retrospective multicentre study
- 70 patients
- 6 centres – Germany
- Median follow-up: 12 months (6-16 m)

Freedom from endoleak @ 1y: 87%
Freedom from occlusion @ 1y: 92%

Technical success: 100%
No adverse events @ 30 days
Excluder IBD was more conformable than COOK ZBIS in patients with severe iliac tortuosity (Index ≥ 1.14)

Tortuosity of the iliac arteries
Specific scenarios
Aneurysm of the hypogastric artery

Outcomes of a novel technique of endovascular repair of aneurysmal internal iliac arteries using iliac branch devices

Martin Austermann, MD, Theodosios Bisdas, MD, Giovanni Torsello, MD, Michel J. Bosiers, MD, Konstantinos Lazaridis, PhD, and Konstantinos P. Donas, MD, PhD, Münster, Germany, and Athens, Greece

N = 21 branches
Advanta V12 + Viabahn + bare-metal stent

Primary patency @ 2y 95%

Type Ib EL or aneurysm post EVAR

N=18 consecutive patients
Type Ib EL after EVAR

Technical success: 100%
Primary patency HA @ 1 year: 100%

Freedom from reintervention @ 1 y: 83%
Take home messages

1. Preserve at least one HA
2. Use either direct coverage or amplatzer plug as proximally as possible to exclude the HA
3. All ISB devices showed excellent rate of technical success
   a. ZBIS: long-term efficacy, no prospective studies
   b. Excluder ISB: conformable in tortuous iliac vessels, only mid-term proven efficacy
   c. E-iliac: promising 12-month results
4. Aneurysm of the HA is not an exclusion criterion for ISB-devices
5. ZBIS is the device of choice for the treatment of type 1b EL post-EVAR