

Venous Thrombo-Embolicism (VTE) Prophylaxis among King Abdulaziz University Hospital (KAUH) Neurosurgical Patients, A Cross Sectional Snapshot Analysis

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Abstract: One of the most common & potentially destructive complications that can occur among neurosurgical patients is venous thromboembolism (VTE), so, prevention of (VTE) is essential for most admitted patients. There are updated recommendations that have been provided by the 9th edition of American collage of Chest Physicians (ACCP) clinical practice guidelines for prevention & treatment for the subgroup of patients in each department that confirm the evaluation of patient risk for VTE. The aim of this study is quality improvement to evaluate the commitment of King Abdulaziz University hospital (KAUH), department of Surgery, division of neurosurgery to the international recommendations of the ACCP using a cross sectional snapshot analysis. Research methodology: In the month of October 2015 the research project was developed by a research group using a cross sectional snapshot analysis. The forms of data collection were derived from the 9th ACCP guidelines and were used to evaluate the division of neurosurgery adherence to ACCP guidelines. . The data was collected by the research group .The ethic approval of the study was obtained from the chairman ethics committee. Main results: In the month of October 2015 a cross sectional snapshot analysis showed that 4 out of 5 (80%) patients who were admitted during this period were on VTE prophylaxis.

Keywords: VENOUS THROMBO-EMBOLISM (VTE), American collage of Chest Physicians (ACCP).

I. INTRODUCTION

When a clot forms in a vein and limits blood flow through this vein, this is called venous Thrombi-Embolicism (VTE). Each year about 300,000 people die due to complications from deep vein thrombosis (DVT) or pulmonary embolism (PE), which are collectively referred to by the broader term as VTE. For such a high incidence complication that may reach up to 40% (1), thrombo-prophylaxis is recommended. Prevention of VTE is essential for most admitted patients. The American College of Chest Physicians (ACCP) developed guidelines for the prevention of VTE that are updated regularly every 3 to 4 years. In all VTE prophylaxis patients with cancer are considered among high-risk group due to cancer itself, or cancer treatment. Most of the recommendations in this guideline are based on low-quality evidence limited by small samples, incomplete blinding, unclear concealment of treatment allocation, and measurement of surrogate outcomes. Randomized trials are needed to enrol representative samples (ideally in community settings) and be adequately powered to show the differences. The goal of this study is quality improvement to evaluate the commitment of King Abdul-Aziz University Hospital (KAUH), department of Surgery, Division of Neurosurgery to the international recommendations of the ACCP using a cross sectional snapshot analysis, and to compare the result of this study between the year of 2011, 2013, and 2015 to see if there is any improvement [1].

II. OBJECTIVES OF THIS STUDY

As a quality improvement project this study aims are:

1- To assess level of adherence of KAUH to ACCP with respect to VTE

Prophylaxis for neurosurgical patients.

2- To assess the number of neurosurgical patients who are on VTE Prophylaxis.

3- To compare the current results with a similar project carried out in 2011 and 2013 addressing same items and assess if there is any improvement.

III. METHODS

A group of students with their supervisor started the project at KAUH as a cross sectional snap shot analysis. A case report form (CRF) has been developed from the 9th edition of ACCP guidelines as a check list. Data were collected and analyzed.

The following is the CRF utilized in the study:

1- Is there a formal active KAUH Strategy for VTE Prophylaxis?

Yes NO

2- Is there a written institution policy at KAUH addressing VTE Prophylaxis?

Yes NO

3- Are there strategies to increase thrombo-prophylaxis adherence at KAUH?

a. Computer Decision Support System

Yes NO

b. Preprinted Orders

Yes NO

c. Periodic Audit & Feedback

Yes NO

4- Is there a KAUH Divisions of Gyne-Oncology, Medical Oncology, & Surgical Oncology formal active Strategy for VTE Prophylaxis?

Yes NO

5- Are there strategies to increase thrombo-prophylaxis adherence in the Department of Surgery at KAUH?

a. Computer Decision Support System

Yes NO

b. Preprinted Orders

Yes NO

c. Periodic Audit & Feedback

Yes NO

6- Are there passive methods such as distribution of educational materials or educational meetings of VTE Prophylaxis as sole strategies to increase adherence to guidelines?

Yes NO

7- Is there any surgical patient who is on Aspirin alone as VTE Prophylaxis?

Yes NO

8- Is Inferior Vena Cava (IVC) Filter is used as VTE prophylaxis in patients with cancer?

Yes NO

9- Is there any approved mechanical method of VTE Prophylaxis among patients with cancer, 1st Intermittent Pneumonic Compression (IPC)?

Yes NO

10-Is it used correctly by physicians?

Yes NO

11-Is it used correctly by nurses?

Yes NO

12-Is it used per-operatively (Pre-OP, Intra-OP, Post-OP)?

Pre OP: Yes NO, Intra-OP: Yes NO, Post-OP: Yes NO

13-Is it used alone (i.e. in high risk of bleeding patients)?

Yes NO

14-Is it used in combination with chemical prophylaxis (i.e. in high risk of thrombosis patients)?

Yes NO

15-Is there any approved mechanical method of VTE Prophylaxis among patients with cancer, 2nd Gradual Compression Stocking (GCS)?

Yes NO

16-Is it used correctly by physicians?

Yes NO

17-Is it used correctly by nurses?

Yes NO

18-Is it used per-operatively (Pre-OP, Intra-OP, Post-OP)?

OP: Yes NO, Intra-OP: Yes NO, Post-OP: Yes NO

19-Is it used alone (i.e. in high risk of bleeding patients)?

Yes NO

20-Is it used in combination with chemical prophylaxis (i.e. in high risk of thrombosis patients)?

Yes NO

21-Is Doppler Ultra Sound (DUS) is used as a screening method among KAUH PATIENTS WITH CANCER patients?

Yes NO

Is there a Risk Assessment Model (RAM) used to stratify patient's thrombotic risk?

Yes NO

IV. RESULTS

In the month of October 2015, a group of Student Investigator Program (SIP) with the director and supervisor carried out a quality improvement project titled with "Protect our Patients from VTE" using a cross sectional snapshot analysis to assess the adherence of VTE prophylaxis among Neurosurgical Patients in the Division of Neurosurgery. The Level of Adherence of Neurosurgery Division in The department of Surgery 4 out of 5 patients who were admitted during this period were on VTE prophylaxis (80%).

Item/Department	Level of Adherence in 2015	Level of Adherence in 2013	Level of Adherence in 2011	Patients on VTE Prophylaxis in 2015	Patients on VTE Prophylaxis in 2013	Patients on VTE Prophylaxis in 2011
Neurosurgery	4/5 (80%)	11/22 (50%)	7/26 (27%)	4/5(80%)	Not calculated	3/4 (75%)

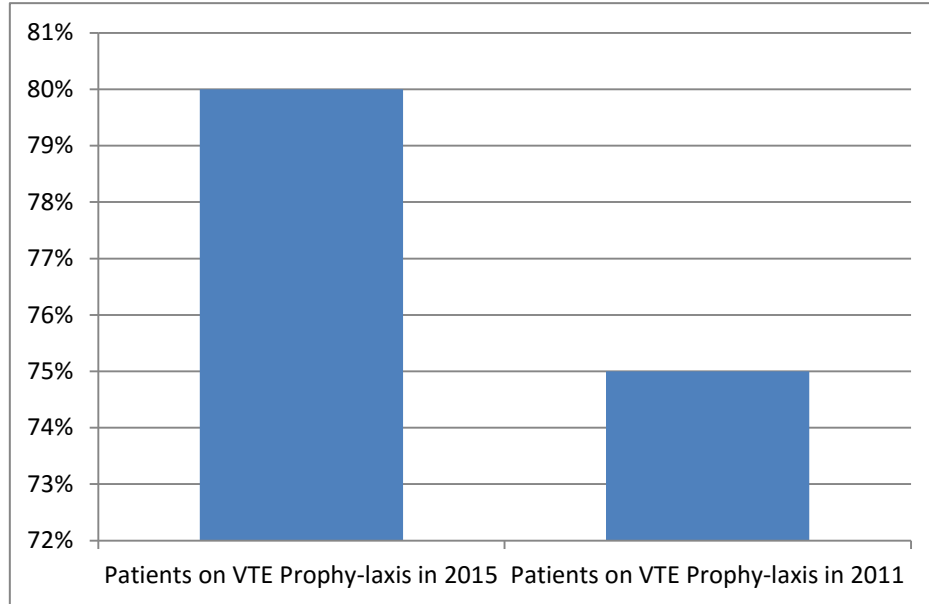


Figure (1): diagram shows level of adherence of Neurosurgery Division in the Department of Surgery at KAUH to ACCP Guidelines

V. DISCUSSION

Apparently, there is an improvement in the division of Neurosurgery at KAUH in the level of adherence to ACCP guidelines for VTE prophylaxis and in the percentile of patients with neurosurgical disorders who are on VTE prophylaxis. Our Recommendation as shown in table:

condition	High risk of bleeding	Low risk of bleeding	High risk of thrombosis	Low risk of thrombosis	Recommendation
Craniotomy	Yes				Mechanical prophylaxis
Craniotomy			Yes		Mechanical prophylaxis+ pharmacologic Prophylaxis
Spinal surgery	yes				Mechanical prophylaxis or unfractionated Heparin, or LMWH
Spinal surgery			Yes		Mechanical prophylaxis+ pharmacologic Prophylaxis
Major trauma					Pharmacologic Prophylaxis
Major trauma	Yes				Mechanical prophylaxis

Major trauma	Yes	Pharmacologic Prophylaxis+ mechanical prophylaxis
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VI. CONCLUSIONS

Using a cross sectional snapshot analysis, to assess the adherence of neurosurgery division in the department of Surgery at KAUH, to the ACCP guidelines for VTE prevention of the data showed that there is improvement to the adherence to ACCP guideline. The importance of Required Organizational Practices (ROP), the quality department and administration are already in the process of implementing VTE prophylaxis. We should repeat the study in future with implementing VTE risk assessment Model and criteria.

REFERENCES

- [1] Gould, M.K., et al., Prevention of VTE in nonorthopedic surgical patients: Antithrombotic Therapy and Prevention of Thrombosis, 9th ed: American College of Chest Physicians Evidence-Based Clinical Practice Guidelines. Chest, 2012. 141(2 Suppl): p. e227S-77S.