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Conflict of interest statement

None
Overview

- Overview of the **general principles** of treatment of vasculitis
- Discuss **commonly prescribed medications** and their side-effects
  - Prednisone
  - Cyclophosphamide
  - Methotrexate
  - Azathioprine
  - Mycophenolate Mofetil
  - Rituximab
Vasculitis

- Includes a group of conditions characterized by inflammation of blood vessels
- Autoimmune
- Cause unknown in most cases but some are triggered by infection
- Inflammation from the blood vessels can cause decrease in blood supply to organs and damage to these organs
Vasculitis Treatment

- Treatment is directed at suppressing the immune system “immunosuppression”
- Goals of treatment
  - To decrease the inflammation and further damage
  - Achieve “remission”
  - Maintain remission
  - Treat “flares”
  - Monitor for side effects
Vasculitis Treatment

Factors influencing treatment choice:
- Diagnosis/type of vasculitis
- Areas of involvement from vasculitis
- Other medical conditions
Vasculitis Treatment

- All require regular follow-up with your doctor
- Most with the exception of prednisone take several months to work
- Regular blood tests necessary for safety
- Most are NOT SAFE for pregnancy or breast-feeding
- They all decrease your body’s ability to fight infections
  - Avoid sick contacts, practice good hygiene/hand-washing
  - Report signs of infection and seek attention promptly
  - Recommend appropriate vaccination but LIVE VACCINES are contraindicated
Prednisone – The Good

- “Steroids”
- Used for almost all types of vasculitis
- Fast acting
- Helps decrease the inflammation and make you feel better
- Can be used intravenously (“pulse”) or by pill
Prednisone – The Bad and Ugly

- Many side-effects including but not limited to:
  - Weight gain
  - Mood changes (irritability, depression, mania)
  - Fluid retention
  - Round, puffy face
  - Skin thinning, easy bruising
  - Cataracts, glaucoma
Prednisone – The Bad and Ugly

- Adverse effects
  - Infections
  - Thins out the bones – osteopenia or osteoporosis
  - High blood sugar/diabetes
  - High blood pressure
  - Muscle weakness
  - Stomach issues
  - Avascular necrosis
  - Adrenal insufficiency – NEVER STOP ABRUPTLY
Prednisone – Considerations

- Use the medication as directed
- Important to watch your diet and maintain a healthy weight
- Calcium and vitamin D to help with bone protection
- May need to add other medications to reduce risk of a particular lung infection (Bactrim) or other medicines to protect bones
Cyclophosphamide – The Good

- “Chemotherapy”
- Not safe for pregnancy or breast feeding
- Used in certain forms of vasculitis for “induction of remission” and for severe “flares”
- Potent immunosuppressive
- Available as pill form or intravenously
Cyclophosphamide – The Bad and Ugly

- Adverse effects
  - Nausea, vomiting, hair loss
  - Low blood counts (WBC, platelets)
  - Liver dysfunction
  - Infections
  - Loss of fertility – there are measures to help
  - Bladder hemorrhage (cystitis)
  - Increased risk of cancers - bladder, blood cancers
Cyclophosphamide - Considerations

- Regular testing evaluating blood counts and urine are very important
- Stay well hydrated
- If on pill form, take in the morning
- Monitor for infections
- Report any blood in the urine immediately to your doctor
Methotrexate – The Good

- “Chemotherapy” but not at the doses used in rheumatology
- Pregnancy/breast feeding contraindicated
- Can be used as first-line agent for certain forms of vasculitis, or, to maintain remission
- Available as pill or injection
- Typical dose: 20-25mg once weekly
- Folic acid (vitamin) can help counteract some side-effects
Methotrexate – The Bad and Ugly

- Caution in those with kidney or liver problems
- Adverse effects:
  - Hair thinning, sun-sensitivity
  - Sores in the mouth
  - Gastrointestinal symptoms
    - Diarrhea, loss of appetite, nausea, vomiting
  - Low blood counts
  - Elevated liver function tests, liver scarring
  - Pneumonitis (lung inflammation)
  - Infections
  - Lymphoma (very rare, usually resolves with stopping MTX)
Methotrexate - Considerations

- Take folic acid
- Avoid alcohol
- Regular blood monitoring
- Drug-drug interaction with high dose Bactrim/Septra
- Report any fevers, shortness of breath, dry cough
Azathioprine – The Good

- Used in certain forms of vasculitis to put people into remission or to maintain remission
- Avoid during pregnancy if possible, not recommended for breast feeding
- Pill form
- Okay to use in cases of kidney dysfunction
- Thiopurine Methyltransferase level (TPMT)
Azathioprine – The Bad and Ugly

- Caution in those on allopurinol for gout (drug-drug interaction)

- Adverse effects
  - Nausea, vomiting, loss of appetite
  - Low blood counts (WBC, platelets)
  - Liver test abnormalities
  - Infection
  - Increased risk of cancers (skin cancers, others)
  - Rare: pancreatitis
  - Can cause a “hypersensitivity” reaction
Azathioprine - Considerations

- Avoid alcohol
- Get regular laboratory testing as recommended by your doctor
- Report any sudden fevers (without infection) with rashes, stomach pain, nausea
- Remember drug-drug interaction with allopurinol
Mycophenolate Mofetil – The Good

- Used to maintain remission in certain forms of vasculitis
- Pregnancy/breast feeding contraindicated
- Pill form
- Safe to use in kidney dysfunction
Mycophenolate Mofetil – The Bad and Ugly

- Can cause nausea, vomiting, diarrhea
- Low blood counts
- Liver function abnormalities
- Ankle swelling
- High blood pressure
- Infection (including rare cases of Progressive multifocal leukoencephalopathy, PML)
- Cancers
- Stomach bleeding
Mycophenolate Mofetil - Considerations

- Take on empty stomach to help with absorption
- Regular laboratory tests
- Report any confusion, behavioral changes, difficulty walking or with balance
Rituximab – The Good

- Recently FDA approved for treatment of certain forms of ANCA vasculitis
- Also used in other forms of vasculitis
- Intravenous medication usually administered once a week over 4 weeks or as 2 doses 2 weeks apart
- Does not affect fertility but not safe during pregnancy
Rituximab – The Bad and Ugly

- Infusion reactions common – muscle aches, low blood pressure, fever
- Can cause low white count
- Infections including Progressive Multifocal Leukoencephalopathy (PML)
- Reduced vaccine effectiveness
Rituximab - Considerations

- Usually given premedications to reduce infusion reactions
- Monitor for infections
- Report any confusion, new neurologic symptoms, difficulty walking, behavioral changes
Medications – Summary

- Use as directed and under the supervision of our doctor
- Get appropriate tests done regularly
- Monitor for infection and side-effects – report these to your doctor
- Discuss any plans for pregnancy with your doctor
- Protect yourself from sick contacts and by getting appropriate vaccinations
Thank you!
Questions?