

# PREVENTION AND TREATMENT OF VENOUS THROMBOEMBOLISM

## International Consensus Statement 2013 Guidelines According to Scientific Evidence

*Developed under the auspices of the:*

Cardiovascular Disease Educational and Research Trust (UK)

European Venous Forum

North American Thrombosis Forum

International Union of Angiology and

Union Internationale du Phlebologie

# Urologic Surgery

## Chapter 4

# The Risk of VTE

- **In the 1970's, the incidence of DVT in the absence of prophylaxis was:<sup>1-11</sup>**
  - ▶ 33% in open urologic surgery patients
  - ▶ 9% in transurethral resection patients
- **Current incidence of symptomatic VTE:<sup>12-16</sup>**
  - ▶ Range of 0.2-5%
  - ▶ PE is most common cause of postoperative death

1. Becker J, et al. Acta Radiol Diagn 1970; 10:513-33.
2. Mayo ME, et al. Br J Urol 1971; 43:738-42.
3. Nicolaidis AN, et al. Br J Surg 1972; 59:487-8.
4. Hedlund PO, et al. Scand J Urol Nephrol 1975; 1-100.
5. Rosenberg IL, et al. Br Med J 1975; 1:649-51.
6. Sebesari O, et al. Eur Urol 1975; 1:229-30.
7. Kutnowski M, et al. Urol Res 1977; 5:123-5.
8. Coe NP, et al. Surgery 1978; 83:230-4.

9. Bergqvist D, et al. World J Surg 1980; 4:239-43.
10. Vandendris M, et al. Urol Res 1980; 8:219-21.
11. Hedlund PO, et al. Urol Res 1981; 9:147-52.
12. White RH, et al. Thromb Haemost 2003; 90:446-55.
13. Rossignol G, et al. Eur Urol 1991; 19:186-91.
14. Heinzer H, et al. Eur Urol 1998; 33:86-90.
15. Koya MP, et al. BJU Int 2005; 96:1019-21.
16. Pettus JA, et al. Urology 2006; 68:988-92.

# Incidence of DVT \* in the Absence of Prophylaxis Open Urological Operations

\*Diagnosed by surveillance with objective methods: phlebography, FUT or DUS

Study	Patients (n)	DVT Incidence	95% CI
Becker et al, 1970 <sup>1</sup>	187	39	
Mayo et al, 1971 <sup>2</sup>	41	21	
Nicolaides et al, 1972 <sup>3</sup>	25	7	
Hedlund et al, 1975 <sup>4</sup>	40	18	
Rosenberg et al, 1975 <sup>5</sup>	32	11	
Sebeseri et al, 1975 <sup>6</sup>	31	18	
Kutnowski et al, 1977 <sup>7</sup>	25	12	
Coe et al, 1978 <sup>8</sup>	8	1	
Bergqvist & Hollböock, 1980 <sup>9</sup>	19	6	
Vandendris et al, 1980 <sup>10</sup>	33	13	
Hedlund & Blomback, 1981 <sup>11</sup>	28	13	
<b>Total</b>	<b>469</b>	<b>159 (33%)</b>	<b>29% to 38%</b>

1. Becker J, et al. Acta Radiol Diagn 1970; 10:513-33.

2. Mayo ME, et al. Br J Urol 1971; 43:738-42.

3. Nicolaides AN, et al. Br J Surg 1972; 59:487-8.

4. Hedlund PO, et al. Scand J Urol Nephrol 1975; 1-100.

5. Rosenberg IL, et al. Br Med J 1975; 1:649-51.

6. Sebesari O, et al. Eur Urol 1975; 1:229-30.

7. Kutnowski M, et al. Urol Res 1977; 5:123-5.

8. Coe NP, et al. Surgery 1978; 83:230-4.

9. Bergqvist D, et al. World J Surg 1980; 4:239-43.

10. Vandendris M, et al. Urol Res 1980; 8:219-21.

11. Hedlund PO, et al. Urol Res 1981; 9:147-52.

# Incidence of DVT \* in the Absence of Prophylaxis Transurethral Prostatectomy

Study	Patients (n)	DVT Incidence	95% CI
Mayo et al, 1971 <sup>1</sup>	20	2	
Nicolaides et al, 1972 <sup>2</sup>	29	2	
Hedlund et al, 1975 <sup>3</sup>	101	10	
<b>Total</b>	<b>150</b>	<b>14 (9%)</b>	<b>5% to 15%</b>

\* Diagnosed by surveillance with objective methods: phlebography or FUT

1. Mayo ME, et al. Br J Urol 1971; 43:738-42.
2. Nicolaides AN, et al. Br J Surg 1972; 59:487-8.
3. Hedlund PO, et al. Scand J Urol Nephrol 1975; 1-100.

# Incidence of Symptomatic Venous Thromboembolism (VTE)

- **California Patient Discharge Data Set<sup>1</sup>**

- ▶ Review of 1,653,275 surgical cases (1/1/1992 to 9/30/1996)

<b>Surgical Procedure</b>	<b>VTE Incidence</b>
Cystectomy	3.7%
Nephrectomy for malignancy	2.0%
Nephrectomy	0.4%
Radical prostatectomy	1.5%

# DVT Prevention

## IPC vs. No Prophylaxis in Open Urologic Procedures

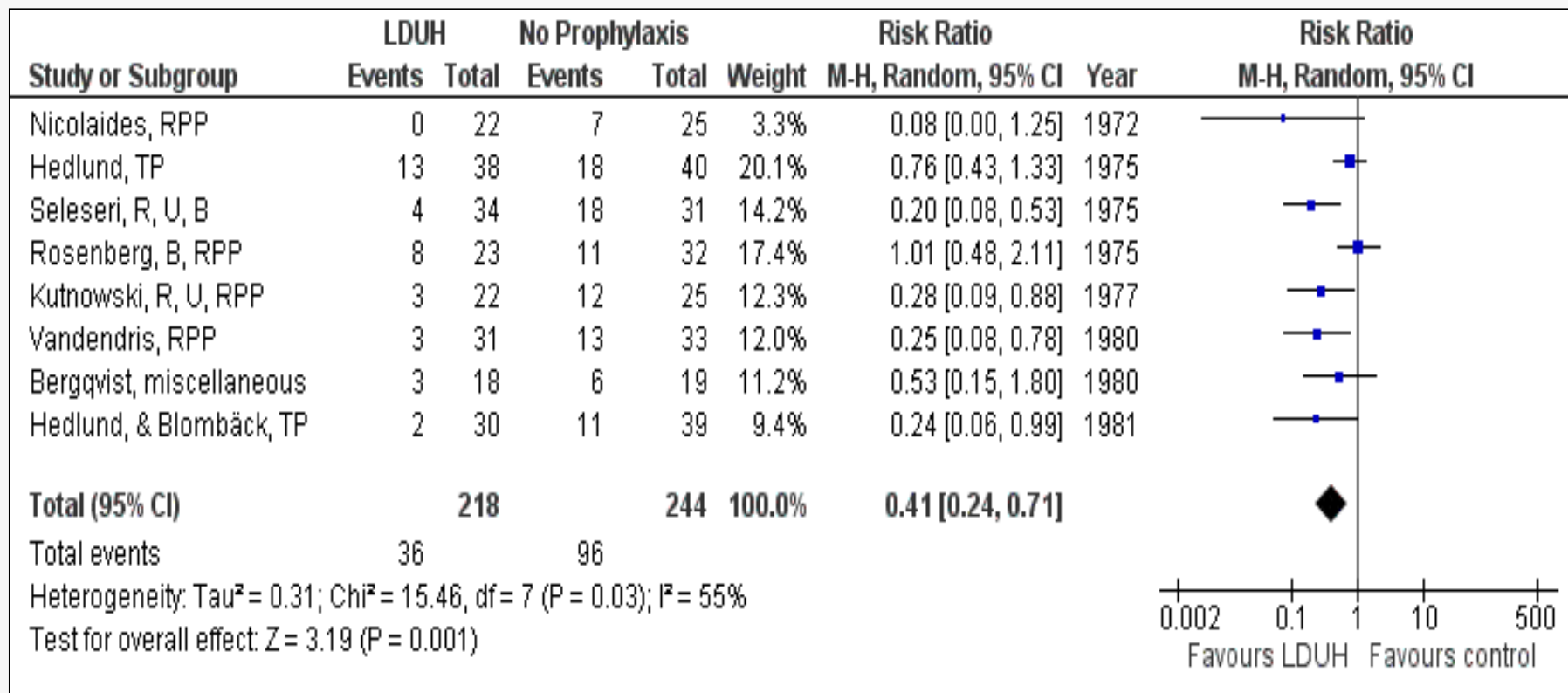
- **Two randomized studies compared IPC with no prophylaxis**
- **153 patients undergoing open urological procedures**
- **DVT was reduced from 14.9% to 6.3%**
  - ▶ RR: 0.43; 95% CI: 0.15-1.17; P=0.085

1. Coe NP, et al. Surgery 1978; 83:230-4.

2. Salzman EW, et al. Surgery 1980;87:239-42.

# DVT Prevention

## LDUH vs. No Prophylaxis in Urologic Surgery Patients



1. Nicolaides AN, et al. Br J Surg 1972; 59:487-8.
2. Hedlund PO, et al. Scand J Urol Nephrol 1975; 1:100.
3. Sebesari O, et al. Eur Urol 1975; 1:229-30.
4. Rosenberg IL, et al. Br Med J 1975; 1:649-51.

5. Kutnowski M, et al. Urol Res 1977; 5:123-5.
6. Vandendris M, et al. Urol Res 1980; 8:219-21.
7. Bergqvist D, et al. World J Surg 1980; 4:239-43.
8. Hedlund PO, et al. Urol Res 1981; 9:147-52.



# VTE Prophylaxis Recommendations

## Urologic Surgery

- **LDUH is recommended**
  - ▶ Level of evidence: High
- **LMWH extrapolated from trials in patients having surgery**
  - ▶ Level of evidence: Low
- **IPC with GEC is recommended in patients with increased risk of bleeding, also by extrapolation from trials in patients having general surgery**
  - ▶ Level of evidence: Low