

Perioperative Issues In Rheumatoid Arthritis

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Perioperative Issues in RA

■ Objectives

- Review medical considerations in preoperative assessment of RA patients
- Discuss RA medications in perioperative setting

Perioperative Issues in RA

■ Preoperative Assessment

- Patient factors
 - Age, co-morbid conditions
 - Cardiac Risk Factors
 - Exercise Tolerance
- Operation related Factors
 - Length of time
 - Vascular vs. Non-Vascular
 - "High risk"

Perioperative Issues in RA

- **Patient Factors – Rheumatoid Arthritis**
 - Medical Issues
 - Medication Issues

Perioperative Issues in RA

■ Medical Issues

- Cardiovascular Risk Factors
- Anemia
- “H/N” joints
 - Cricoarytenoid joints
 - TMJ joints
 - Atlantoaxial subluxation of C1 on C2

Perioperative Issues in RA

■ Cardiovascular Risks

- NHS: RR 3.1 for fatal, non-fatal MI, stroke in women with RA with 10+ years
 - May have a decreased risk (0.3) if responsive to TNF-alpha treatment in 6 months
- Risk elevated likely due to chronic inflammation, and perhaps Rx (COX-2/steroids)

Perioperative Issues in RA

- **Revised Cardiac Risk Index**
 - History of coronary artery disease
 - History of transient ischemic attack or cerebrovascular accident
 - Renal Insufficiency
 - Diabetes mellitus
 - High-**risk** surgery (chest, abdominal, or pelvic vascular)

Perioperative Issues in RA

- **According to AHA 2007 Perioperative Guidelines**
 - Emergency Surgery: GO
 - Active Cardiac Conditions: Treat
 - Low Risk Surgery: GO
 - Good Functional Capacity: GO
 - No Risk Factors: GO
 - 1-2 Risk Factors: HR Control OR testing
 - 3+ Risk Factors: Beta blockade AND testing

Perioperative Issues in RA

- **Unclear where RA fits into the RCRI**
 - “counted” as a risk factor?
 - Signal to look closer for risk factor assessment?
 - Reminder that may need stress testing? (Lower rates of angina reported)?

Perioperative Issues in RA

■ Anemia

- Mild normocytic anemia 2nd to AoCD
- Microcytic anemia 2nd to Fe deficiency
- Macrocytic anemia 2nd to folate/B12 deficiency, MTX, azothiaprine

■ Perioperatively may increase risk for CHF, ischemia; transfusions may lower this risk.

- HCT < 39% increased 30d mortality and cardiac morbidity

Perioperative Issues in RA

■ Anemia

- Proper evaluation of hematological status
- Correct underlying problem
- Judicious transfusion when necessary
- Discontinue anticoagulation
- EPO may be helpful
- No clear consensus as to “when” to transfuse preoperatively

Perioperative Issues in RA

- **Medication Related Issues**
 - NSAIDS
 - Glucorticoids
 - DMARDs:
 - Traditional
 - Biologics

Perioperative Issues in RA

■ Methotrexate

- Potential Complications: wound healing, infection
- Many small studies, some retrospective, some prospective
- Largest: Grennan et al with 381 pts undergoing different surgeries
 - Continued MTX vs. Stopping MTX 2 weeks before and 2 weeks after vs. Non-MTX treatment through Sx (control)
 - Cont MTX: fewer complications; 8% flare in Stopping MTX
- No consensus amongst rheumatologists
- Generally safe to continue through perioperative period UNLESS comorbidities
 - Hold one week before and start one week after to prevent accumulation of drug and metabolites

Perioperative Issues in RA

■ Leflunomide

- Long half life (2 weeks)
- Paucity of evidence
 - One prospective trial: 82 patients
 - Total joint arthroplasty
 - Holding Leflunomide 2 weeks before and 2 weeks after vs. not stopping: no difference in wound healing.
- Once drug started, do not stop
- More data needed

Perioperative Issues in RA

■ Sulfasalazine

- Half life is 6-10h and elimination is renal
- Otherwise, no specific data
- Risk of renal compromise, therefore hold day of surgery

Perioperative Issues in RA

■ Azathioprine

- One retrospective study:
 - In Crohn's Disease Sx: use of Azathioprine not associated with poor wound healing
- Usually given after kidney transplantation
- Hold drug on day of surgery

Perioperative Issues in RA

■ Plaquenil

- One retrospective study: Bibbo et al.
 - Retrospective study of post op wound complications after orthopedic surgery:
 - no association with post operative complications
- Historically, plaquenil used to prevent post op DVT for orthopedic surgeries
- Half life 40-50 days
- Continue through perioperative period

Perioperative Issues in RA

■ ASA, NSAIDs

- Issues:
 - Hemostasis
 - Wound and bone healing
 - Multiple Rx
 - CV Risk
- Hold 4-5 ½ lives; otherwise 7-10 d for ASA

Perioperative Issues in RA

■ COX-2 Inhibitors

- CV Risk
- Less risk to hemostasis
- ?Increase of thrombosis
- ?Healing issues
 - Avoid in patients with CV Risk

Perioperative Issues in RA

■ Glucocorticoids

- Suppress HPA axis; would infection, impairment of wound and bone healing (biggest demand extubation and reversal of anesthesia)
- No data showing adrenal insufficiency post op in chronic steroid use if continues at usual dose
- ACTH stim test may be useful; no data to support its ability to predict intra/post op
- “Stress Dosing” – risk/benefit decision

Perioperative Issues in RA

Type of Surgery	Glucocorticoid Supplementation
Superficial procedure	Continue normal daily dose
Minor Surgery	25mg of hydrocortisone
Moderate Surgery	50mg – 75mg of hydrocortisone
Major Surgery	100-150mg hydrocortisone

Perioperative Issues in RA

- **TNF-alpha antagonists**
 - Infliximab, etanercept, adalimumab
- **IL-1 Receptor antagonists**
 - Anakinra
- **Anti-CD-20 Antibody**
 - Rituximab (Rituxan)

Perioperative Issues in RA

- **TNF-alpha receptor antagonists**
 - Limited data
 - Animal and experimental studies: conflicting results
 - Data with Crohn's Disease
 - Small, retrospective studies with conflicting data
 - Latest: 1219 retrospective cohort in elective surgeries
 - 50% increase in infections, but not statistically significant
 - Balance: risk of infection, healing with RA flare
 - Depending on surgery ("dirty", leg) and drug, hold a two weeks prior to surgery
 - Four ½ lives prior to surgery?

Perioperative Issues in RA

■ Summary:

- CV Risk: Consider RA a factor?
- Anemia: Consider EPO?
- Rx:
 - NSAIDs: hold
 - Glucocorticoids: give stress doses
 - DMARDs:
 - MTX: continue unless comorbid conditions?
 - Sulfasalazine, Azathioprine, hold day of?
 - Leflunomide, Plaquenil: continue?
 - Biologics: hold

Resources

- **Pieringer H, Stuby U, Biesenbach G.** "Patients with Rheumatoid Arthritis Undergoing Surgery: How Should We Deal with Antirheumatic Treatment?". **Semin Arthritis Rheum 36: 278-286, 2006.**
- **Rosandich PA, Kelley JT, Conn DL.** "Perioperative management of patients with rheumatoid arthritis in the era of biologic response modifiers". **Current Opinion in Rheumatology. 16:192-198, 2004.**
- **Den Broeder AA, Creemers MC, Fransen J, de Jong E et al.** "Risk Factors for Surgical Site Infections and Other Complications in Elective Surgery in Patients with Rheumatoid Arthritis with Special Attention for Anti-Tumor Necrosis Factor: A Large Retrospective Study." **The Journal of Rheumatology 34(4):689-695**
- **Nuttal et al.** "Practice guidelines for perioperative blood transfusion and adjuvant therapies: an updated report by the American Society of Anesthesiologists Task Force on Perioperative Blood Transfusion and Adjuvant Therapies." **Anesthesiology. 2006 Jul;105(1):198-208.**
- **Fleisher et al.** "ACC/AHA 2007 Guidelines on Perioperative Cardiovascular Evaluation and Care for Noncardiac Surgery". **Circulation. 2007;116:e418-e499.**