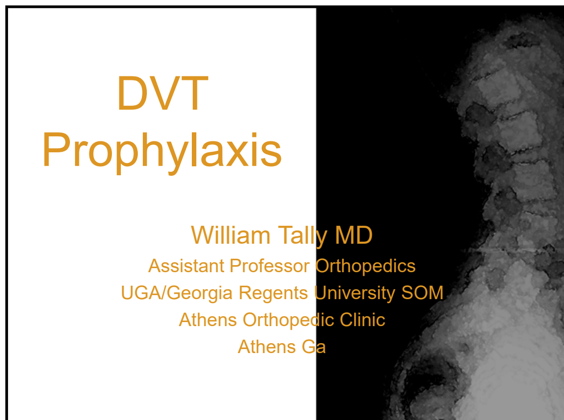

2010 NASS Evidence based Clinical Guidelines

Antithrombotic Therapies in Spine Surgery

Incidence Asymptomotic

- Nass guideline – Cited studies 1.3%-60%
- More recent meta review:

  Coluna/Columna vol 13, no 2; Sao Paolo Apr-jun 2014.

  Range of cited studies 0.2-13.5%

Incidence Symptomatic PE

- NASS guideline- cited studie: NO acceptable studies to make conclusion
  - Due to variety of surgery type and diagnostic methods
- More recent:

Coluna/Columna vol 13, no 2; Sao Paolo Apr-jun 2014.

Range of cited studies 0-7.6%

Incidence Symptomatic PE

These numbers must be kept in perspective:

THA/TKA 40-60% incidence non-symptomatic

And differentiated:

SCI with paralysis- DVT approaches 100%

Vs

Elective ACDF, Microdisc, MIS TLIF

Only Level 1 Study

- Wood et al
  - SCD vs TED stockings:

    no control

But:

1) Lower incidence of DVT than ‘historic control”
2) No difference in treatment groups
3) Therefor dealers choice!

2013

- Yoshikona et al- prospective study
  - Rate of dvt varies by surgical site
    - Cerv<lumb<fusion<scoli<sci
  - Varies by surgical complexity- tumor being most impactful
  - Other variable
    - OR time, “longer post-op immobilization”, blood loss, CHF, male sex, recent weight loss

However

- Numerous peer reviewed studies have not corroborated these conclusions
- This is most likely due to poor quality of our science not reality

Risk of treatment

Cunningham et al JSD&T, 2011.

Showed No statistical improvement in DVT/PE rate using LMWH.

BUT

Awad, Yu, and Ki all showed 4% epidural hematoma rate in independent studues

Presented but not Published

AAOS podium 2017 Liu et al

17.5% of PE pts treated with antcoagulation post-op developed complications requiring surgical intervention

So the risks of treating a PE are high-

So Which number to Chase?

- DVT/PE relatively rare
- When it occurs it is a significant problem with high morbidity
- But aggressive treatment has its own set of problems…

NASS will save us!!

- Or maybe not
- Now

back to the Consensus Clinical Guidelines

Consensus Recommendation

- Do mechanical devices, compression stockings and/chemoprophylaxis decrease rate of DVT/PE?
- Unclear if decrease rate of DVT/PE
- Do decrease clinically significant DVT/PE

Only Clear Statement

- On balance they recommend only mechanical compression devices.
  - Maximum benefit, least risk of complication
  - Only concerned about clinically significant events

What about hip literature

TED stockings and ASA?

‘An option with insufficient evidence to make recommendation’

High Risk Patients?

Consensus statement: most elective spine surgery…very low risk of DVT…however, in high risk pts including multi-trauma, malignancy, hypercoaguable state, prolonged immobilization..

Rec: LMWH use on a case-by-case basis "but may lead to bleeding complications"

Okay but When?

- Best evidence suggests starting SCD or TED just prior to/or at initiation of surgery
- No level 1 evidence but issued as a consensus statement

Be careful- they said it twice

- Repeated consensus statement!!!
- Because of the hazardous risk of symptomatic epidural hematoma the potential consequences confound the benefit..we recommend against chemoprophylaxis unless high risk pt

Stopping Previous Therapy

- Consensus statement!
  - No evidence for benefit of bridge therapy but if required- recommend IV heparin
  - Oral antiplatet agents should be discontinued 1 week prior
  - No statement on direct factorX agents

Spine Surgery isn't Your Fathers Surgery

- Working group- all spine surgery involves dural exposure
  - No attention given to non-canal violating procedures such as LLIF
    - Are these different?

Literature is Confusing at best

- Yang, Liu, **Nature**, *scientific reports* 5, #11834(2015).
  - why published in **Nature?**
  - 1623 pts all spine cases
  - 18% clinically relevant DVT rate
  - Rec treating with LMWH
  - All pts on bed rest min 7 days post-op. Does literature such as this help us???

What We Do at AOC

- Pre-op SCD’s on all pts
- Mobilize within 1 hour of arriving on floor or phase 2
- LMWH POD3 if pt not mobilizing
- Get Medicine to Manage any high risk PE pts

Thank You