
AUTHORIZED BY: CPC Quality of Care Committee

ISSUE DATE: June 2002

CATEGORY: ACP/PCP Medications

TITLE: **ACETYLSALICYLIC ACID (ASA)**

REVISION DATE: Sept 2019

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- Other Names:**
- Enteric Coated ASA (ECASA), Aspirin, Novasen, Entrophen
- Classifications:**
- Non-Steroidal Anti-Inflammatory Drug (NSAID), Analgesic, Nonopioid, Antiplatelet Agent, Antipyretic
- Pharmacodynamics:**
- ASA is a weak acid, which is easily and rapidly transformed for absorption in the stomach. It is hydrolyzed into salicylate, a highly protein bound drug, which is easily transformed for excretion in the liver
- Platelet Antiaggregant effects: ASA inhibits Thromboxane A₂ production, which is responsible for platelet aggregation. With the decrease in platelet aggregation the blood does not form clots as easily. The changes to the platelets from ASA are irreversible, though the cell only lives from 5 to 7 days
 - Analgesic/Anti-inflammatory effects: Inactivates cyclo oxygenase enzyme, which decreases the production of prostaglandin in the tissue, blocking the pain receptors sensitivity and decreases inflammation
 - Antipyretic effects: By inhibiting the release of prostaglandin, blood flow is enhanced to the vessels of the skin. This allows for easier release of heat through evaporation and convection. Though heat is easily released, the production of heat is not reduced by ASA
- Other information: At high doses there is a direct stimulation of the respiratory center in the medulla, which increases rate and depth of respirations (hyperventilation). You may also find increase of respiratory alkalosis from the hyperventilation as O₂ consumption and CO₂ production increase. Also at high doses ASA will block the secretion and re-absorption of uric acid
- Onset:**
- 15-30 min.
- Peak:**
- Chewable: 2 hrs
 - Enteric Coated: 6 – 8 hrs
- Duration:**
- Dose dependent
- Indications:**
- Prophylactic treatment of cardiac ischemia/angina pain
 - Mild to moderate pain relief
 - Relief of fever
 - Relief of inflammation
 - Combined use for thrombolytic care of Myocardial infarction (MI)

TITLE: **ASA**

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- Contraindications:**
- Hypersensitivity or allergy to the medication
 - ASA or NSAID administration induced bronchoconstriction, angioedema, generalized urticaria, severe rhinitis, laryngeal edema, or shock
 - Current active bleeding
 - Evidence of Cerebral Vascular Accident (CVA) or head injury within the last 24 hrs
 - Active peptic ulcer
- Precautions:**
- History of gastrointestinal ulcers
 - Administration during last trimester of pregnancy should be avoided as it may inhibit clotting factors of mother and unborn child and prolong the pregnancy or labour
 - Discontinue use at least one week prior to elective surgery
 - Asthma (asthmatic patients may have hypersensitivity to ASA and precaution should be taken with first time use)
 - Use with extreme caution in patients with decreased renal function, bleeding tendencies, significant anemia, hypoprothrombinemia, thrombocytopenia, vitamin K deficiency or severe hepatic disease.
- Adverse Reactions:**
- Pulmonary edema may occur with chronic or acute large dose ingestion
 - Gastrointestinal (GI): ulcer, hemorrhage, dyspepsia, abdominal pain, heartburn, N & V, diarrhea at high doses
 - Tinnitus (with larger doses)
- Drug Interaction:**
- Anticonvulsants: Large doses of ASA may increase phenytoin (Dilantin) serum levels by inhibition of phenytoin metabolism
 - Antihyperglycemic agents: ASA increases the antihyperglycemic responses to oral hypoglycemic drugs, thus decreasing blood glucose levels
 - Non-steroidal Anti-inflammatory Drugs (NSAIDS): Concomitant use of ASA and NSAIDS increases the risk of GI side effects while providing no additional therapeutic benefits
- Special Considerations:**
- Route: PO
 - 500mg/kg may be fatal
- Preparations:**
- Enteric coated or uncoated tablets of variable strength (80 mg, 81 mg, 160 mg, 325 mg)
- References:**
- Lexicomp 2019
 - Compendium of Pharmaceuticals and Specialties 2013
 - Ontario Provincial ALS Patient Care Standards, Version 4.6
 - 2015 AHA Guidelines : ACLS

NOTE: The information contained herein does not supersede or negate the MoHLTC Provincial Advanced Life Support Patient Care Standards and should only serve as general information about the medication itself. For medication dosages, please refer to the current version of the Ontario Provincial ALS Patient Care Standards.