

Bullet Point Nursing

Anti-inflammatory pharmacology

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Drug class: Non-steroidal anti-inflammatory drug (NSAID)

- Drugs:
 - Ibuprofen (Advil, Motrin)
 - Ketorolac (Toradol)
 - Meloxicam (Mobic)
 - Naproxen (Aleve)
 - Indomethacin
 - Aspirin
- MOA: Inhibits cyclooxygenase (COX) one and two. This inhibits prostaglandins which cause inflammation. This also reduces the protective lining of the stomach.
 - Breakdown of COX effects:
 - COX 1: Supports the stomach lining, the kidneys, platelet aggregation, and promotes vasodilation
 - COX 2: Proinflammatory
- Indications: Anti-inflammatory (i.e. RA, gout), analgesia, antipyretic
 - Aspirin specifically is also used for suppression of platelet aggregation. Used for prevention of cardiovascular events
 - Should be stopped before major surgery and childbirth
- Black Box warning: GI bleeding, adverse cardiac events
- Meloxicam, indomethacin, and ketorolac are by prescription only
- SE/AE: GI bleeding, nephrotoxicity, hepatotoxicity
 - Tinnitus (Aspirin only)
- Aspirin is not to be used in children under 18 years due to risk of Reye's Syndrome
- NSAIDs are available through multiple different routes with different onsets

Drug class: NSAID – COX 2 inhibitors

- Drug:
 - Celecoxib (Celebrex)
- MOA: Inhibits COX 2. This inhibits prostaglandins which cause inflammation
- Indication: Anti-inflammatory such as in RA
- Alternative anti-inflammatory due to increased risk of adverse cardiovascular events
- Less risk of adverse GI effects

Drug class: Glucocorticoid / Corticosteroid

- Drugs:
 - Hydrocortisone
 - Prednisone

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- Methylprednisolone
- Dexamethasone
- Betamethasone
- MOA:
 - Suppresses inflammation (by inhibiting multiple inflammatory cytokines)
 - Suppresses immune response (by reducing leukocyte function)
 - Suppresses adrenal function (via negative feedback)
- Indications: Adrenocortical insufficiency, Addisons, inflammation, immune suppression, nausea
 - Specific conditions include gout, asthma, covid-19, IBD, allergies, cancers
- SE/AE: Immunosuppression, hyperglycemia, hypertension, osteoporosis, mood swings, weight gain, sodium and fluid retention, PUD, abnormal fat deposits (Cushing's)
- Preferential to select steroids with a local effect versus a systemic effect (intranasal versus PO)
 - Available topically, intranasal, inhaled, orally, and via injection
- Steroids must always be tapered when discontinued
- Increased risk of adverse effects if given with NSAIDS
- Monitor bone density with long term use (Encourage calcium and vitamin D)
- Avoided in patients with an active infection

Drug class: Serotonin 5-HT Agonist

- Drug:
 - Sumatriptan (Imitrex)
 - Zolmitriptan
 - Rizatriptan
- MOA: Cerebral vasoconstriction and decreases perivascular inflammation
- Indications: Acute cluster headache and acute migraines
- SE/AE: Common complaint is a vague feeling of chest pressure or heaviness
- Taken upon the onset of migraine (aura)
- First line agent for acute migraines
- Can cause rebound headache if taken in excess of twice per week or nine times per month
- Unknown safety in pregnancy – not recommended as first line in pregnancy
- Can cause serotonin syndrome if taken with other serotonin medications
 - S/S include agitation, confusion, fever, tachycardia, hypertension, hyperreflexia, tremors
- Contraindicated in those with cardiac disease or uncontrolled hypertension
- Overdose treated with a beta-adrenergic antagonist
- Migraine Treatment (Acute)
 - Ergot alkaloids (e.g., ergotamine)
 - CGRP receptor antagonists (e.g., rimegepant, ubrogepant)
- Migraine Prevention (Prophylaxis)
 - Beta-blockers (e.g., propranolol)
 - SNRIs (e.g., venlafaxine)
 - TCAs (e.g., amitriptyline)
 - Anti-epileptics (e.g., topiramate, valproic acid)
 - CGRP monoclonal antibodies (e.g., erenumab, fremanezumab)

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References

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