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<tbody>
<tr>
<td>Trade Name</td>
<td>ASPIRIN, generics</td>
<td>PLAVIX</td>
<td>EFFIENT</td>
<td>BRILINTA</td>
</tr>
<tr>
<td>Dosage Forms</td>
<td>81 mg, 325 mg enteric coated and non-enteric coated tablets 80 mg chewable tablet.</td>
<td>75 mg tablet</td>
<td>10 mg tablet</td>
<td>90 mg tablet</td>
</tr>
<tr>
<td>Indication</td>
<td>ACS treatment. Secondary prevention of cardiovascular events in coronary artery disease. Secondary stroke prevention. Adjunctive therapy in revascularization procedures (CABG, PCI, carotid endarterectomy). Alternative for prevention of thromboembolic events, including stroke, in patients with atrial fibrillation who are not candidates for anticoagulants.</td>
<td>UA/NSTEMI managed medically or with PCI (with or without stent) or CABG. STEMI (with or without reperfusion therapy with PCI or CABG). Secondary stroke prevention. Secondary prevention of cardiovascular events in patients with ASA allergy. In lieu of ASA, as an alternative for prevention of thromboembolic events, in patients with atrial fibrillation with ≥1 risk factor for vascular events, unsuitable for treatment with an anticoagulant and at a low risk for bleeding.</td>
<td>ACS treatment in patients who are undergoing PCI.</td>
<td>ACS treatment in patients who are managed medically or with PCI or CABG.</td>
</tr>
<tr>
<td>Dosing</td>
<td>Acute MI (initial): 162-325 mg 81-325 mg once daily</td>
<td>300-600 mg load, followed by 75 mg daily</td>
<td>60 mg load, followed by 10 mg daily</td>
<td>180 mg load, followed by 90 mg BID (in combination with 81 mg ASA)</td>
</tr>
</tbody>
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## Cardiovascular Drugs and Therapies
### ANTIPLATELET AGENTS (Oral)

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<tr>
<td><strong>Contraindications/Precautions</strong></td>
<td>Active bleed</td>
<td>Active bleed, severe hepatic impairment</td>
<td>Active bleed, severe hepatic impairment, history of intracranial hemorrhage, stroke/TIA (CI), ≥75 years old, under 60 kg, or at high risk of bleeding, patients on oral anticoagulants</td>
<td>Active bleed, moderate to severe hepatic impairment, history of intracranial hemorrhage, stroke, or high risk of bleeding, co-administration with oral anticoagulants or strong CYP3A4 inhibitors. Caution in patients with bradycardia, hyperuricemia and in patients likely to have dyspnea.</td>
</tr>
<tr>
<td><strong>Mechanism of Action</strong></td>
<td>Inhibits COX-1 and COX-2, blocking synthesis of TXA2 and PG12</td>
<td>Thienopyridine PRODRUG irreversibly binds to P2Y12 receptor on platelets</td>
<td>Thienopyridine PRODRUG irreversibly binds to P2Y12 receptor on platelets</td>
<td>Cyclopentyltriazolopyrimidine reversibly binds to P2Y12 receptor on platelets</td>
</tr>
<tr>
<td><strong>Onset</strong></td>
<td>1 hour 3-4 hours (enteric coated)</td>
<td>2 hours</td>
<td>30 minutes</td>
<td>30 minutes</td>
</tr>
<tr>
<td><strong>Metabolism</strong></td>
<td>Hepatic: hydrolyzed to salicylate (active metabolite)</td>
<td>Hepatic: hydrolysis to an inactive metabolite; also 2 CYP-dependent steps (primarily involving CYP2C19) to active metabolite</td>
<td>Hepatic: rapid intestinal and serum metabolism via esterase-mediated hydrolysis to a thiolactone (inactive), which is then converted, via CYP3A4 and CYP2B6 oxidation, to an active metabolite</td>
<td>Hepatic: via CYP3A4 to an active metabolite</td>
</tr>
<tr>
<td><strong>Elimination</strong></td>
<td>Renal</td>
<td>Renal/fecal</td>
<td>Renal/fecal</td>
<td>Renal/fecal</td>
</tr>
<tr>
<td><strong>CYP Interaction</strong></td>
<td>No</td>
<td>Yes (CYP2C19) *potential for inter-patient variability</td>
<td>No</td>
<td>Yes (moderate CYP3A4 inhibitor)</td>
</tr>
</tbody>
</table>

ACS = Acute Coronary Syndromes  
CABG = Coronary Artery Bypass Graft  
PCI = Percutaneous Coronary Intervention  
UA/STEMI - Unstable Angina/Non-ST Segment Elevation Myocardial Infarction
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<tr>
<td><strong>PGP Interaction</strong></td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>Yes (weak PGP inhibitor)</td>
</tr>
<tr>
<td><strong>Safety</strong></td>
<td>GI toxicity (dose dependent), Bleeding</td>
<td>Bleeding (GI hemorrhage, hematoma, epistaxis), bruising, rash, pruritus</td>
<td>Bleeding (more major and life-threatening bleeding in TRITON-TIMI38 compared to clopidogrel)</td>
<td>Bleeding, dyspnea (mild, short lived), asymptomatic ventricular pauses &gt;3s (resolving in 30 days), increase in Scr and uric acid during treatment</td>
</tr>
<tr>
<td><strong>Clearance Considerations</strong></td>
<td>Renal: Avoid if CrCl&lt;10 mL/min Hepatic: Avoid with severe liver disease</td>
<td>Hepatic: caution in hepatic impairment</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td><strong>Unit Cost</strong></td>
<td>$0.03/ 325 mg $0.05/ 650 mg</td>
<td>$0.66/ 75 mg</td>
<td>$2.70/ 10 mg</td>
<td>$1.50/ 90 mg</td>
</tr>
<tr>
<td>**30 Day ** Patient cost</td>
<td>$0.97 (325 mg daily) $1.60 (650 mg daily)</td>
<td>$21.40 (75 mg daily)</td>
<td>$88 (10 mg daily)</td>
<td>$96 (90 mg bid)</td>
</tr>
<tr>
<td><strong>ODB</strong></td>
<td>No (81 mg) Yes (325 mg)</td>
<td>Yes</td>
<td>Limited Use Code (In combo with ASA for pts with: 1. STEMI undergoing primary PCI who have not received antiplatelet therapy prior to the catheterization 2. ACS who failed clopidogrel and ASA as defined by definite stent thrombosis or recurrent STEMI/ NSTEMI/ UA after prior revascularization via PCI)</td>
<td>Limited Use Code (For pts with STEMI/NSTEMI/UA and <strong>ONE</strong> of the following: 1. Failure on optimal clopidogrel and ASA as defined by definite stent thrombosis or recurrent STEMI/ NSTEMI/ UA after prior revascularization via PCI 2. STEMI and undergoing revascularization via PCI 3. NSTEMI or UA with high risk angiographic features <strong>and</strong> undergoing revascularization via PCI)</td>
</tr>
</tbody>
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### Notes
- **PGP**: P-glycoprotein interaction
- **Safety**: Potential side effects
- **Clearance Considerations**: Renal and hepatic clearance recommendations
- **Unit Cost**: Pricing per dose
- **30 Day Patient cost**: 30-day cost for patients
- **ODB**: Ontario Drug Benefit coverage
- **MSH**
  - **Yes**: Available under MSH
  - **No**: Not available under MSH

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<tr>
<td>UHN(^a)</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
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</table>

* List prices from the Ontario Drug Benefit (ODB) Formulary, Ontario Ministry of Health. Last Updated: 01/04/2011 Version 2.2. All prices represent the generic medication option.

# 30 day patient costs represented by ODB generic price + 8% markup. These prices do not include a dispensing fee, which can range from 4.99 – 11.99. Pricing is based on a typical dosing regimen.

a - ODB - indicates an item on the Ontario Drug Benefit (ODB) Formulary
b - MSH - indicates an item on the Mount Sinai Hospital Formulary; UHN - indicates an item on the University Health Network Formulary
References
disease, antithrombotic therapy and prevention of thrombosis, 9th ed. American College of Chest
prevention of thrombosis, 9th ed. American College of Chest Physicians evidence-based clinical
5. Wallentin L, Becker RC, Budaj A, Cannon CP et al Ticagrelor versus Clopidogrel in Patients with

Prepared by: Sidika Dhalla, BScPhm, PharmD Student - August 2012
Reviewed by: Yvonne Kwan, BScPhm, ACPR, and Laura Murphy, PharmD – September 2012
Approved by: Cardiovascular Subcommittee – October 2012;
Pharmacy & Therapeutics Committee – Dec 2012
Revised: September 2013, January 2015
Cardiovascular Drugs and Therapies

ANTIPLATELET AGENTS (Oral)

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1. Purpose of the Pharmacotherapy Handbook.

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The Pharmacotherapy Handbook is intended to be used as a tool to aid in the appropriate prescribing and administration of cardiovascular formulary agents.

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Due to the rapidly changing nature of cardiovascular treatments and therapies, users are advised to recheck the information contained herein with the original source before applying it to patient care.

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