

CICE 2020

March 31, 2020 Pre-congress course

April,
01 - 03

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Comparison and results of endovascular repair techniques in elective bilateral aortoiliac aneurysms

Armando C Lobato, MD, PhD



São Paulo Vascular & Endovascular Institute (ICVE-SP), São Paulo, Brazil

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✓ Nothing to Disclose



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Background

- ◆ Despite the improvement in endovascular techniques, one aspect of aneurysmal disease that continues to be challenging is the management of HA aneurysms.
- ◆ Up to 30% of patients with AAA due to concomitant iliac artery aneurysmal disease are unfit for standard EVAR.



Background

- ◆ Sacrificing the hypogastric artery for effective treatment is not without sequelae, which may include buttocks claudication, colonic ischemia, spinal cord ischemia, as well as buttock and/or scrotal necrosis.



Methods

- ◆ From Jan 2000 to Dec 2019, 122 patients with asymptomatic AAA (mean \varnothing : 56 mm) associated with BCIAA (mean \varnothing : 32 mm) underwent elective EVAR at our Institution.
- ◆ A total of 244 CIAA were treated using either the same technique bilaterally or a different technique in each side.



Methods

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	N° Patients	Period
Bilateral BBT	09	2000-2016
Bilateral CE	47	2000-2008
Bilateral ST	06	2008-2016
Unilateral ST + Contralateral CE	27	2008-2016
Unilateral ST + Contralateral BBT	13	2008-2016
Unilateral CE + Contralateral BBT	20	2000-2016

TOTAL

122

ST: Sandwich Technique; BBT: Bell-Bottom Technique; CE: Coil Embolization



Methods

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	HAER by ST	HAI by CE	HAP by BBT
GROUP I	52		
GROUP II		141	
GROUP III			51

- *ST: Sandwich Technique; BBT: Bell-Bottom Technique; CE: Coil Embolization*
- *HAP: Hypogastric Artery Preservation*
- *HAER: Hypogastric Artery EndoRevascularization;*
- *HAI: Hypogastric Artery Interruption*



Methods

	BBT		HAO		ST		p-value
Age (Mean)	72		72		73		NS
Male	33	78,6%	79	84,0%	37	80,4%	NS
Caucasian	30	71,4%	75	79,8%	36	78,3%	NS
Black	10	23,8%	13	13,8%	5	10,9%	NS
Asian	2	4,8%	6	6,4%	5	10,9%	NS
Hypertension	29	69,0%	50	53,2%	24	52,2%	NS
Smoking	32	76,2%	66	70,2%	29	63,0%	NS
PAOD	13	31,0%	30	31,9%	14	30,4%	NS
COPD	4	9,5%	14	14,9%	6	13,0%	NS
Hypercholesterolemia	18	42,9%	36	38,3%	18	39,1%	NS
DM	11	26,2%	24	25,5%	9	19,6%	NS
Renal Insufficiency	9	21,4%	11	11,7%	4	8,7%	NS
Cardiac disease	10	23,8%	15	16,0%	8	17,4%	NS
CAD	17	40,5%	21	22,3%	13	28,3%	NS
Obesity	10	23,8%	10	10,6%	5	10,9%	NS
Stroke/TIA	7	16,7%	14	14,9%	5	10,9%	NS
Antiplatelet	26	61,9%	52	55,3%	23	50,0%	NS
Statin	26	61,9%	51	54,3%	25	54,3%	NS
Beta-blocker	25	59,5%	44	46,8%	20	43,5%	NS

Kruskal-Wallis



Methods

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	BBT		HAO		ST		p-value
	Mean	SD	Mean	SD	Mean	SD	
Right CIA	20,16	1,4	36,25	7,46	39,19	11,47	0,001
Left CIA	19,78	3,16	37,89	9,47	34,51	7,53	0,003
Right HA	5,50	0,90	8,73	6,88	13,44	11,50	0,000
Left HA	5,82	0,93	9,36	8,44	14,01	9,60	0,007

Kruskal-Wallis



Results

Variable	ST	HAO	BBT	p-value
Mean / Follow-up (months)	39,31	63,33	60,94	0,0014
Technical Success (%)	100	100	100	NS
Early Related Mortality (%)	0,00	2,13	0,00	0,0412
Late Related Mortality (%)	1,92	1,42	5,88	0,0065
Aneurysm rupture (%)	0,00	0,00	3,92	0,0091
Reintervention (%)	5,77	8,51	7,84	NS
Late Endoleak Type III (%)	1,92	1,42	1,96	NS
Early Buttock Claudication (%)	1,92	21,28	1,96	0,0079
Late Endoleak Type II (%)	1,92	15,60	1,96	0,0350
Iliac Limb Migration (%)	1,92	0,00	11,76	0,0398
Late Endoleak Type IB (%)	0,00	0,00	7,84	0,0459

Cox Regression



Results

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Cox Regression



Results

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Variable	HAO Bilateral	HAO Unilateral	p-value
Early Type IA endoleak	4	1	0,000
Late Related Mortality	2	0	0,004
Early Type II endoleak	14	08	0,001
Late Type II endoleak	23	1	0,000
Early Buttock Claudication	31	10	0,000
Permanent Buttock Claudication	19	0	0,000

Cox Regression



Results

Variable	BBT > 20 mm	BBT ≤ 20 mm	p-value
Early Type IA Endoleak	2	0	NS
Late Related Mortality	3	0	0,026
Early Type II Endoleak	9	4	NS
Late Type II Endoleak	2	1	NS
Early Type IB Endoleak	3	0	NS
Late Type IB Endoleak	7	1	0,014
Late Aneurysm Rupture	2	0	0,043
Iliac Limb Migration	11	2	0,016

Cox Regression



Results

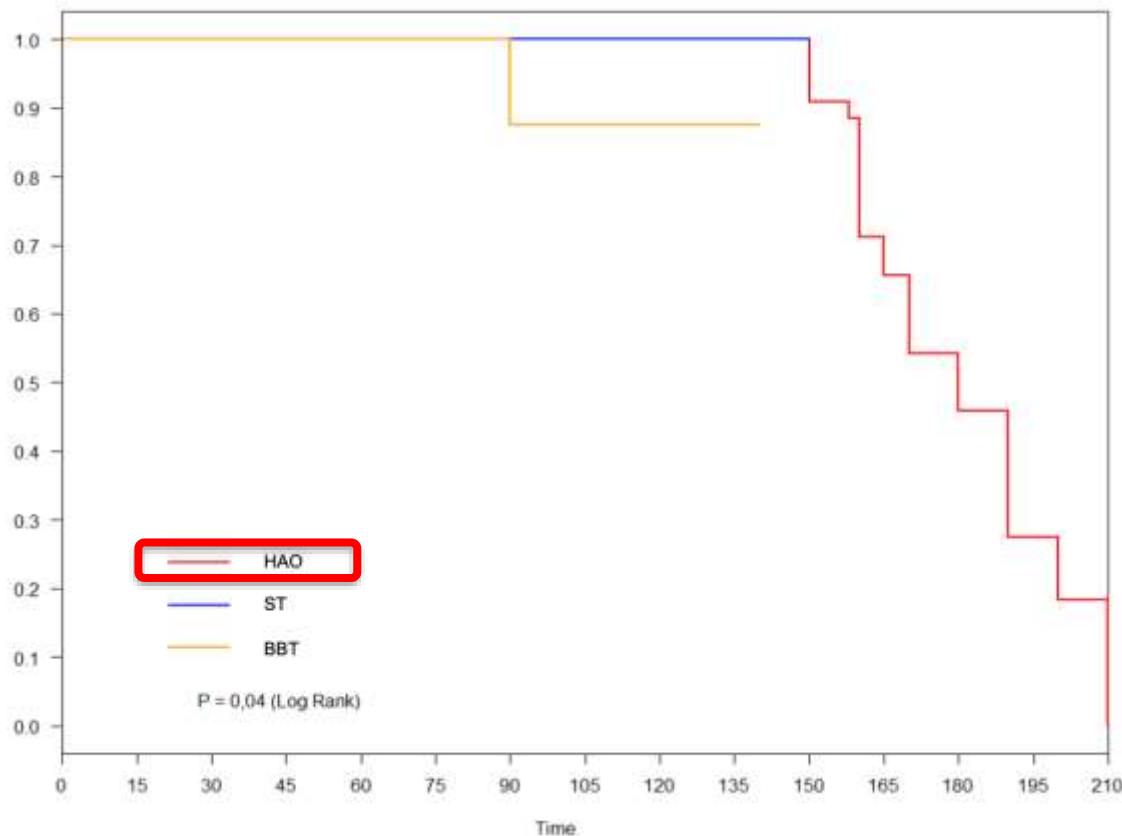
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Late Type II Endoleak

Kaplan-Meier



Results

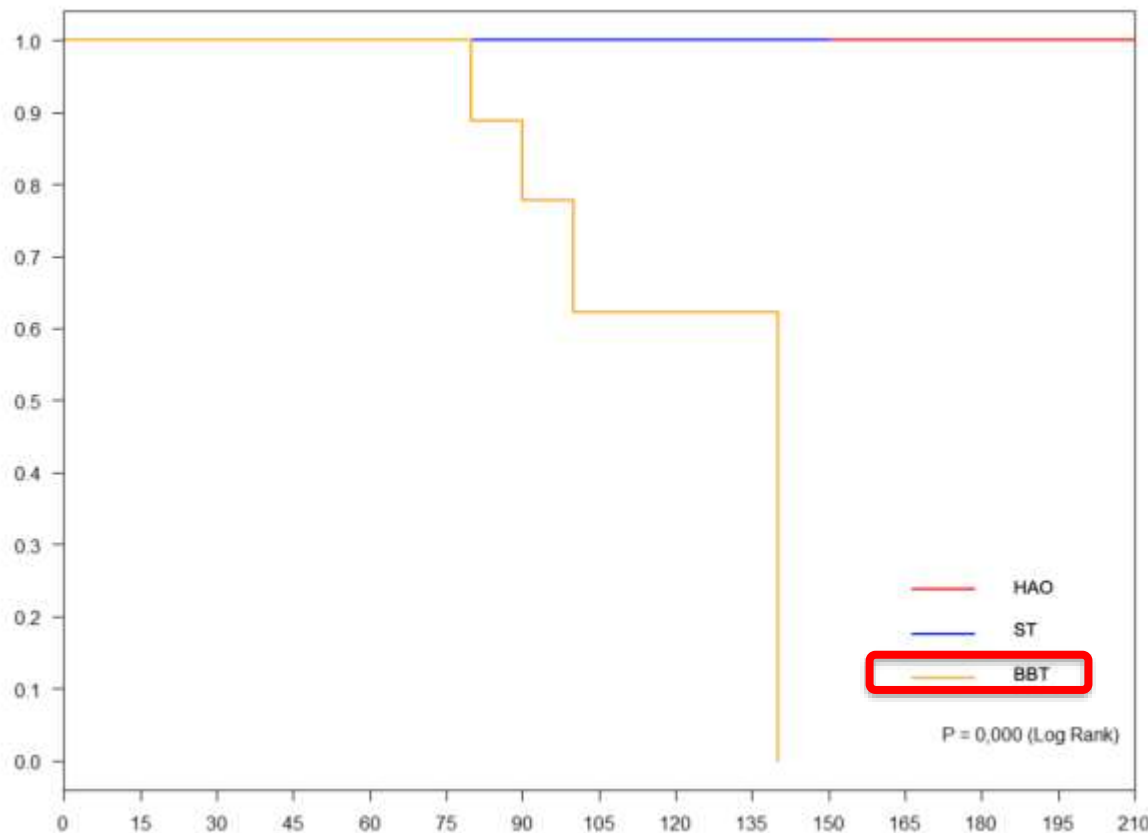
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Late Type IB Endoleak

Kaplan-Meier



Results

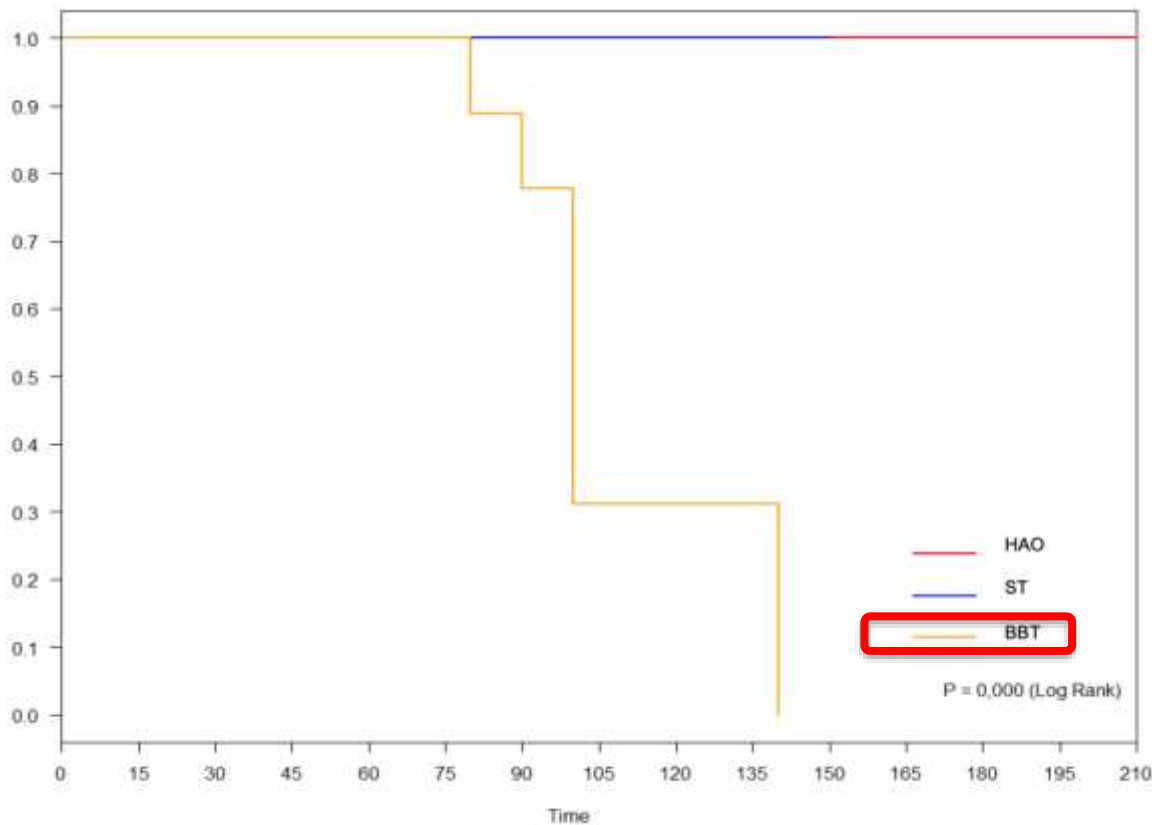
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Late ELG Migration

Kaplan-Meier



Results

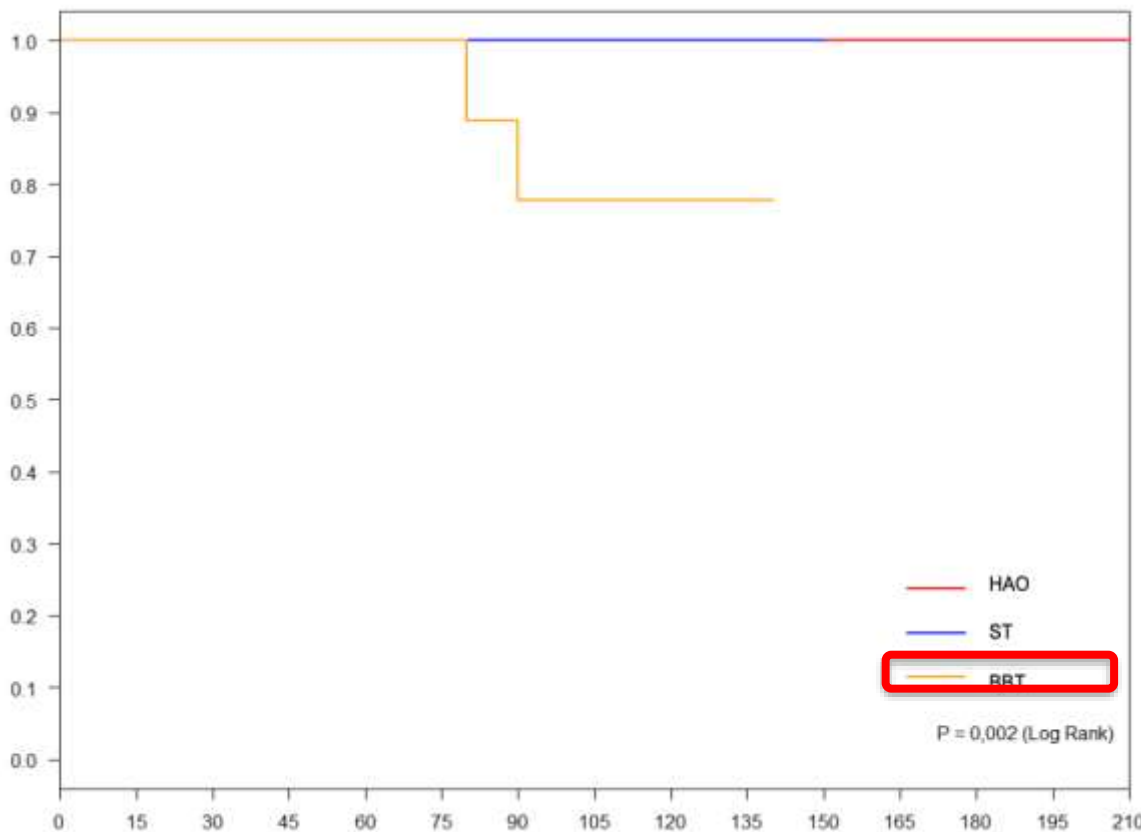
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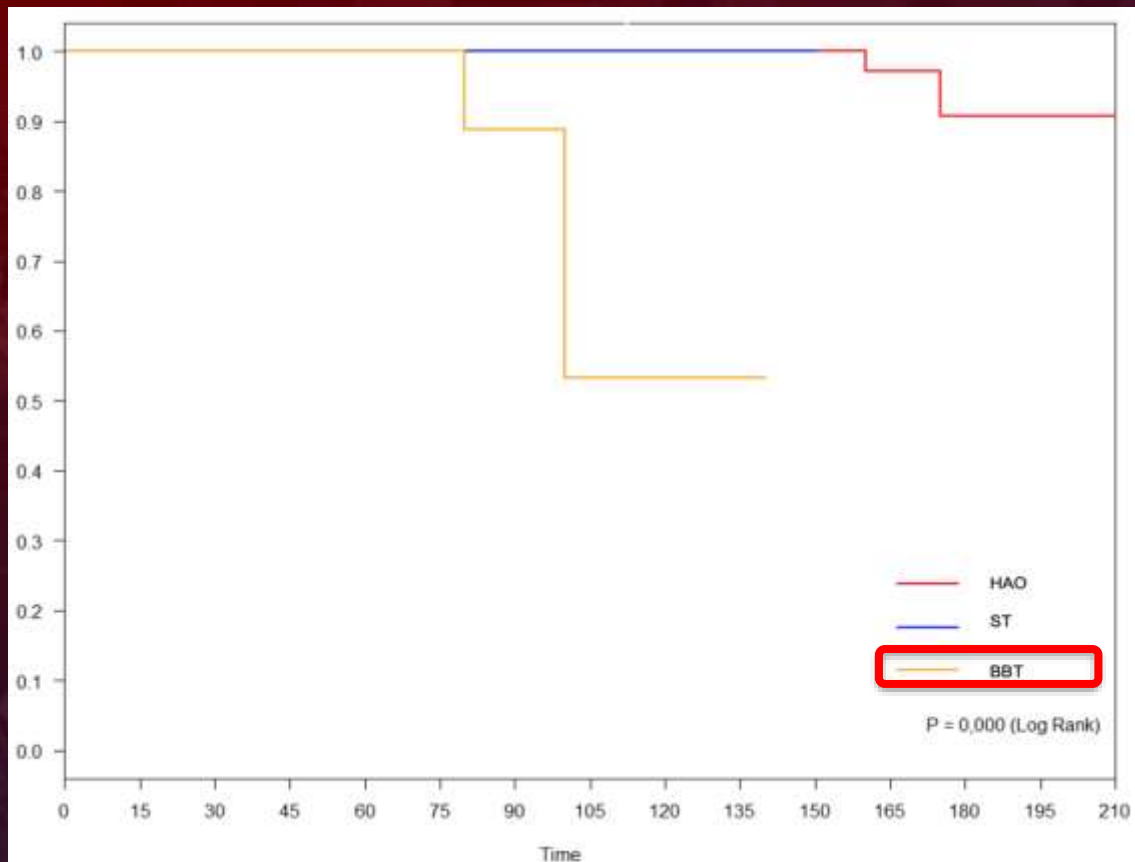


Late Rupture AAA

Kaplan-Meier



Results



Late Related Mortality

Kaplan-Meier



Conclusions

- ◆ BBT can be used in a safe way in
 - ◆ AIA with CIAA < 20 mm
- ◆ Bilateral HAO should be avoided due to significant high early mortality rates
- ◆ Unilateral HAO can be used in
 - ◆ severe HA stenosis and/or a very poor runoff
 - ◆ HA trunk < 4 mm
 - ◆ celiac trunk and, superior mesenteric artery and, deep femoral artery patents
- ◆ ST should be used in
 - ◆ CAAA \geq 20 mm
 - ◆ HA \geq 4mm in diameter
 - ◆ HA with good runoff



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