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Discloser

- **Speaker & Chairman Honoraria**: Sanofi, Pfizer, Wayeth, Bayer, MSD, GSK, Astra-Zenica, B-Myers

- **Conferences & Symposia Sponsorship**: Sanofi, Pfizer, Wayeth, Bayer, MSD, GSK, Astra-Zenica,

- **Consultant Advisor**: Sanofi, Pfizer, Wayeth, Bayer

- **Research Grant**: Sanofi
Estimating VTE/DVT incidence, morbidity, and mortality

Data are hard to obtain because:

• VTE is often silent in nature
• VTE is difficult to diagnose
• There is a lack of routinely performed risk assessments
• There is a lack of routinely performed post-mortems

Many fatal PEs remain unrecognized
VTE: Magnitude of the Problem in USA

- Asymptomatic DVT: 2 million
- Symptomatic DVT: 800,000
- Post-thrombotic syndrome: 600,000
- PE: 200,000
- Death

VTE=venous thromboembolism; PE=pulmonary embolism; DVT=deep vein thrombosis.
VTE: Magnitude of the Problem in Europe

VTE: Magnitude of the Problem in Saudi Arabia 3 years ago
VTE: Magnitude of the Problem in Saudi Arabia

1-Aboelnazar E, Alhameed F, Galal S; VTE related mortality and morbidity, Abstract. Thrombosis, Milan, July 6-9, 2010

BACKGROUND

• Venous thromboembolism (VTE) is a serious and underestimated potentially fatal disease with an effective prophylactic antithrombotic therapy that is usually underutilized.
Introduction

• Venous thrombo-embolism (VTE) has been implicated in hospital deaths.

• It was reported that 10% of hospital deaths are due to pulmonary embolism (PE) and 1% of all hospital admissions dies from it.¹

• Usage of thromboprophylaxis has been assessed and appropriate corrective measures to improve prophylaxis of VTE has been identified²,³

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Introduction

Objectives

**Primary objective:**

- Percentage of prophylactic treatment according to the ACCP guidelines in patients diagnosed with VTE (DVT or PE)

**Secondary objectives**

- Percentage of VTE in each type of wards (surgery, medical, oncology …..)
- To identify the percentage of hospital death due to VTE across one years

*Annals of Thoracic Medicine - Vol 6, Issue 4, October-December 2011*
METHODS

• During the period from first of July 2008 till 30 of June 2009, we collected all hospital deaths, all patients with confirmed VTE diagnosis at King Fahd General Hospital (900 beds), Jeddah, KSA.

• Only patients with confirmed VTE diagnosis were included in the analysis.
Inclusion criteria

- All patients (15 years and above) diagnosed with confirmed in-hospital VTE during hospitalization in from July 2008 to June 2009.

Exclusion criteria

- Missing Hospital chart
Study design

A retrospective registry

Number of patients

Only patients with confirmed VTE diagnosis were included in the study analysis.
Results

- Total hospital mortality during the study period was 1968 patients.
- 500 cases whether dead or alive were identified with clinical diagnosis of VTE.
- One hundred and seventy-eight (178) cases had confirmed VTE were included in the analysis.
Demography
Demography

Gender

Pts%

34% Male
66% Female

All patients

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Primary objective
Results

• 178 (out of 500) cases were confirmed with VTE

• Only 36.5% of them received prophylactic antithrombotic therapy.
Prophylactic anti-coagulation therapy

All patients

Base = 178
Secondary objective
Results

• 178 (out of 500) cases were confirmed with VTE

• Case fatality rate was 20.8% representing 1.9% of hospital deaths.
Death rate due to VTE during hospitalization

- Lived: 79%
- Died: 21%

Base = 146
VTE is often undetected until too late (all pts)

At autopsy, 63% of DVT cases were clinically undiagnosed\(^2\)

At least 70% of fatal PE detected postmortem was neither suspected nor diagnosed\(^1,2\)

Approximately 75% of fatal PEs diagnosed at autopsy are in medical patients.

<table>
<thead>
<tr>
<th>Study</th>
<th>Location</th>
<th>Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sandler and Martin, 1989</td>
<td>USA</td>
<td>76%</td>
</tr>
<tr>
<td>Baglin et al, 1997</td>
<td>USA</td>
<td>59%</td>
</tr>
<tr>
<td>Cohen et al, 1996</td>
<td>UK</td>
<td>81%</td>
</tr>
</tbody>
</table>

Results

- Case fatality rate was 31% and 3.1% for patients who did not receive thrombo-prophylaxis and patients who received it, respectively ($P < 0.0001$).
Mortality according to receiving prophylaxis

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Results

• Only 44.1% of surgical patients and
• 21.7% of medical patients received prophylaxis ($P < 0.01$).
Results

• 66.3% and 33.7% of confirmed VTE cases occurred in surgical and medical patients respectively.

• Case fatality rate is 11% for surgical patients and 40% for medical patients ($P < 0.001$).
Etiology of VTE

- Pts%: 66% for In association with surgery
- Pts%: 34% for While being hospitalized for other reasons

Base = 178
Results

• Of 141 survived cases, 118 (83.7%) were adherent to anticoagulation therapy after discharge.
Patients' adherence to anti-coagulation therapy after discharge

![Bar chart showing adherence rates for patients with and without prophylaxis. The chart indicates that the adherence rate for patients with prophylaxis is 86.8% compared to 85.2% for those without prophylaxis. The p-value is 0.788 (NS).](image-url)
CONCLUSIONS

• VTE prophylaxis guideline is not properly implemented and extremely underutilized.
• Mortality from VTE is significantly higher in patients who did not receive VTE prophylaxis.
• In the absence of regular postmortem practice VTE related mortality rate would be difficult to estimate and likely will be underestimated.
• Health authorities should enforce VTE prophylaxis guideline within the healthcare system.

Annals of Thoracic Medicine - Vol 6, Issue 4, October-December 2011
Venous thromboembolism-related mortality and morbidity in King Fahd General Hospital, Jeddah, Kingdom of Saudi Arabia

Abo-El-Nazar Essam¹, Galal Sharif, Fahad Al-Hameed ²

Abstract:

BACKGROUND: Venous thromboembolism (VTE) is a serious and underestimated potentially fatal disease with an effective prophylactic antithrombotic therapy that is usually underused.

OBJECTIVES: The primary study objective is to determine the percentage of VTE patients who received prophylactic antithrombotic therapy according to ACCP guideline. Secondary study objectives are determining prevalence of confirmed VTE mortality among all cause hospital mortalities, measure adherence to anticoagulation treatment after discharge and number of VTE events among those patients.

METHODS: During the period from first of July 2008 till 30 of June 2009, we collected all hospital deaths, all patients with confirmed VTE diagnosis at King Fahd General Hospital, Jeddah, Kingdom of Saudi Arabia. Only patients with confirmed VTE diagnosis were included in the analysis.

RESULTS: Five hundred cases with clinical diagnosis of VTE were identified. Out of them 178 were confirmed to be VTE. 36.5% of them received prophylactic antithrombotic therapy. Case fatality rate was 20.8% representing 1.9% of hospital deaths. Case fatality rate was 31% and 3.1% for patients who did not receive thromboprophylaxis and patients who received it, respectively ($P < 0.0001$). 66.3% and 33.7% of confirmed VTE cases occurred in surgical and medical patients respectively. Only 44.1% of surgical patients and 21.7% of medical patients received prophylaxis ($P < 0.01$). Case fatality rate is 11% for surgical patients and 40% for medical patients ($P < 0.001$). Of 141 survived cases, 118 (83.7%) were adherent to anticoagulation therapy after discharge.

CONCLUSIONS: VTE prophylaxis guideline is not properly implemented and extremely underutilized. Mortality from VTE is significantly higher in patients who did not receive VTE prophylaxis. In the absence of regular post-mortem practice VTE related mortality rate would be difficult to estimate and likely will be underestimated. Health authorities should enforce VTE prophylaxis guideline within the healthcare system.
Overview/Objective

✓ We recently published in ATM Oct 2011 issue the results of VTE Morbidity and Mortality registry in KFGH.

✓ The objective of this 2\textsuperscript{nd} wave VTE registry is to evaluate the impact of CME educational programs on VTE prophylaxis and incidence of VTE Morbidity and Mortality.

✓ From July 2009 to June 2010.
### Results

#### Study patients and conduct

**Base line Phase**
- Total hospital mortality during the study period was **1968** cases.
- During the study period **500** cases were identified with suspected clinical diagnosis of VTE.
- **322** cases were dead with the cause of death mentioned “circulatory and respiratory collapse” without confirmation of diagnosis and cause of death.
- The remaining **178** cases have been confirmed to have VTE (age range: 40-79 years old).

**2nd wave phase**
- Total hospital mortality during the study period was **1464** cases.
- During the study period **389** cases were identified with suspected clinical diagnosis of VTE.
- **242** cases were dead with the cause of death mentioned “circulatory and respiratory collapse” without confirmation of diagnosis and cause of death.
- The remaining **147** cases have been confirmed to have VTE (age range: 40-79 years old).
Results & discussion

✓ 147 (out of 389) cases have been confirmed to have VTE.

✓ Total use of prophylactic anti-coagulation therapy has increased from 37% at 1st wave to 64% at 2nd wave (P<0.001)

✓ Medical Prophylaxis increased from 22% to 57% (P<0.001)

✓ Surgical Prophylaxis increased from 44% to 82% (P<0.001)

✓ Confirmed VTE mortality accounts for 1.9% and 1.1% of total hospital mortality in 1st wave and 2nd wave respectively (P<0.05)

✓ VTE prophylaxis was associated with significant reduction of Mortality 2% versus 26 % of patients without prophylaxis (P<0.001)

✓ PE reduction is significant in both medical P<0.001) & surgical (P<0.05) ward after the 2nd wave.
First National Saudi Arabian VTE Registry

Dr. Fahad & Dr. Essam are working on expanding this registry to include many Hospitals in the kingdom. The following local hospitals already participated through their representative members (COORDINATING PHYSICIAN):

1. King Fahad General Hospital, Jeddah (Dr. Qadi)
2. King Faisal Specialist Hospital & RC, Riyadh (Dr. Jalal)
3. KAMC (NG), Jeddah (Dr. Fahad)
4. KAMC (NG), Riyadh (Dr. Hassan)
5. King Saud Medical City, Riyadh (Dr. Tariq)
6. King Khalid University Hospital (Dr. Farjah)
7. Military Hospital, Complex, Riyadh (Dr. Majdy)
8. King Abdel Aziz University, Hospital Jeddah (Dr. Galilah)
9. King Fahad Medical City, Riyadh (Dr. Ebtisam)
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7. Military Hospital, Complex, Riyadh (Dr. Majdy)
8. King Abdel Aziz University, Hospital Jeddah (Dr. Galilah)
9. King Fahad Medical City, Riyadh (Dr. Ebtisam)
Thanks