Key Issues in Hospital Rheumatology

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What is Prop A all about?
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Rheumatic scenarios commonly encountered in the hospital

• Acute Arthritis
• Peri-operative management of medications
• An approach to vasculitis
Acute arthritis: An approach

• If it is a true arthritis address following 3 questions:
  – What is the pattern of the joint involvement?
  – Is there evidence of systemic involvement?
  – What is the synovial analysis telling me?
Acute arthritis:
What is the pattern of the joint involvement?

- Monoarticular
  - Septic joint
  - Crystalline disease e.g. Gout, Pseudogout
  - Trauma
Acute arthritis:

What is the pattern of the joint involvement?

• Monoarticular
  – Septic joint
  – Crystalline disease e.g. Gout, Pseudogout
  – Trauma
    • Malpositioning during a procedure
Acute arthritis:

What is the pattern of the joint involvement?

• Oligo-articular (2-4 joints)
  – Infection
    • Sub-acute bacterial endocarditis
    • Disseminated gonococcus
  – Crystalline
    • Pseudogout
    • Flaring longstanding gout
  – Connective Tissue disease
    • Seronegative spondyloarthropathy
    • Atypical RA or SLE
Acute arthritis:

What is the pattern of the joint involvement?

• Poly-articular (>5 joints)
  – Infection
    • Viral – Parvo B19, acute Hep B, Hep C, HIV
  – Crystalline
    • Pseudogout
    • Flaring longstanding gout
  – Connective Tissue disease
    • Seronegative spondyloarthropathy
    • Atypical RA or SLE
Acute arthritis: Is there evidence of systemic involvement?

- **Historical points**
  - Fevers, weight loss, change in stool

- **Essential to perform complete PE**
  - Skin – palpable purpura, pustules, splinter
  - Cardiac - new murmurs
  - Neuro - mononeuritis multiplex
  - Musculoskeletal – fasciitis, tendonitis, number and pattern of joints affected
Acute arthritis: What is the synovial analysis telling me?

- When possible sample the fluid!
- Send for the following studies
  - Culture - Bacterial, fungal, mycobacterial
  - Gram stain
  - Cell count is a requirement!
    - WBC > 25,000 = septic joint until proven otherwise
    - Septic joint well described with WBC count < 25K e.g. patient partially treated with antibiotics at home
  - Crystal analysis
Acute arthritis:
Most common causes for hospitalized patient

• Septic joint
  – Usually monoarticular,
  – If oligo or poly consider bacteremia with hematogenous spread e.g. endocarditis, line infection
    • Note: shoulder and hip often overlooked
  – Acute arthritis in the hospital setting is septic until proven otherwise
Acute arthritis:
Most common causes for hospitalized patient

- Micro-crystalline arthropathy
  - Gout
    - Foot, ankle, knees
  - Calcium Pyro-phosphate Di-hydrate disease
    - Bilateral wrists
Septic Arthritis

Microbiology

- **Staph. Aureus**
  - 60-70% of adult infections
- **Strep. Species (esp. Strep. A)**
  - seen with soft tissue infections
- **Gram negative Rods**
  - < 25% of septic joints
  - Consider in IDU, or immunocompromised pts
  - Start as urosepsis or skin infections
- **Disseminated gonococcus**
  - Indistinguishable from Reactive arthritis
Septic Arthritis
Treatment

• Antibiotics
  – Use gram stain to direct initial therapy
  – Follow sensitivity patterns of cultures
  – Non-gonococcal arthritis requires at least 2 weeks of IV abx then oral to complete 6 weeks of therapy
Septic Arthritis
Treatment

- Analgesia
  - If considering DGI, initiate non-NSAID therapy along with Antibiotics.

Note: The antibiotics become a diagnostic modality. Immediate relief of arthritis, absent use of NSAIDs strongly suggests DGI
Septic Arthritis
Treatment

• Drainage
  – Repetitive arthrocentesis is efficacious IF . . .
    • If joint is accessible  e.g. Knee
    • If patient allows frequent taps
    • If cell count in aspirate consistently falls with each tap
      • If no orthopedic surgeon available
  – Arthroscopic lavage with drain insertion
    ( Recommend in all cases)
Gout

• Clinical
  – Flares with fluid shifts e.g. CHF diuresis, post-surgical
  – May be indistinguishable from cellulitis or a septic joint
  – 10% accompanied by fever
  – Cyclosporine A – (gas on a fire)
Gout
Treatment

• Hot
  – Once treated, inflammation lasts roughly as long as the time from onset to initiating treatment
  – NSAIDs, (any) are great if not contraindicated
  – Intra-articular steroids are great, if not too many joints
  – Prednisone, systemic (PO or IV) is great alternative
    • PO – 20-40 mg daily, tapered off over 1-2 weeks
Gout Treatment

• NOT
  – Colchicine for acute gout
    • Never use IV colchicine
    • Oral, high dose colchicine rarely indicated (use Prednisone)
  – Initiating allopurinol in the acute setting
    • Exacerbates gout flare
Biologics in Rheumatic diseases
anti-TNF and TB

• Well described correlation between initiation and re-activation of TB
• Median time to develop disease – 12 weeks of therapy
• Clinical picture
  – 55% present with extra – pulmonary TB
    • Lymphadenitis
    • Peritonitis
    • Meningitis
  – Biopsy may be atypical – fewer granulomas, fewer AFBs
  – Culture is Critical
Anti-TNF Biologics in Rheumatic diseases:
Toxicity

• Class effects
  – 4 fold increased risk in incidence of soft tissue infections compared to RA patients on other meds*
  – Reactivation of TB significant concern
  – Worsening CHF
  – Reactivation of Hepatitis B
  – Growing concern about neoplasms#

• Remicade
  – May cause anaphylactoid reaction
  – Infusion reaction

*Dixon WG. Et al Arth&Rheum 54(8)2368-76. 2006
Patients chronically taking steroids: 
Management in the Acute setting

• Adrenal insufficiency
  – Who is at risk
    • Steroid use > 3 months
    • Particularly patients taking > 7.5mg prednisolone
  – Clinical picture
    • Unexplained hypovolemia or septic physiology poorly responsive to fluids
Patients chronically taking steroids: Management in the Acute setting

- **Pathophysiology**
  - Exogenous steroids suppress central CRH and ACTH production
  - In time (?) adrenals atrophy
  - Effect can persist up to one year after cessation of corticosteroid therapy
Patients chronically taking steroids: Management in the Acute setting

- Diagnostics in acutely ill patient
  - Random cortisol 10-15 is concerningly low
  - Cortisol > 35 reassuring
  - Cosyntropin 250 mcq stim yielding less than 20 is inappropriate

- NOTE: A normal cosyntropin test does not insure absence of adrenal insufficiency due to central suppression ie. low endogenous ACTH
Patients chronically taking steroids:
Management in the Acute setting

• Mild stress (fever, minor trauma)
  – double regular dose vs. hydrocortisone 25 mg iv
  – (Recommend hydrocortisone if you double the dose, medication reconciliation may carry the 2x steroid into the post-hospital setting)

• Moderate (hospitalized, mild surgery)
  – Hydrocortisone 50-75mg iv x1 for 2 days

• Severe (major surgery, critically ill)
  – Hydrocortisone 50 mg IV q6
  – Taper by 50% every 1-2 days as patient stabilizes

Patients chronically taking immunosuppressants:
Management in the peri-operative setting

• Methotrexate
  – Continue normal dosing
  – Hold if elderly patient with renal insufficiency

Patients chronically taking immunosuppressants:

Management in the peri-operative setting

• Biologics
  – Infliximab
    • Limited experience, primarily with IBD.
    • Hold pre – op infusion if within 4 weeks of surgery.
    • Hold post-infusion for 2 weeks
  – Etanercept, Adalimumab
    • Limited experience
    • Stop 1 week in advance
    • Re-initiate 2 weeks post procedure

Vasculitis:
An approach to the diagnosis

• Almost always multiple systems involved
  – Distribution of vessel involvement defines clinical picture
    • Skin – lesions often unappreciated
    • Kidney – review the U/A carefully for blood or casts
    • Weight loss non-specific hint

• Must always consider other systemic diseases
  – Vasculitides are rare
  – More common to see systemic infection
Judge Potter Stewart on “hard core pornography” (or vasculitis)

"I shall not today attempt further to define the kinds of material I understand to be embraced within that shorthand description; and perhaps I could never succeed in intelligibly doing so. But I know it when I see it, . . ."

_Jacobellis vs. Ohio, supporting opinion 1964_
Vasculitis:
Mimickers abound

- Systemic Infections
  - Sub-acute bacterial endocarditis
  - Systemic fungal infections
  - Hepatitis C, HIV

- Hypercoaguable state
  - Anti-cardiolipin antibodies
  - Lupus anti-coagulant (abnormal RVVT)

- Embolic events
  - Cholesterol emboli
  - Myxoma
  - Atrial fibrillation
Vasculitis: Mimickers abound

• Para-neoplastic syndrome (occult malignancy)
  – Lymphomas
  – Renal cell carcinoma
  – Amyloidosis

• Vascular abnormalities
  – Atheromatous disease
  – Fibromuscular dysplasia
  – Calciphylaxis

• Drug Reaction
Vasculitis:
An approach to the diagnosis

- Seek objective data
  - Perform careful skin exam
  - Perform musculoskeletal exam – look for synovitis
  - Perform neuro exam – look for mononeuritis multiplex
  - ALWAYS get blood cultures
  - Review the urine
Vasculitis:
An approach to the diagnosis

• Biopsy suspicious candidate tissues
  – Skin
  – Muscle
  – Kidney
  – Sural nerve
  – Temporal artery
• ECHO is a must
• Pursue angiographic evaluation
  • PAN – selective mesenteric vessels
  • Takayasu’s – shoot the aorta
Vasculitis:

Pearls

Pearl #1
Pursue a tissue diagnosis to clarify the acute picture and to guide long-term treatment when other clinicians question the diagnosis.
Vasculitis:
Pearls

Pearl #2
When poised to write the order, always ask yourself

“Am I about to treat a systemic infection with a potent immunosuppressive?”
Questions before lunch?