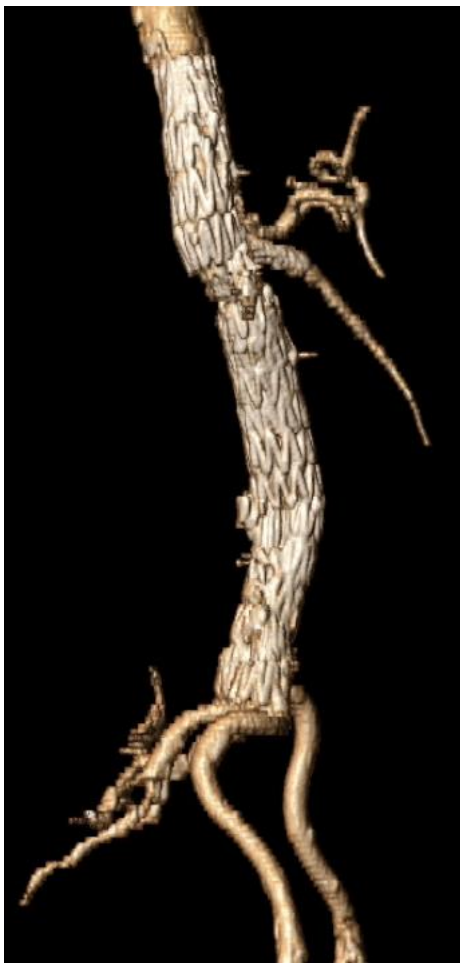


The Low Down on EVAS, Chimney and Complex Aneurysms

Matt Thompson

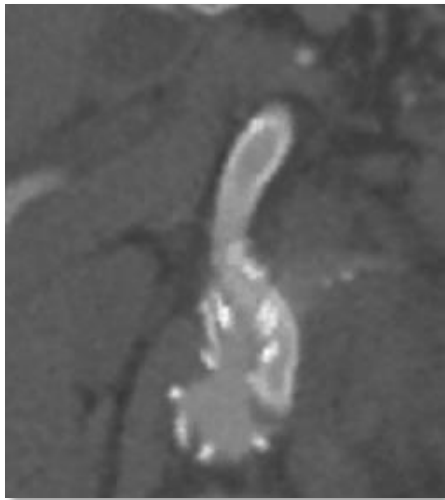
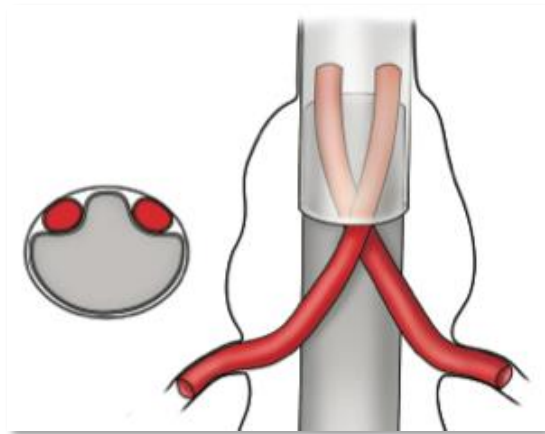
St Georges Vascular Institute, London, UK

Endovascular Treatment Juxta-Renal AAA



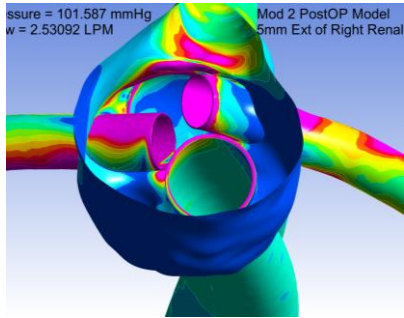
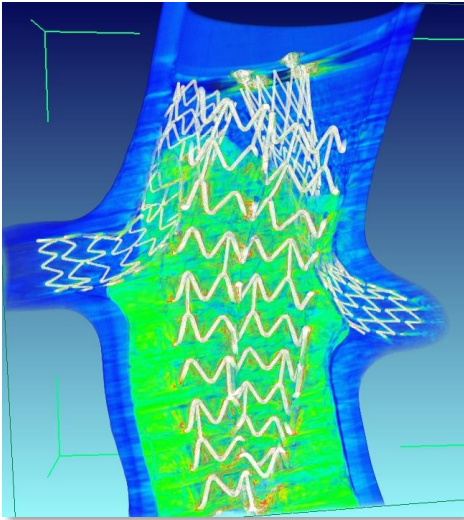
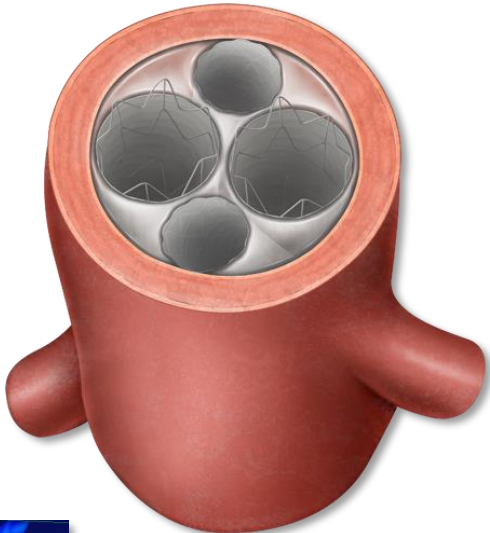
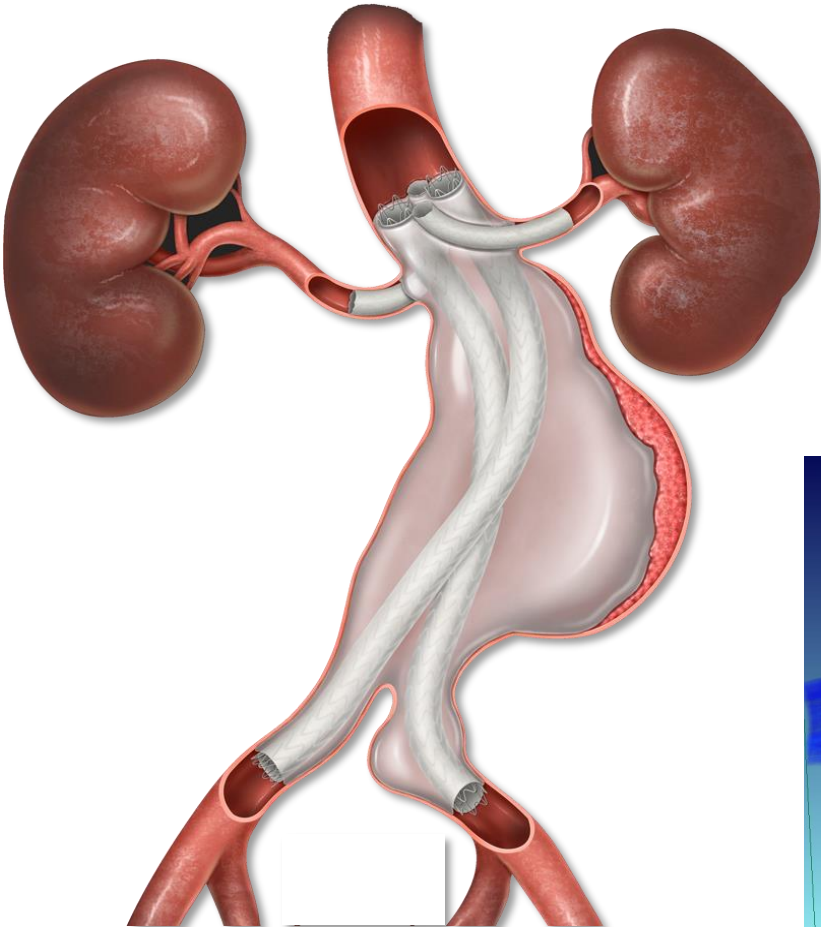
- CMD “gold-standard” but temporal and manufacturing constraints
 - Significant “turndown” rate
- 7% early reintervention, 24% mortality in sealing zone 6
- “Off-shelf” fEVR limited by applicability and durability

EVAR and Parallel Grafts for Juxta-Renal AAA



- Near universal applicability
- Early results better than expected – durability?
 - Issue is seal – gutters / endoleaks
 - 13% early endoleak
- Improved seal with polymer based technology?

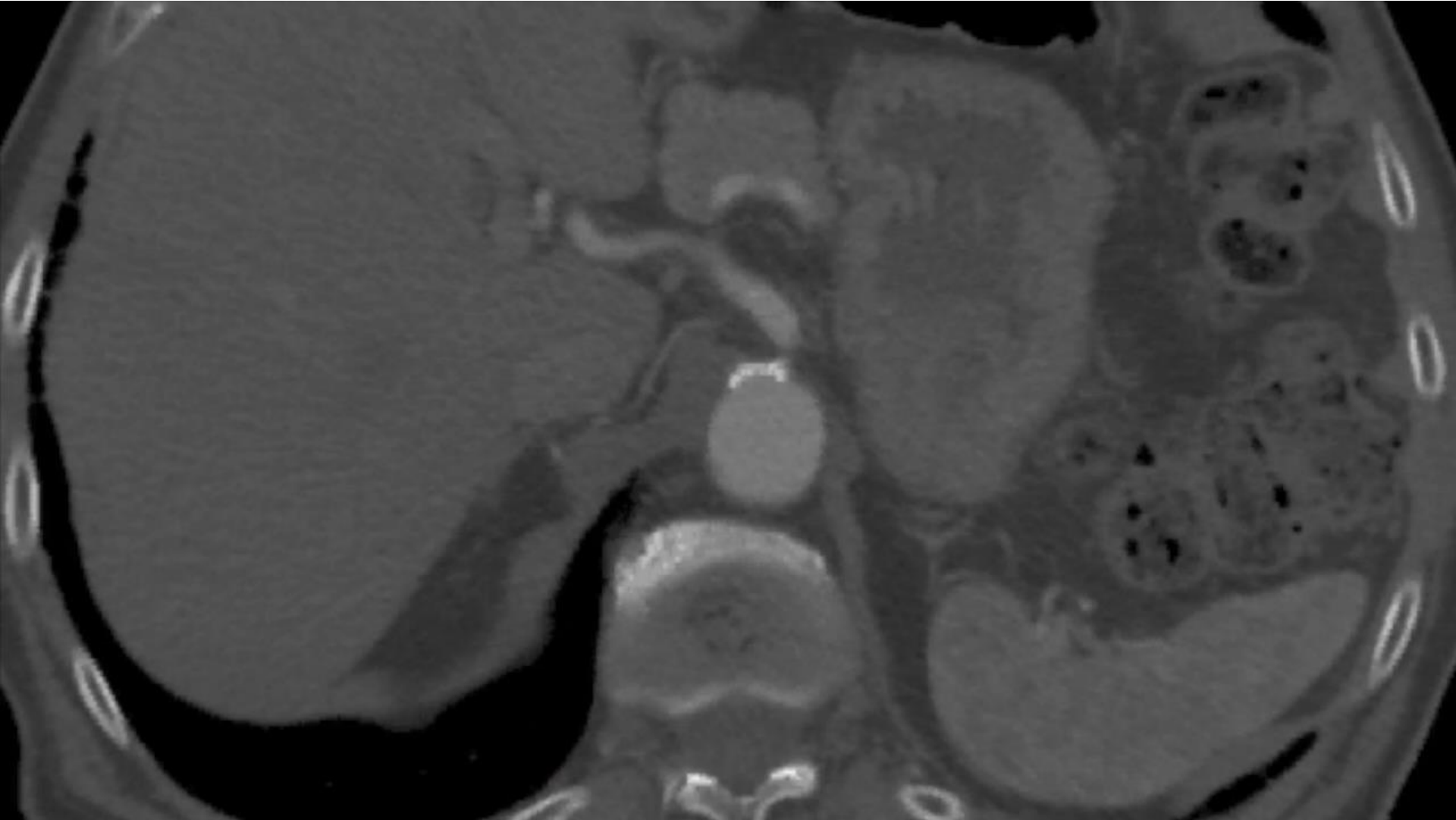
EVAS and Parallel Grafts



Parallel Grafts and EVAS – Technique

- Plan to increase sealing zone to 1.5-2cm
 - 7F sheaths placed in target vessels
 - Aim for parallel alignment
- Inflate Nellix stents first and then visceral stents
- Keep balloons inflated whilst endobags filled and polymer cures





MT 2016

- **Post-market registry of the Nellix system with chimney Stents**
 - **Open-label, single-arm, no prospective screening**
 - **Early in global and institutional experience**
 - **187 patients (154 primary, 9 rAAA, 25 EVAR, 5 EVAS)**
 - **Endpoints typical of EVAR therapy in complex AAA**

De Novo Procedures (154)

Single
40.3%

N=62

LRA = 33, RRA = 27

SMA = 1

Not Specified = 1



Double
35.1%

N=54

Both RA = 49

RA and SMA = 4

Not Specified = 1



Triple
17.5%

N=27

Both RA, SMA = 24

RA, SMA, CA = 2

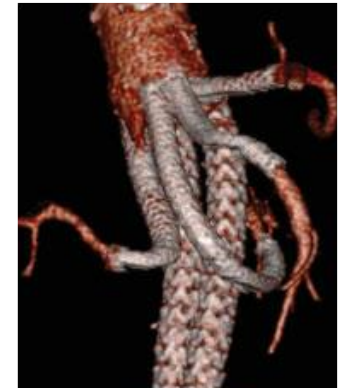
Not Specified = 1



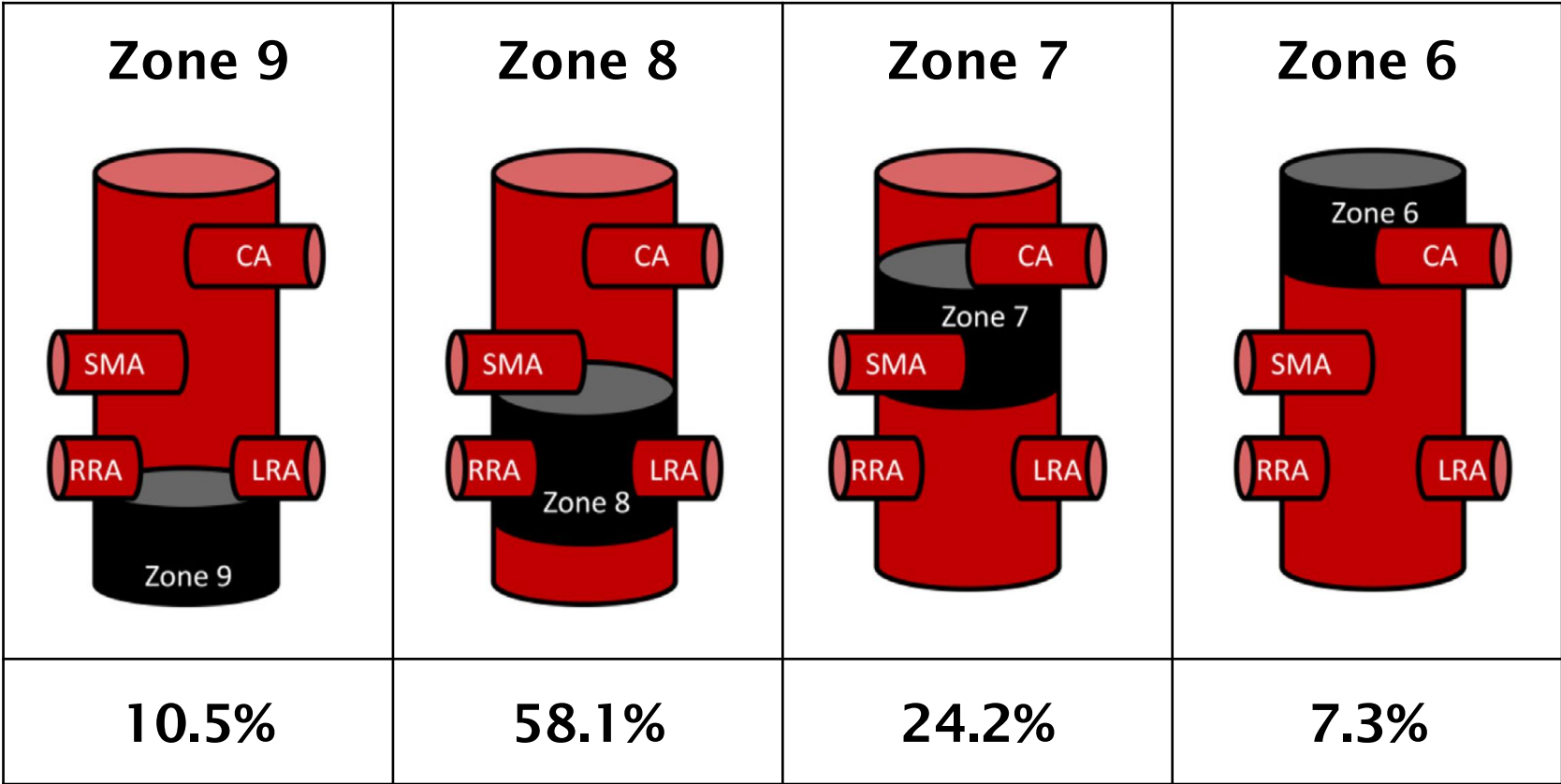
Quadruple
7.1%

N=11

Both RA, SMA, CA



Aneurysm Morphology

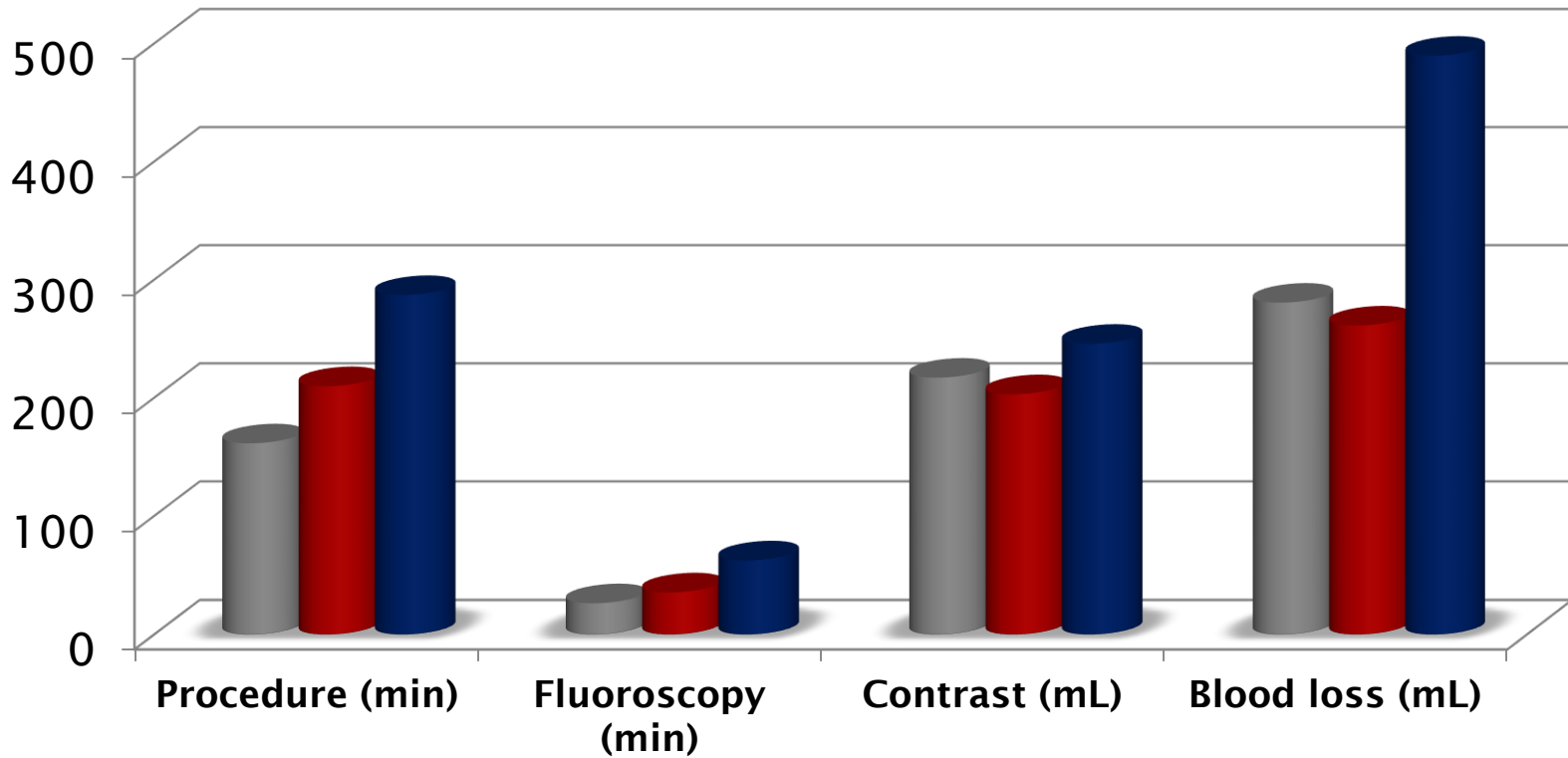


Patient Demographics & History

	De Novo (n=154)	Single (n=62)	Double (n=54)	Triple- Quadruple (n=38)
Age (yrs)	72.3 ± 7.7	72.5 ± 8.1	72.4 ± 8.0	72.1 ± 7.0
Male	81%	82%	79%	82%
eGFR (ml/min)	71.4 ± 23.2	72.8 ± 23.3	71.1 ± 25.0	69.3 ± 20.4
ASA (3 & 4)	87%	84%	85%	92%
MI (Hx)	24%	26%	27%	18%
COPD (Hx)	29%	26%	30%	32%
AAA Diameter	61.7 ± 12.4	60.1 ± 14.8	61.4 ± 10.1	64.6 ± 10.8

Procedural Characteristics

■ Single ■ Double ■ Triple-Quadruple



78% balloon expandable stents / 22% self expanding stents

Stroke (30d)

De Novo	Single	Double	Triple- Quadruple
2.6% (4/154)	1.6% (1/64)	1.9% (1/54)	5.3% (2/38)

Severe Renal Complications (30d)

De Novo	Single	Double	Triple- Quadruple
1.3% (2/154)	1.6% (1/62)	1.9% (1/54)	0% (0/38)

All Endoleak

	Total	Type Ia	Type Ib	Type II	Type III
Early (154)	1.9% (3)	0.6% (1)	1.3% (2)	0%	0%
Late (136)	2.9% (4)	2.9% (4)	0%	0%	0%

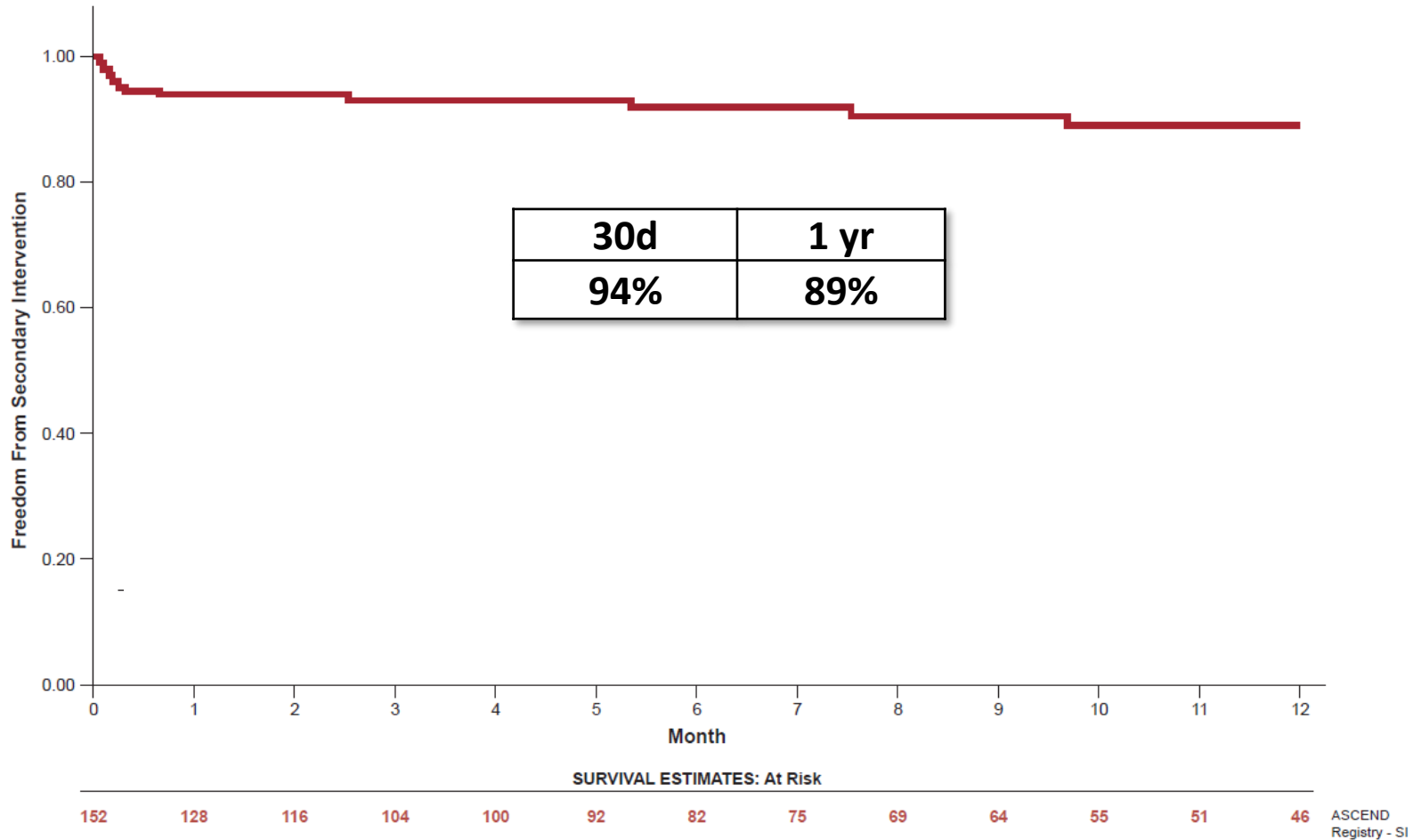
Type 1a Endoleak

	Total	Single	Double	Triple- Quadruple
Early (154)	0.6% (1/154)	0% (0/62)	1.9% (1/54)	0% (0/38)
Late (136)	2.9% (4/136)	5.2% (3/58)	0% (0/51)	2.9% (1/34)

Secondary Intervention

	Endoleak	Chimney Stent	Nellix
Early (n=154)	1.9% (3)	2.6% (4)	1.9% (3)
Late (n=142)	2.8% (4)	3.5% (5)	0.7% (1)

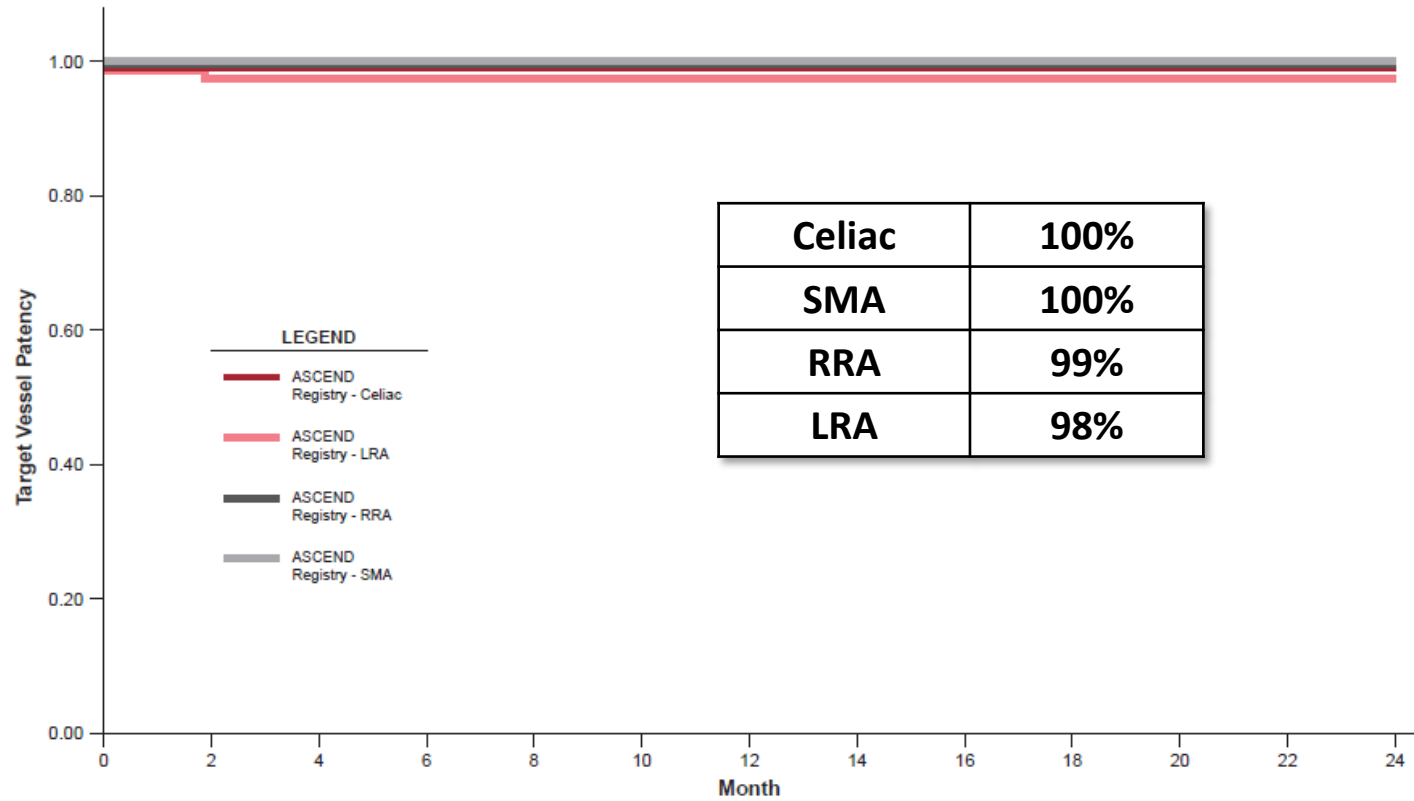
Freedom from Secondary Intervention



Total Endoleak (Persistent)

	Total	Type Ia	Type Ib	Type II	Type III
Early (154)	0%	0%	0%	0%	0%
Late (136)	0%	0%	0%	0%	0%

Target Vessel Patency



Celiac	100%
SMA	100%
RRA	99%
LRA	98%

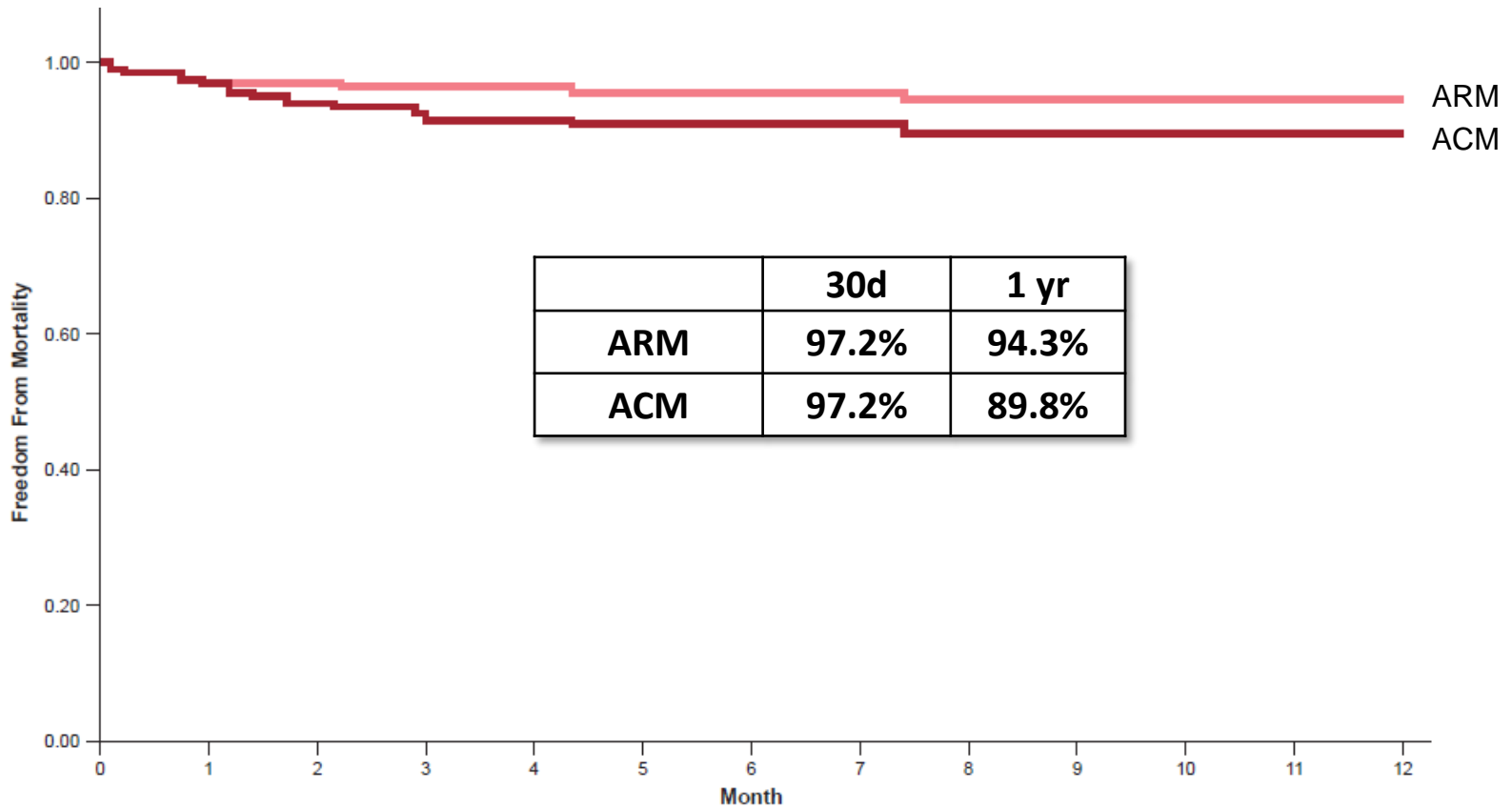
LEGEND

- ASCEND Registry - Celiac
- ASCEND Registry - LRA
- ASCEND Registry - RRA
- ASCEND Registry - SMA

SURVIVAL ESTIMATES: At Risk

154	95	65	51	33	24	23	18	16	14	8	5	3	ASCEND Registry - Celiac
154	94	64	50	33	24	23	18	16	14	8	5	3	ASCEND Registry - LRA
154	95	65	51	33	24	23	18	16	14	8	5	3	ASCEND Registry - RRA
154	95	65	51	33	24	23	18	16	14	8	5	3	ASCEND Registry - SMA

Freedom from Mortality



SURVIVAL ESTIMATES: At Risk

152	135	123	111	106	98	88	80	75	70	61	56	51	ASCEND Registry - ACM
152	135	123	111	106	98	88	80	75	70	61	56	51	ASCEND Registry - ARM

ChEVAS and ChEVAR

	ASCEND (n=154)	PERICLES (n=517)
SINGLE	11%	70% (Juxtarenal)
DOUBLE	58%	
TRIPLE/QUADRUPLE	31%	30% (Suprarenal)
PERSISTENT TYPE I ENDOLEAK	0%	2.9%
TARGET VESSEL PATENCY	98% - 100%	92%
FREEDOM FROM ACM	90%	85%



EVAS in Complex Aortic Disease

- Promising use of new technology – therapeutic gap
- Theoretical advantages in using polymer based sealing
 - Early results acceptable
 - All cause mortality low
- Long term results and endograft durability

Centre	Investigator	Enrolled
St George's Hospital	Matt Thompson (ASCEND PI)	50
Auckland City Hospital	Andrew Holden (ASCEND PI)	16
University Hospital Mainz	Marwan Youssef	35
Augsburg Hospital	Rudolf Jakob, Sebastian Zerwes	30
Arnhem Hospital	Michel Reijnen	19
Vascular Clinic IHT - Warszawa	Piotr Szopinski	15
Marien Hospital Kevelaer	Patrick Berg	12
University Hospital Poznan	Gregorz Oszkinis	10