Isolated Soleal and Gastrocnemius Vein Thrombosis

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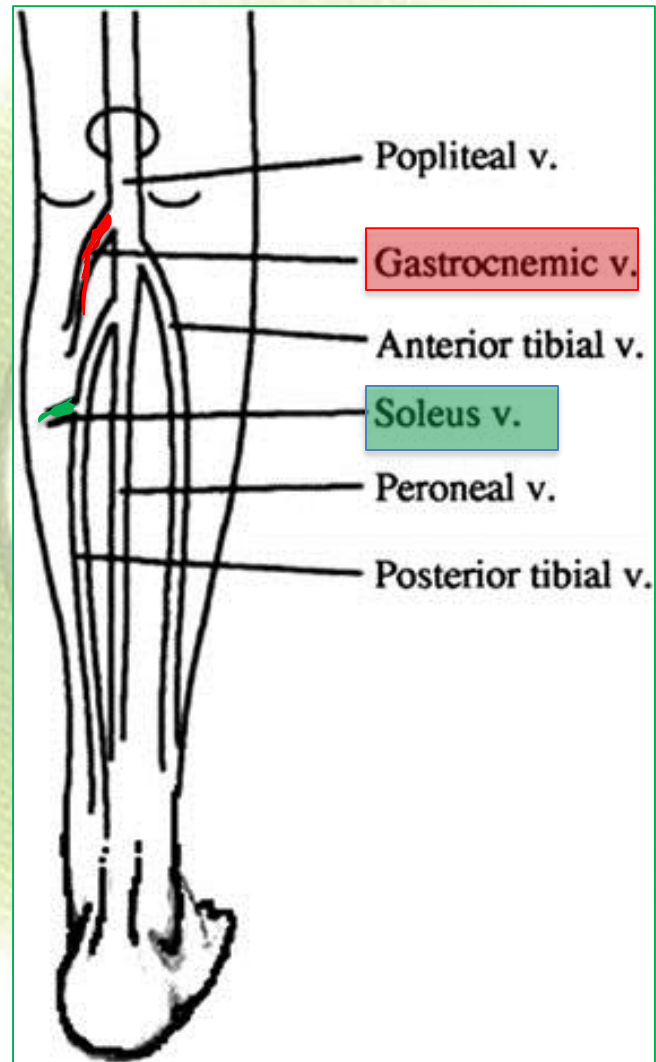**Overlook Medical Center**

DISCLOSURES

No financial relationships to disclose

Will not be discussing nonapproved uses/techniques of devices or medications
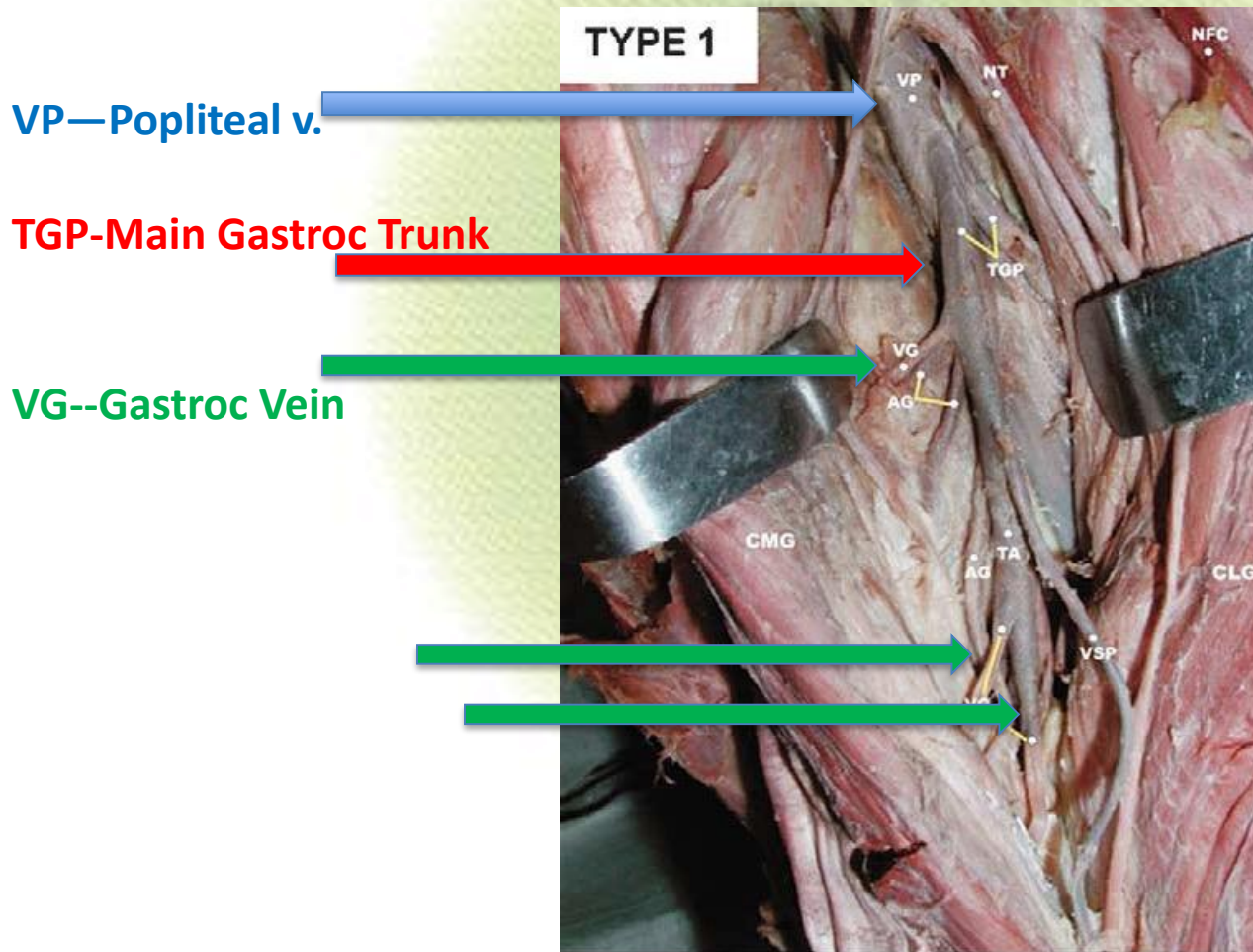
Isolated Soleal and Gastrocnemius Vein Thrombosis

- **Why the confusion?**

- **Little Consensus**

- **Recent studies**

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VP—Popliteal v.

TGP-Main Gastroc Trunk

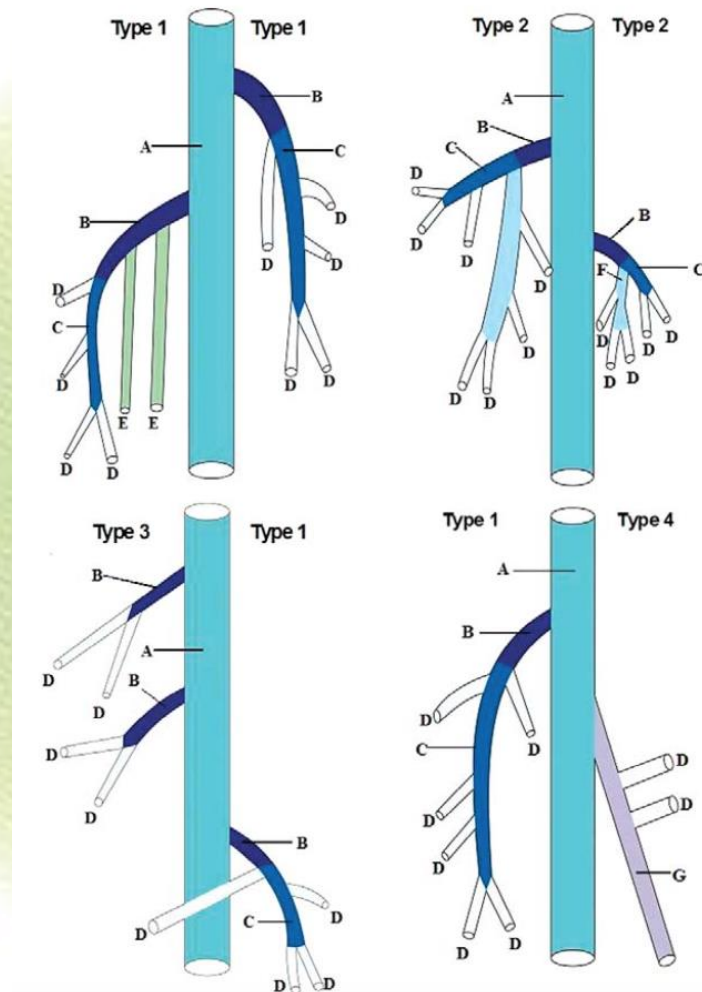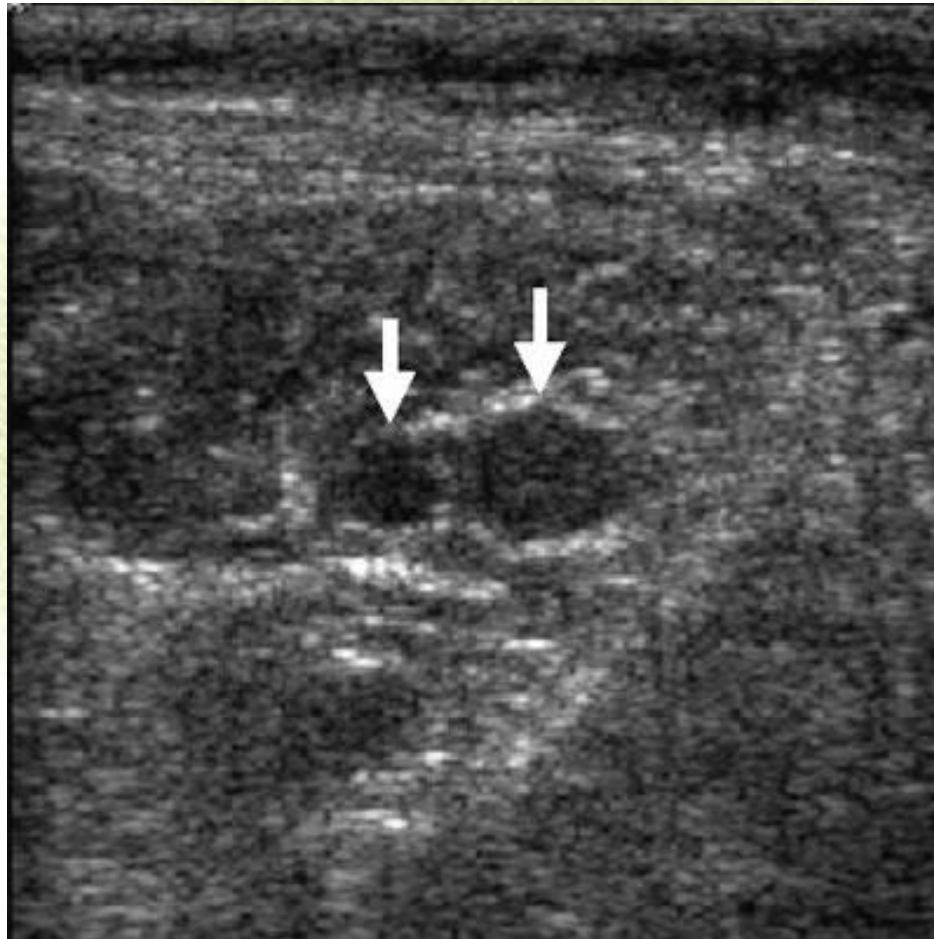**VG--Gastroc Vein**

Aragão et al Eur J Endovasc Surg 2006

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How Do You Report It?

❑ Deep Vein Thrombosis

❑ Soleal (or Gastrocnemius) Vein Thrombosis

❑ Minor Deep Vein Thrombosis

❑ Intramuscular Vein Thrombosis

Isolated Soleal and Gastrocnemius Vein Thrombosis
How SHOULD You Report It?

ANATOMIC

Below the fascia

↓

DEEP VEIN

PHYSIOLOGIC

Extension or Embolization

?

Why The Confusion?

Trivial Rate of Propagation

- ✓ MacDonald 2003
- ✓ Solis 1992
- ✓ Meibers 1988
- ✓ Sales 2010
- ✓ Schwarz 2010
- ✓ Sales 2015

Beneficial Effect of A/C

- ✓ Deitz 2003
- ✓ 1991, 1995
- ✓ Lautz 2009
- ✓ Meissner 1997
- ✓ Schwarz 2001
- ✓ Gillet 2007

MIXING ISGVT w CALF VEIN DVT

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Antithrombotic Therapy for Venous Thromboembolic Disease* American College of Chest Physicians Evidence-Based Clinical Practice Guidelines (9th Edition) 2012

Failed to address the management of soleal and gastrocnemius thrombosis.
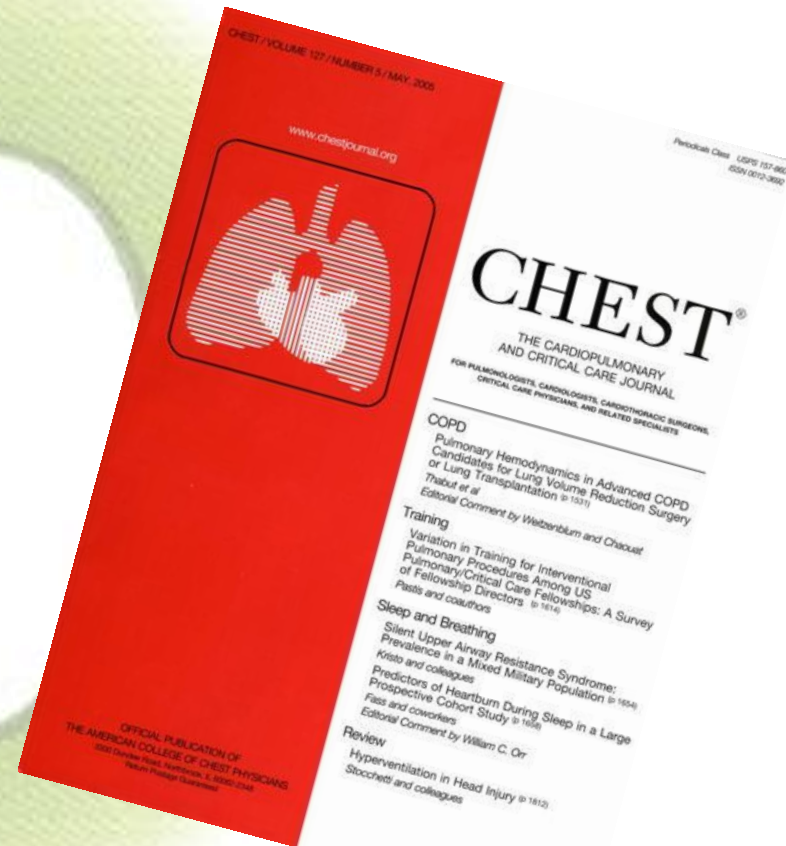
METHODOLOGY

*Reviewed venous duplex scans from **2005 – 2009**; **2013***

All venous duplex scans (ICAVL lab)
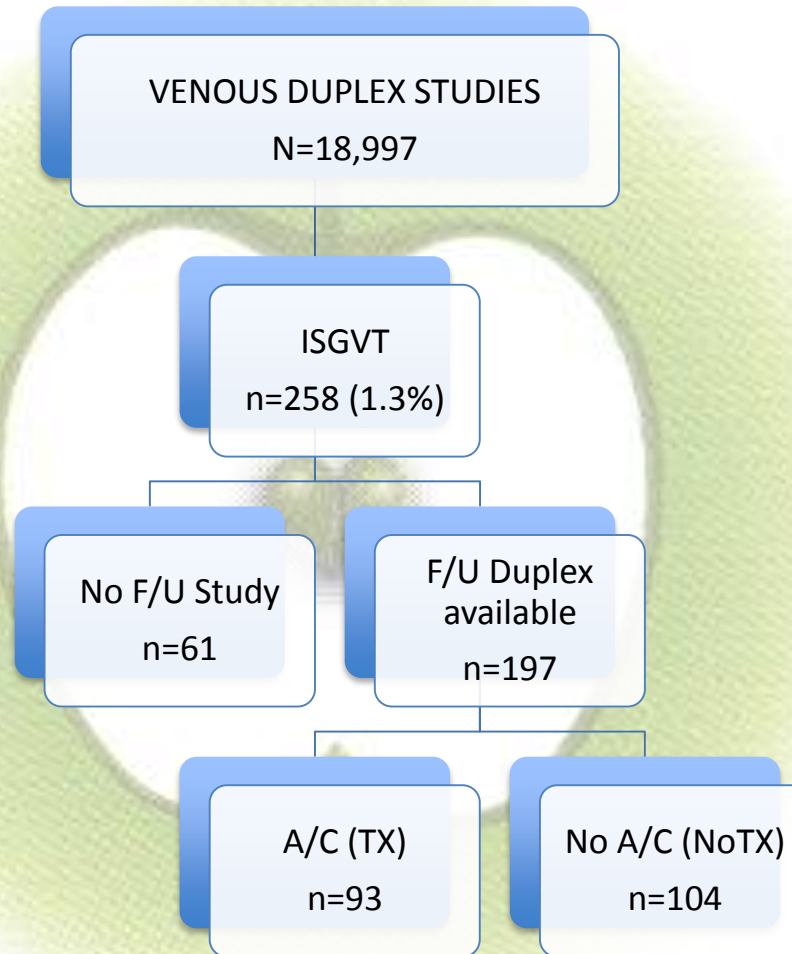
Patients with ISGVT

Only patients with follow-up scans

Medical Record review

Duplex scans reviewed: Regression, No change or Progression of clot

All scans re-reviewed

RESULTS

VENOUS DUPLEX STUDIES

N=18,997

ISGVT

n=258 (1.3%)

No F/U Study

n=61

F/U Duplex available

n=197

A/C (TX)

n=93

No A/C (NoTX)

n=104

RESULTS

2005 – 2009

VENOUS DUPLEX STUDIES
n=13,759

ISGVT
n=158 (1.1%)

No F/U Study
n=17

F/U Duplex available
n=141

A/C (TX)
n=75

No A/C (NoTX)
n=66

2013

VENOUS DUPLEX STUDIES
n=5,238

ISGVT
n=100(1.9%)

No F/U Study
n=44

F/U Duplex available
n=56

A/C (TX)
n=18

No A/C (NoTX)
n=38
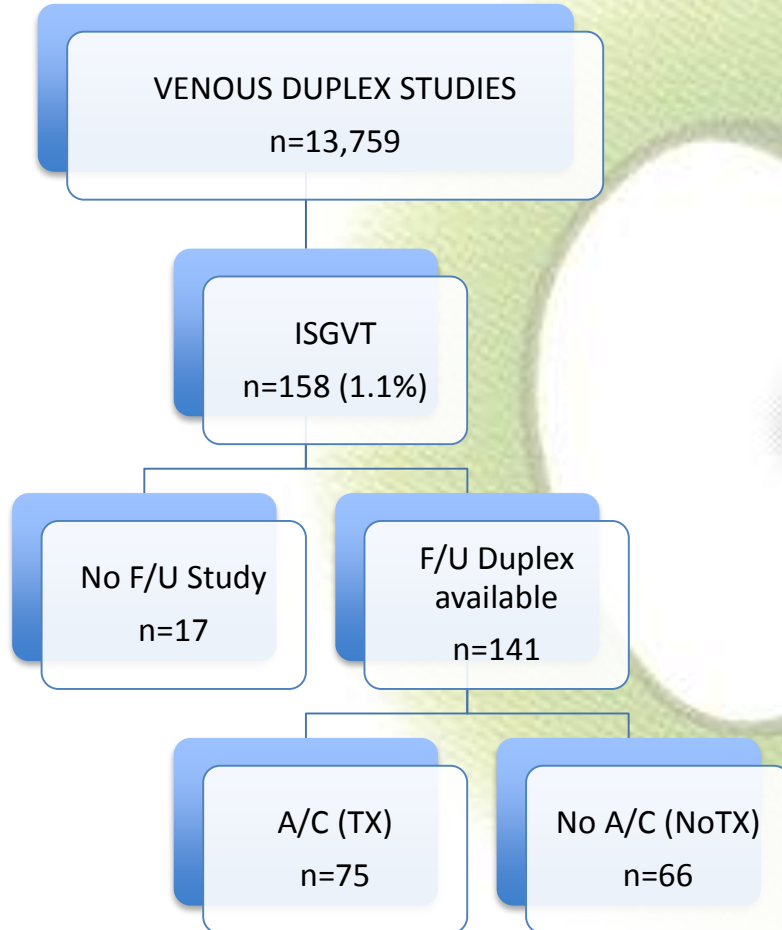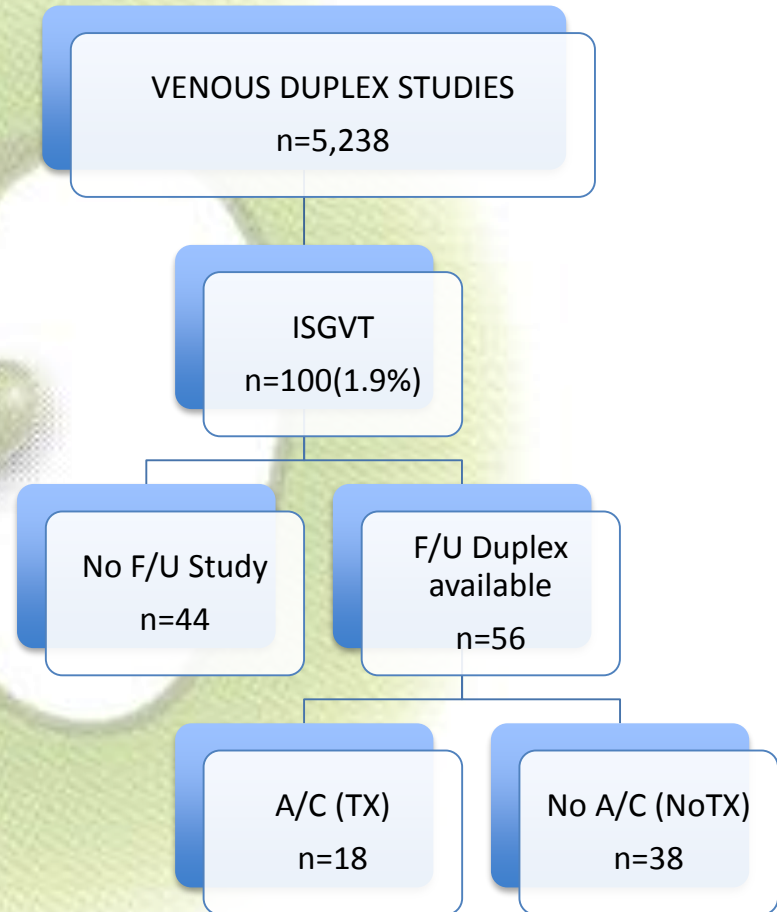
RESULTS

	TX	NoTX	
AGE (mean ± SD)	71.5 ±17.6 yrs	72.2 ± 14.6 yrs	
Congestive Heart Failure	15 (20%)	12 (19%)	
Atrial Fibrillation	19 (25%)	13 (20%)	
ESRD Stage V	6 (8%)	3 (5%)	
Recent Strike	9 (12%)	9 (14%)	
COPD	14 (18%)	11 (17%)	
Prior DVT	6 (8%)	6 (9%)	p=NS
History of Cancer	28 (37%)	23 (35%)	
Recent Surgery	36 (47%)	35 (54%)	
Ambulatory	24 (44%)	26 (51%)	
ICU Admission	28 (37%)	24 (37%)	
Vascular Consult Obtained	19 (25%)	19 (29%)	
Length of Stay (days)	17.3 ±16.8	14.3 ± 20.7	

RESULTS

	PROGRESSION	NO PROGRESSION or REGRESSION
TX Group	**25 (27%)**	**67 (73%)**
NoTX Group		

RESULTS

	PROGRESSION	NO PROGRESSION or REGRESSION
TX Group	25 (27%)	67 (73%)
NoTX Group	24 (23%)	79 (77%)

p= .62 NS

RESULTS

Multivariate Logistical Regression Model for Progression of Thrombosis

Factor	Mean or %	OR	95% CI	p-value
Anticoagulation	53.9%	1.28	(0.55,3.01)	0.57
Age (per 10 years)	71.8	0.79	(0.60,1.05)	0.11
Hypertension	59.3%	1.73	(0.81,3.72)	0.16
ESRD (CKD V)	6.4%	9.35	(1.55,56.54)	0.015
Recent CVA	12.9%	3.96	(1.17,13.38)	0.027
Liver Dysfunction (enzymes)	6.4%	0.12	(0.01,1.65)	0.11

RESULTS

- **Retrospective analysis**

- **Anticoagulation protocol (LMWH vs. Unfx'd Heparin vs. Warfarin)**

- **Follow-up studies not uniform**

- **No measurement of valvular function**

VALUE OF A/C IN TREATMENT OF ISGVT

NO REDUCTION IN

PROGRESSION OF

THROMBUS

CONCLUSIONS

- **ISGVT is different!**

- **Technology improvements**

- **Anatomically different**
  - ✓ Smaller diameter and length than deep veins
  - ✓ Soleal connect with tibial veins first then popliteal

- **Clinically different**

CURRENT TREATMENT ALGORITHM

- **Watchful waiting**

- **Sequential Compression Device on uninvolved limb**

- **Repeat duplex in 2-3 days (*even w/ A/C*)**

- **Early ambulation, if possible**

PRACTICAL IMPLICATIONS

SHOULD ISGVT BE CONSIDERED A DVT?

NSQIP

MACRA

U H C

C M S

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