Indications for Warfarin in Trauma Patients

Victor V. Ha MD
Lehigh Valley Health Network, Victor_V.Ha@lvhn.org

Rovinder S. Sandhu MD
Lehigh Valley Health Network, Rovinder_S.Sandhu@lvhn.org

Follow this and additional works at: http://scholarlyworks.lvhn.org/surgery
Part of the Other Medical Specialties Commons, and the Surgery Commons

Published In/Presented At

This Presentation is brought to you for free and open access by LVHN Scholarly Works. It has been accepted for inclusion in LVHN Scholarly Works by an authorized administrator. For more information, please contact LibraryServices@lvhn.org.
Indications for Warfarin in Trauma Patients

Victor Ha, MD

© 2014 Lehigh Valley Health Network
Hypothesis

Patients admitted to the trauma service on warfarin anticoagulation have inappropriate indications for anticoagulation.
Background

• Clinical practice guidelines for anticoagulation are outlined in Chest 2012
• Fall risk currently does not factor into guidelines for anticoagulation with warfarin
• Prior studies have demonstrated inferior outcomes in trauma patients on anticoagulation
Methods

- Retrospective chart review of all patients admitted to the trauma service on preexisting warfarin anticoagulation at a level 1 trauma center between January 1, 2012 and December 31, 2012
- Indications for anticoagulation determined, along with whether the indications meet published guidelines
- Other data points collected included admitting international normalized ratio, mechanism, length of stay, injury severity score, and inpatient mortality
Results

- 2,744 admissions during the study period
- Study group consisted of 219 patients on warfarin anticoagulation
- Median age 77 years
- Most common traumatic mechanisms were mechanical fall (84%), MVC (10%)
Indications for Anticoagulation

- atrial fibrillation (afib) 66%
- deep vein thrombosis (dvt) and pulmonary embolism (PE) 24%
- mechanical heart valve 6%
- other/underdetermined 4%
Thromboembolic Event Risk by CHADS2 Score

- 1 point each for CHF, hypertension, age greater than or equal to 75, diabetes mellitus
- 2 points for previous stroke/TIA
- Anticoagulation indicated for patients with Afib and CHADS2 Score 1 or higher, per Chest guidelines

<table>
<thead>
<tr>
<th>CHADS2 Score</th>
<th>Annual risk of event (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>1.9</td>
</tr>
<tr>
<td>1</td>
<td>2.8</td>
</tr>
<tr>
<td>2</td>
<td>4.0</td>
</tr>
<tr>
<td>3</td>
<td>5.9</td>
</tr>
<tr>
<td>4</td>
<td>8.5</td>
</tr>
<tr>
<td>5</td>
<td>12.5</td>
</tr>
<tr>
<td>6</td>
<td>18.2</td>
</tr>
</tbody>
</table>
Recommendations for Anticoagulation for DVT

- For patients with a proximal DVT provoked by surgery or a non-surgical transient cause, anticoagulation should be continued for 3 months.
- For patients with an unprovoked DVT, continue anticoagulation for 3 months, followed by evaluation of risk-benefit ratio of extended therapy.
Meeting Guidelines

- Guidelines for each indication were individually examined.
- Indications clearly fell within the Chest 2012 guidelines in 84% and did not in 4% of patients; for the remaining 12% of patients the documentation was insufficient to clearly define whether guidelines were met.
- Specifically for the population of patients with afib, 99% met guidelines.
Admission INR

- 62% of patients within therapeutic INR range on admission
- 16% subtherapeutic
- 22% supratherapeutic
Inpatient Mortality Rates

Overall Group

- All trauma admissions in study period (2,744 patients) – 2.9%
- 1,056 patients over age 65 – 4.5%
- Study group of 219 patients on coumadin anticoagulation – 6.8%

Inpatient Mortality by admission INR

- Subtherapeutic 4.4%
- Therapeutic 7.8%
- Supratherapeutic 8.5%
Conclusion

• Contrary to the study’s hypothesis, the majority of the study group fell within Chest guidelines for anticoagulation

• Our data supports earlier studies suggesting inferior outcomes for patients on anticoagulation
Areas for Further Study

- Should fall risk factor into anticoagulation schema?
- How will the use of newer oral direct thrombin inhibitor agents affect outcomes in trauma?
References

1. CHEST 2012; 141(2)(Suppl):7S–47S


Questions?