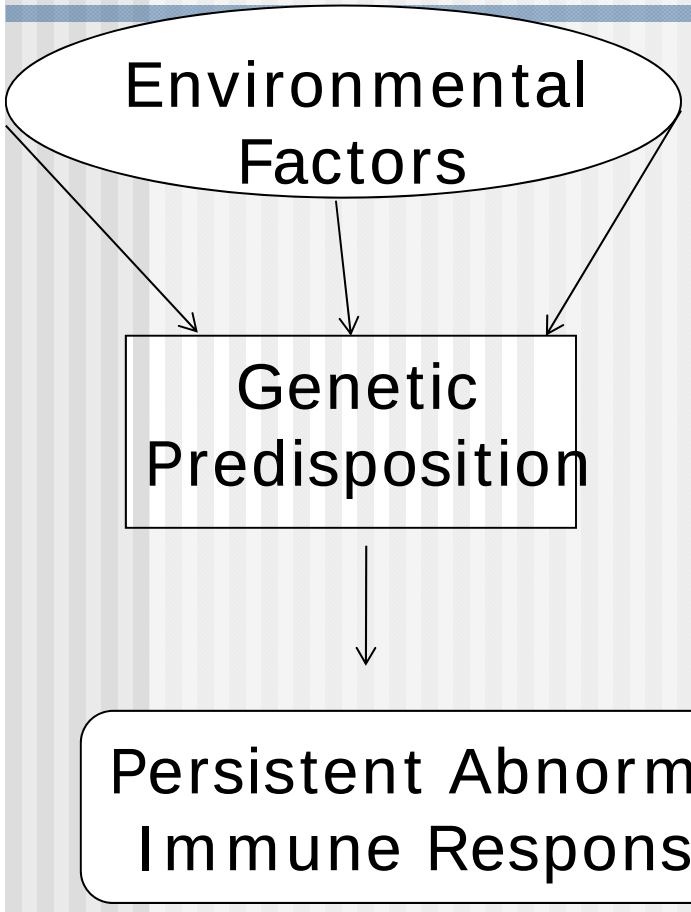
Vasculitides

Vascultic syndromes

- Inflammation of blood vessles
- Types→

1. Large to medium-sized vessels: GCA, Takayasu's arteritis
2. Medium to small-sized vessels:
3. Small-sized vessels: Microscopic polyangitis, HSP, Idiopathic cutaneous vasculitis

Etiopathogenesis:



Auto-Abs (ANCA)

Complement activation

DTH & CMI

Why specified locations for vasculitis ?

- Ability of RES to clear circulating immune complexes
- Physio-chemical properties of immune complexes
- Dynamics (turbulence, hydrostatic pressure) of regional blood flow
- Pre-existing integrity of vessel endothelium

Clinical approach to patient

- When to suspect ??

1. Palpable Purpura
2. Microscopic hematuria/ Ac. Nephritic Synd
3. Chr. Inflammatory sinusitis
4. Pulmonary infiltrates
5. Mononeuritis multiplex
6. Unexplained ischemic events
7. Multisystem presentations

Clinical approach to patient

- Clinical Mimickers (to be ruled out first)

I. Infectious diseases:

1. SABE
2. Disseminated Gonococcal infection
3. Syphilis
4. Lyme disease
5. RMSF
6. Whipple's disease

II. Coagulopathies: APLA, TTP

Approach to patient

- Clinical Mimickers (to be ruled out first)

III. Infiltrative n other disorders:

1. Sarcoidosis
2. Amyloidosis
3. Goodpasture's synd.

IV. Malignancies n Drugs

1. Lymphoma
2. Atrial myxoma
3. Cocaine, Amphetamine
4. Ergot alkaloids, Methylsurgide

Vasculitic disorders: Classification

I. Pr. Vasculitis synd.→

1. Wegener's Granulomatosis
2. Churg-Strass Synd.
3. PAN
4. GCA
5. Takayasu's arteritis
6. HSP
7. EMC
8. Behcet's disease, Kawasaki ds, Cogan's synd.
9. Pr. CNS vasculitis
10. Idiopathic cutaneous vasculitis

Vasculitic disorders: Classification

II. Sec. Vasculitis Synd.→

1. Infections
2. Malignancies
3. Drug induced
4. CTDs
5. Serum sickness

Wegener's Granulomatosis

- Granulomatous vasculitis of Upper n Lower Resp Tracts + Glomerulonephritis
- M:F = 1:1
- Median age of onset = 40 years
- Histopath: Granulomatous, necrotizing vasculitis of small arteries n veins
  - Upper resp tract→ necrotizing granulomas
  - Lungs→ nodulo-cavitary lesions
  - Kidneys→ Pauci-immune glomerulonephritis but no granulomas

Wegener's Granulomatosis

- Clinical manifestations:

1. Resp tract→ Rhinosinusitis, Otitis media, Subglottic stenosis
2. Lungs→ nodulo-cavitary disease, reticular infitrates, hemoptysis, pleuritis
3. Kidneys→ Glomerulonephritis…proteinuria, hematuria, RBC casts
4. Eyes→ Conjunctivits, Keratitis, Scleritis, Uveitis, Retinitis

Wegener's Granulomatosis

- Clinical manifestations:

5. Skin→ Purpura, Ulcers, Subcutaneous nodules
6. Others (Systemic)→ Fever, Arthritis, Weight loss, Peripheral neuropathy, Mononeuritis multiplex

Wegener's Granulomatosis

- Diagnosis :
- By histopath of tissue biopsy…Necrotizing Granulomatous Vasculitis
- Pulmonary tissue has highest diagnostic yield
- Upper Resp tract Bx show only nerotising granulomas but no vasculitis
- Renal Bx shows only Glomerulonephritis (Pauci-immune) and no granulomas
- C-ANCA only adjunctive evidence to tissue Δ

Wegener's Granulomatosis

Differential diagnoses:

- Goodpasture's disease
- Sarcoidosis
- Lung malignancies
- Mucocutaneous leishmaniasis
- Midline destructive disease→ Midline granuloma and upper airway neoplasm
  - erosion through skin of the face commonly occurs and vasculitis is not seen on histopath

Wegener's Granulomatosis

- Treatment:

Oral Cyclophosphamide 2mg/Kg OD….continued till 1 year post complete remission and thereafter gradually withdrawn

+

Oral Glucocorticoids….for initial 6 mths

- 50% relapse after initial complete remission
- No cyclophos for isolated sinus ds/muco-cutaneous ds …f/u for target organ damage such as lungs, kidney or eyes

Wegener's Granulomatosis

- Follow-up:

1. Monitor for TLC to be > 3000 cells/μL
2. Steroid S/E→ Infections, Osteoporosis, Cushing's synd
3. Cyclophosphamide toxicity→ Hem. Cystitis, Ca bladder, Gonadal failure

Churg-Strass Syndrome

- aka Alllergic Angitis and Granulomatosis
- Involved vessels…medium to small sized arteries, capillaries, venules n veins
- Characterisitc Histopath…..Granulomatous reaction with eosinophilic infiltrates…. (hence the name..allergic angitis n granuloma)
- Major sites involved…Lungs (predom), Kidney, Skin n PNS

Churg-Strass Syndrome

- Clinical manifestations:

1. Resp Syst→ Allergic rhino-sinusitis, Bronchial Asthma with Pulm infiltrates
2. Kidney→ lesser involved as compared to wegener's ds
3. Skin→ Purpura, Cutaneous or Subcutaneous nodules
4. PNS→ Mononeuritis multiplex

Churg-Strass Syndrome

- Lab investigations:

1. ESR
2. œ 2 microglobulins
3. P-ANCA
4. DLC (Eosinophilia)
5. CXR
6. PFT
7. Tissue Biopsy

Churg-Strass Syndrome

- Diagnosis:

Bronchial Asthma + Eosinophilia

+

Clinical featurs consistent with vasculitis

- Treatment:
  - Systemic steroids (long-term for Asthma)
  - Cyclophos….if Fulminant ds or Steroid failure

Polyarteritis Nodosa (PAN)

- Necrotizing vasculitis (No Granuloma) of medium sized arteries & veins (No Venules)
- Involved sites….Renal and Visceral arteries (Pulmonary vessels spared)
- Characteristic pathology…aneurysmal dilatations (up to 1 cm) along involved arteries

Polyarteritis Nodosa (PAN)

- Clinical manifestations:

1. Renal→ CKD, HTN
2. GIT→ GI bleed, Bowel perf/ulceration/ infarction, Pancreatic or hepatic infarction
3. CNS-> TIA, CVA, GTCS
4. PNS→ Peripheral neuropathy, Mononeuritis multiplex
5. Skin→ Purpura, Nodules, Infarcts

Polyarteritis Nodosa (PAN)

- Diagnosis:

1. No diagnostic serologic tests
2. Histopath…s/o vasculitis (Bx from involved tissue/organ)
3. Angiography…if tissue diagnosis not feasible aneurysmal dilatations n stenotic segments in Renal, Hepatic n other visceral vasculature
4. HBsAg + in 30%

Polyarteritis Nodosa (PAN)

- Prognosis n Treatment:
- Prognosis extremely poor

  …5 yr survival rates around 10-20%
- Death usually from GI complications

  …Bowel infarction n perforation
- Steroids/Steroids + Cyclophos

  ….as per disease severity & organ involved
- IFN + Steroids for HBsAg +

Microscopic Polyangitis

- Necrotozing vasculitis (but no granulomas) of small vessels (arterioles, capillaries n venules)
- Predom manifestation as Glomerulonephritis
- However, Pulm capillaritis also common (as opposed to PAN); Also c-ANCA +
- Reno-Pulmonary synd…..similar to Wegener's ds but upper airway involv not found
- T/t as for Wegener's granulomatosis

GCA/Temporal/Cranial Arteritis

- Vasculitis of large- to medium-sized arteries
- Characteristic involv of one or more branches of Carotid artery..esp Temporal art

- Epidemio: Female preponderance
  > 50 years of age
  asso with Polymyalgia rheumatica

GCA/Temporal/Cranial Arteritis

- Clinical manifestations:
  - Fevre
  - Headache
  - Anemia
  - Î ESR ……..in a 50+ female patient
  - …Scalp pain/tenderness, jaw claudication, Ischemic Optic Neuropathy (ION), MI, CVA
  - Asso. c/o Polymyalgia (neck, shoulders, lower back, hips, & thighs) rheumatica

GCA/Temporal/Cranial Arteritis

- Diagnosis: clinical suspicion confirmed by diagnostic biopsy from temporal artery (3-5 cm long segment with serial sections)
  Negative histopath dsnt rule out ds

- Treatment: highly responsive to systemic steroids (X 2-3 years);
- However delay in treatment can cause permanent visual loss

Takayasu's Arteritis

- aka Pulseless ds/ Aorto-arteritis/ Aortic Arch Synd
- Large- to medium-sized arteritis..esp Arch of Aorta n its branches

Takayasu's Arteritis

- Clinical manifestations:
  - Systemic
  - Regional

1. Subclavian : Arm claudication, Raynaud's
2. Common Carotid : TIA, CVA, Visual defects
3. Renal : CKD, HTN
4. Pulm : Atypical chest pain
5. Coronary : MI, USA

Takayasu's Arteritis

- Diagnosis: suspected in young women with weak or absent peripheral pulses, discrepancies in BP and presence of arterial bruit……..
- confirmed by Arteriography showing Stenosis, Post-stenotic aneurysmal dilatation

Takayasu's Arteritis

- Prognosis n Treatment:
- Course is Chronic and Relapsing
- Medical treatment with systemic steroids
- Invasive interventions→ Bypass grafting
  Stenting
- For Steroid Refractory / Steroid Dependant patients….MTX

Henoch-Schölein Purpura

- aka Anaphylactoid Purpura
- Small vessel vasculitis
- Purpura + Arthralgia + GI s/s + Glomerular hematuria- Proteinuria
- 4-7 yrs of age; not a rare ds
- Diagnosis based on clinical suspicion…skin biopsy shows Leukocytoclastic vasculitis with Ig A & C3 deposits on Immunofluorescence

Henoch-Schölein Purpura

- Treatment

- Usually resolves spontaneously without T/t

- Steroids….effective only for Arthralgia and Abdominal symptoms

  …..no role in Purpura/ Renal disease

Idiopathic Cutaneous Vasculitis

- Inflammation of small-sized blood vessels of dermis…post-cap venules most prominently affected
- Cutaneous vasculitis:70% from Pr./Sec. Vasc
  30% are idiopathic
- skin lesions: Palpable Purpura, Subcutaneous nodules, vesicles, ulcers on dependant areas i.e. legs (ambulatory) n sacral area (recumb)

Idiopathic Cutaneous Vasculitis

- No specific diagnostic tets
- Mild î ESR n leukocytosis, other lab inves to primarily rule out Pr./Sec. Vasculitis
- Treatment: symptomatic (NSAIDs n Anti-histaminics); Steroids only for refractory cases

Essential Mixed Cryoglobulinemia

- Essnetial→ Primary
- Mixed→ Mono-, Oligo-, Polyclonal Ig
- Cryoglobulinemia→ Cold ppt. Ig

- Sec. cryoglobulinemia→

1. Myelo-lymphoproliferative dr
2. CTDs
3. HCV infection

EMC

- Clinical manifestations:

1. Cutaneous Vasculitis
2. Peripheral Neuropathy
3. Glomerulonephritis…Ac. Mortality rare but 15% progress to ESRD

- Lab tests:

1. Cryoprecipitates
2. RF (almost always…helpful when no cryoppt)
3. Hypocomplementemia (90%)
4. HCV n ESR

EMC

- Treatment:

1. IFN + Ribavirin…..if HCV positive
2. Steroids……..if HCV negative

Behcets Syndrome

- Recurrent oral & genital ulcers with ocular involvement

1. Oral ulcers…sine qua non
   heal over 1-2 weeks without scarring
2. Genital ulcers…less frequent but more spf.
   don't affect glans penis n urethra
   scrotal scars +
3. Ocular involv….Uveitis, Optic neuritis, Retinits

Behcets Syndrome

- Other manifestations:
  - Supf n deep vein thrombosis (25%)
  - Skin…Erythema nodosum, acneform eruptions
  - Skin…non-spf inflm reacn to any scratches or intradermal saline injection (Pathergy test)

- Diagnosis→ Recurrent Oral Ulcers + any 2 of
  1) Genital ulcers 2) Eye lesions
  3) Skin lesions) Pathergy test

Behcets Syndrome

- Treatment:

- Oral/Genital ulcers→ Topical Steroids
- Venous thrombosis→ Aspirin 325 mg/d
- Uveitis/Retinits/Optic neuritis→ Steroids

+

AZT

Primary CNS Vasculitis

- Presentation:

1. Severe headache
2. Encephalopathy/ behavioral changes
3. TIA/CVA/FND

- Diagnosis: Angiography (beaded appearance)
  brain bx (for confirmation)
- Prognosis poor (even with treatment)

Cogan Syndrome

- Co….Cornea (Interstitial keratits)
- Ga….Great arteries (Aortitis)
- N…..Nerve (8th Cr. N.)

- Def: Non-syphilitic interstitial keratitis with vestibulo-auditory deficit (B/L SNHL)

- Treatment: Systemic Steroids

Kawasaki ds/ Mucocutaneous LN syndrome

- Non-suppurative cervical LAP with muco-cutaneous lesions (erythema, edema, desquamation)
- Mainly in children (80% cases under 5 yrs)
- 25% have coronary artery aneurysm
- Mortality = 0.5-2.8 %; otherwise complete recovery
- T/t: IV Ig 2g/Kg Single infusion over 10 hrs Aspirin 100 mg/Kg X 2 wks f/b 5 mg/Kg X