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IM-ORIGINAL



Proximal and isolated distal deep vein thrombosis and Wells score accuracy in hospitalized patients

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Background

- Lower-extremity DVT incidence in hospitalized patients varies according to different reports.
- Since untreated DVT may lead to fatal PE, DVT diagnosis should be therefore timely and accurate.
- Wells and colleagues developed a diagnostic rule to estimate DVT pretest clinical probability (PTP)
- Recently, it has been reported that such PTP score is associated with a high failure rate and a low efficiency in the inpatient setting

Aim of the study

- The purpose of this study was to evaluate the prevalence of lower limb DVT in inpatients and to evaluate the accuracy of the Wells rule for suspected lower limb DVT in hospitalized patients.

Methods

- This was an observational cross-sectional study performed in a tertiary care academic hospital (University Hospital S. Orsola-Malpighi, Bologna, Italy) from October 2016 to March 2017.
- Hospitalized patients with clinical suspicion of DVT were included
- PTP was assessed for all patients using Wells risk score
- Diagnosis of proximal and isolated distal DVT was based on whole-leg ultrasound.

The Wells score

One point was added for each of the following positive finding:

- (a) active cancer treatment ongoing or within previous 6 months or palliative;
- (b) paralysis, paresis, or recent plaster immobilization of the lower legs;
- (c) recent immobilization for more than 3 days or major surgery within last 4 weeks;
- (d) localized tenderness/pain along the distribution of the deep venous system;
- (e) entire leg swollen;
- (f) calf swelling by more than 3 cm when compared with the asymptomatic leg;
- (g) pitting edema greater in the symptomatic leg;
- (h) collateral superficial veins;
- (i) previously documented DVT.
- (j) Two points were subtracted from the total points if an alternative diagnosis as likely as or more likely than DVT was found.

Based on such checklist, PTP for DVT could be estimated to be low (score=0 or less), moderate (score=1 or 2), or high (score=3 or more).

Results (I)

Table 2 Characteristics of inpatients with suspected deep vein thrombosis (DVT) by hospital ward

	Non-surgical wards <i>n</i> = 507	Surgical wards <i>n</i> = 127	<i>p</i> -value
Age, mean (SD), year	77.9 (13.3)	75.6 (15.7)	0.087
Male/female (%)	207/300 (59.2)	42/85 (66.9)	0.109
Hospitalization days at the time of LEUS, mean (SD), day	5.1 (6.2)	7.2 (6.1)	0.001
Pharmacologic thromboprophylaxis use ^a	283 (55.6)	89 (70.1)	0.003
Active cancer	113 (22.3)	16 (12.6)	0.015
Previous DVT	70 (13.8)	14 (11.0)	0.408
Wells score, mean (SD)	0.9 (1.4)	0.7 (1.4)	0.077
Wells score risk category			
Low	180 (35.5)	64 (50.4)	0.002
Moderate	284 (56.0)	53 (41.7)	0.004
High	43 (8.5)	10 (7.9)	0.825
Proximal DVT	47 (9.3)	4 (3.1)	0.023
IDDVT	65 (12.8)	12 (9.4)	0.298

Data are presented as number (percentage) of patients unless otherwise indicated

DVT deep vein thrombosis, *IDDVT* isolated distal DVT

^aUse of subcutaneous heparin calcium, 5000 U, 2 or 3 times daily, or subcutaneous enoxaparin sodium, 40 mg/day, or subcutaneous fondaparinux, 1.5/2.5 mg/day

Results (II)

Table 3 Prevalence of deep vein thrombosis (DVT) by pretest clinical probability risk classification

Pretest clinical probability	<i>n</i> (%)	Proximal DVT <i>n</i> (%)	IDDVT <i>n</i> (%)	All DVTs <i>n</i> (%)
> 3	19 (3.0)	5 (26.3)	5 (26.3)	10 (52.6)
3	34 (5.4)	7 (20.6)	5 (14.7)	12 (35.3)
2	156 (24.6)	26 (16.7)	22 (14.1)	48 (30.8)
1	181 (28.5)	8 (4.4)	26 (14.4)	34 (18.8)
0 or less	244 (38.5)	5 (2.0)	19 (7.8)	24 (9.8)
Total	634 (100)	51 (8.0)	77 (12.1)	128 (20.2)

IDDVT isolated distal deep vein thrombosis

Conclusions

- The results show that, in hospitalized patients, isolated distal DVT is more prevalent than proximal DVT.
- The accuracy of the Wells score for proximal DVT is similar to that found in the outpatient validation studies. Otherwise, the Wells score has a low diagnostic accuracy for isolated distal DVT also in inpatients.
- Also in inpatients setting, the Wells score risk stratification may influence management decisions as starting anticoagulation while awaiting ultrasound results.