Oxaliplatin: Drug information

(For additional information see "Oxaliplatin: Patient drug information" and see "Oxaliplatin: Pediatric drug information")

For abbreviations and symbols that may be used in Lexicomp (show table)

ALERT: US Boxed Warning

Hypersensitivity/Anaphylactic reactions:

Anaphylactic reactions to oxaliplatin have been reported and may occur within minutes of administration. Epinephrine, corticosteroids, and antihistamines have been employed to alleviate symptoms of anaphylaxis.

Brand Names: US

Eloxatin [DSC]

Brand Names: Canada

Eloxatin; Oxaliplatin Injection; PMS-Oxaliplatin

Pharmacologic Category

Antineoplastic Agent, Alkylating Agent; Antineoplastic Agent, Platinum Analog

Dosing: Adult

Note: Oxaliplatin is associated with a moderate emetic potential; antiemetics are recommended to prevent nausea and vomiting (Basch 2011; Dupuis 2011; Roila 2016).

Colorectal cancer (advanced): IV: 85 mg/m^2 every 2 weeks until disease progression or unacceptable toxicity (in combination with infusional fluorouracil/leucovorin)

Colon cancer, stage III (adjuvant therapy): IV: 85 mg/m^2 every 2 weeks for 6 months (12 cycles; in combination with infusional fluorouracil/leucovorin)

Colon/colorectal cancer (off-label doses or combinations): IV: 85 mg/m^2/dose on days 1, 15, and 29 of an 8-week treatment cycle in combination with fluorouracil/leucovorin (Kuebler 2007) **or** 85 mg/m^2 every 2 weeks in combination with fluorouracil/leucovorin/irinotecan (Falcone 2007) **or** 130 mg/m^2 every 3 weeks in combination with capecitabine (Cassidy 2008; Haller 2011)

Biliary adenocarcinoma, advanced (off-label use): IV:

GEMOX regimen: 100 mg/m^2 on day 2 every 2 weeks (in combination with gemcitabine) until disease progression or unacceptable toxicity (Andre 2004) **or**

CAPOX regimen: 130 mg/m^2 on day 1 every 3 weeks (in combination with capecitabine) until disease progression or unacceptable toxicity (Nehls 2008)

Chronic lymphocytic leukemia, fludarabine-refractory (off-label use): IV: OFAR regimen: 25

mg/m^2/day for 4 days every 4 weeks (in combination with fludarabine, cytarabine, and rituximab) for up to 6 cycles (Tsimberidou 2008)

Esophageal/gastric cancers (off-label use): IV: 130 mg/m^2 on day 1 every 3 weeks (in combination with epirubicin and either capecitabine or fluorouracil) for up to 8 cycles (Cunningham 2008) **or** 85 mg/m^2 on day 1 every 2 weeks (in combination with docetaxel, leucovorin, and fluorouracil) for up to 8 cycles (Al-Batran 2008) **or** 85 mg/m^2 on day 1 every 2 weeks (in combination with leucovorin and fluorouracil; FOLFOX4) for 6 cycles (Conroy 2010)

or

Gastric cancer: IV: 130 mg/m^2 on day 1 every 3 weeks (in combination with capecitabine) for 8 cycles (Bang 2012)

Neuroendocrine tumors (carcinoid), refractory (off-label use): IV: 130 mg/m^2 on day 1 every 3 weeks (in combination with capecitabine) for up to 6 cycles (Bajetta 2007)

Non-Hodgkin lymphoma, relapsed/refractory (off-label use): IV: 100 mg/m^2 on day 1 every 3 weeks (in combination with gemcitabine and rituximab) (Lopez 2008; Rodriguez 2007)

Ovarian cancer, advanced (off-label use): IV: 130 mg/m^2 once every 3 weeks until disease progression or unacceptable toxicity (Dieras 2002; Piccart 2000)

Pancreatic cancer, advanced (off-label use): IV: 85 mg/m^2 every 2 weeks (in combination with fluorouracil, leucovorin, and irinotecan; FOLFIRINOX regimen) for up to 6 months (Conroy 2011) **or** 110 to 130 mg/m^2 on day 1 every 3 weeks (in combination with capecitabine) until disease progression or unacceptable toxicity (Xiong 2008)

Testicular cancer, refractory (off-label use): IV: 130 mg/m^2 every 3 weeks in combination with gemcitabine (De Georgi 2006; Kollmannsberger 2004; Pectasides 2004) **or** 130 mg/m^2 on day 1 every 3 weeks (in combination with gemcitabine and paclitaxel) for up to 8 cycles (Bokemeyer 2008)

Unknown primary cancer, recurrent or refractory (off-label use): IV: 130 mg/m^2 on day 1 of a 21-day cycle (in combination with capecitabine) for 6 cycles or may continue until clinical benefit no longer realized (Hainsworth 2010)

Dosing: Geriatric

No dosage adjustment necessary. Refer to adult dosing.

Dosing: Renal Impairment

Manufacturer's US labeling:

CrCl ≥30 mL/minute: No dosage adjustment necessary.

CrCl <30 mL/minute: Reduce dose from 85 mg/m^2 to 65 mg/m^2.

Alternate recommendations: CrCl ≥20 mL/minute: In a study with a limited number of patients with mild to moderate impairment, defined by the authors as CrCl 20 to 59 mL/minute (determined using 24-hour urine collection), oxaliplatin was well tolerated, suggesting a dose reduction may not be necessary in patients with CrCl ≥20 mL/minute receiving every-3-week dosing (dose range: 80 to 130 mg/m^2 every 3 weeks) (Takimoto 2003).

Dosing: Hepatic Impairment Mild, moderate, or severe impairment: No dosage adjustment necessary (Doroshow 2003; Synold 2007).

Dosing: Obesity *ASCO Guidelines for appropriate chemotherapy dosing in obese adults with cancer:* Utilize patient's actual body weight (full weight) for calculation of body surface area- or weight-based dosing, particularly when the intent of therapy is curative; manage regimen-related toxicities in the same manner as for nonobese patients; if a dose reduction is utilized due to toxicity, consider resumption of full weight-based dosing with subsequent cycles, especially if cause of toxicity (eg, hepatic or renal impairment) is resolved (Griggs 2012).

Dosing: Adjustment for Toxicity **Acute toxicities:** Longer infusion time (6 hours) may mitigate acute toxicities (eg, pharyngolaryngeal dysesthesia).

Neurosensory events:

Persistent (>7 days) grade 2 neurosensory events:

Adjuvant treatment of stage III colon cancer: Reduce dose to 75 mg/m^2

Advanced colorectal cancer: Reduce dose to 65 mg/m^2

Consider withholding oxaliplatin for grade 2 neuropathy lasting >7 days despite dose reduction.

Persistent (>7 days) grade 3 neurosensory events: Consider discontinuing oxaliplatin.

Gastrointestinal toxicity (grade 3/4) occurring despite prophylactic treatment:

Adjuvant treatment of stage III colon cancer: Delay next dose until recovery from toxicity, then reduce dose to 75 mg/m^2.

Advanced colorectal cancer: Delay next dose until recovery from toxicity, then reduce dose to 65 mg/m^2.

Hematologic toxicity (grade 4 neutropenia [Canadian labeling: grade 3 or 4 neutropenia], febrile neutropenia, or grade 3/4 thrombocytopenia):

Adjuvant treatment of stage III colon cancer: Delay next dose until neutrophils recover to ≥1500/mm^3 and platelets recover to ≥75,000/mm^3, then reduce dose to 75 mg/m^2.

Advanced colorectal cancer: Delay next dose until neutrophils recover to ≥1500/mm^3 and platelets recover to ≥75,000/mm^3, then reduce dose to 65 mg/m^2.

Pulmonary toxicity (unexplained respiratory symptoms including nonproductive cough, dyspnea, crackles, pulmonary infiltrates): Discontinue until interstitial lung disease or pulmonary fibrosis have been excluded.

Rhabdomyolysis: Discontinue for signs/symptoms of rhabdomyolysis.

Sepsis or septic shock: Withhold treatment.

Dosage Forms Excipient information presented when available (limited, particularly for generics); consult specific product labeling. [DSC] = Discontinued product

Solution, Intravenous [preservative free]:

Eloxatin: 50 mg/10 mL (10 mL [DSC]); 100 mg/20 mL (20 mL [DSC]); 200 mg/40 mL (40 mL [DSC])

Generic: 50 mg/10 mL (10 mL); 100 mg/20 mL (20 mL)

Solution Reconstituted, Intravenous [preservative free]:

Generic: 50 mg (1 ea); 100 mg (1 ea)

Generic Equivalent Available (US) Yes

Administration Administer as IV infusion over 2 hours; extend infusion time to 6 hours for acute toxicities. Flush infusion line with D_5W prior to administration of any concomitant medication. Avoid mucositis prophylaxis with ice chips, exposure to cold temperatures, or consumption of cold food/beverages during or within hours after oxaliplatin infusion (may exacerbate acute neurological symptoms). Do not use needles or administration sets containing aluminum. When used in combination with a fluoropyrimidine (eg, 5-FU), infuse oxaliplatin first.

Oxaliplatin is associated with a moderate emetic potential; antiemetics are recommended to prevent nausea and vomiting (Basch 2011; Dupuis 2011; Roila 2016).

Irritant with vesicant-like properties; ensure proper needle or catheter placement prior to and during infusion. Avoid extravasation; monitor IV site for redness, swelling, or pain.

Extravasation management: If extravasation occurs, stop infusion immediately and disconnect (leave cannula/needle in place); gently aspirate extravasated solution (do **NOT** flush the line); remove needle/cannula; elevate extremity. Information conflicts regarding use of warm or cold compresses. Cold compresses could potentially precipitate or exacerbate peripheral neuropathy (de Lemos 2005).

Hazardous Drugs Handling Considerations

Hazardous agent (NIOSH 2016 [group 1]).

Use appropriate precautions for receiving, handling, administration, and disposal. Gloves (single) should be worn during receiving, unpacking, and placing in storage.

NIOSH recommends double gloving, a protective gown, ventilated engineering controls (a class II biological safety cabinet or a compounding aseptic containment isolator), and closed system transfer devices (CSTDs) for preparation. Double gloving, a gown, and (if dosage form allows) CSTDs are required during administration (NIOSH 2016).

Use

Colon cancer, stage III (adjuvant therapy): Adjuvant treatment of stage III colon cancer (in combination with infusional fluorouracil and leucovorin) after complete resection of primary tumor.

Colorectal cancer, advanced: Treatment of advanced colorectal cancer (in combination with infusional

fluorouracil and leucovorin).

Use: Off-Label

Biliary adenocarcinoma, advanced; Chronic lymphocytic leukemia, refractory; Esophageal cancer; Gastric cancer; Neuroendocrine tumors (carcinoid), refractory; Non Hodgkin lymphoma, relapsed/refractory; Ovarian cancer, advanced; Pancreatic cancer, advanced or metastatic; Testicular cancer, refractory; Unknown primary cancer, recurrent or refractory

Medication Safety Issues

Sound-alike/look-alike issues:

Oxaliplatin may be confused with Aloxi, carboplatin, cisplatin

High alert medication:

This medication is in a class the Institute for Safe Medication Practices (ISMP) includes among its list of drug classes which have a heightened risk of causing significant patient harm when used in error.

Adverse Reactions Percentages reported with monotherapy.

>10%:

Central nervous system: Peripheral neuropathy (may be dose limiting; 76% to 92%; acute 65%; grades 3/4: 5%; persistent 43%; grades 3/4: 3%), fatigue (61%), pain (14%), headache (13%), insomnia (11%)

Gastrointestinal: Nausea (64%), diarrhea (46%), vomiting (37%), abdominal pain (31%), constipation (31%), anorexia (20%), stomatitis (14%)

Hematologic & oncologic: Anemia (64%; grades 3/4: 1%), thrombocytopenia (30%; grades 3/4: 3%), leukopenia (13%)

Hepatic: Increased serum AST (54%; grades 3/4: 4%), increased serum ALT (36%; grades 3/4: 1%), increased serum bilirubin (13%; grades 3/4: 5%)

Neuromuscular & skeletal: Back pain (11%)

Respiratory: Dyspnea (13%), cough (11%)

Miscellaneous: Fever (25%)

1% to 10%:

Cardiovascular: Edema (10%), chest pain (5%), peripheral edema (5%), flushing (3%), thromboembolism (2%)

Central nervous system: Rigors (9%), dizziness (7%)

Dermatologic: Skin rash (5%), alopecia (3%), palmar-plantar erythrodysesthesia (1%)

Endocrine & metabolic: Dehydration (5%), hypokalemia (3%)

Gastrointestinal: Dyspepsia (7%), dysgeusia (5%), flatulence (3%), hiccups (2%), mucositis (2%), dysphagia (acute 1% to 2%), gastroesophageal reflux disease (1%)

Genitourinary: Dysuria (1%)

Hematologic & oncologic: Neutropenia (7%)

Hypersensitivity: Hypersensitivity reaction (3%; includes urticaria, pruritus, facial flushing, shortness of breath, bronchospasm, diaphoresis, hypotension, syncope: grades 3/4: 2% to 3%)

Local: Injection site reaction (9%; redness, swelling, pain)

Neuromuscular & skeletal: Arthralgia (7%)

Ocular: Abnormal lacrimation (1%)

Renal: Increased serum creatinine (5% to 10%)

Respiratory: Upper respiratory tract infection (7%), rhinitis (6%), epistaxis (2%), pharyngitis (2%), pharyngolaryngeal dysesthesia (grades 3/4: 1% to 2%)

<1%, postmarketing, and/or case reports (reported with mono- and combination therapy): Abnormal gait, acute renal failure, anaphylaxis, anaphylactic shock, anaphylactoid reaction, angioedema, aphonia, ataxia, blepharoptosis, cerebral hemorrhage, colitis, cranial nerve palsy, decreased deep tendon reflex, deafness, decreased visual acuity, diplopia, dysarthria, eosinophilic pneumonitis, fasciculations, febrile neutropenia, hematuria, hemolysis, hemolytic anemia (immuno-allergic), hemolytic-uremic syndrome, hemorrhage, hepatic failure, hepatic fibrosis (perisinusoidal), hepatic sinusoidal obstruction syndrome (SOS; veno-occlusive disease), hepatitis, hepatotoxicity, hypertension, hypomagnesemia, hypoxia, idiopathic noncirrhotic portal hypertension (nodular regenerative hyperplasia), increased INR, increased serum alkaline phosphatase, infusion related reaction (extravasation [including necrosis]), interstitial nephritis (acute), interstitial pulmonary disease, intestinal obstruction, laryngospasm, Lhermittes' sign, metabolic acidosis, muscle spasm, myoclonus, neutropenic enterocolitis, neutropenic infection (sepsis), optic neuritis, pancreatitis, prolonged Q-T interval on ECG, prolonged prothrombin time, pulmonary fibrosis, purpura, rectal hemorrhage, renal tubular necrosis, reversible posterior leukoencephalopathy syndrome (RPLS), rhabdomyolysis, seizure, sepsis, septic shock, temporary vision loss, thrombocytopenia (immuno-allergic), torsades de pointes, trigeminal neuralgia, ventricular arrhythmia, visual field loss, voice disorder

Contraindications

Hypersensitivity to oxaliplatin, other platinum-containing compounds, or any component of the formulation

Canadian labeling: Additional contraindications (not in the US labeling): Pregnancy, breast-feeding; severe renal impairment (CrCl <30 mL/minute)

Warnings/Precautions

Concerns related to adverse effects:

• Bone marrow suppression: Grade 3 and 4 neutropenia occurs commonly with oxaliplatin in combination with fluorouracil and leucovorin; sepsis, neutropenic sepsis, and septic shock have been reported with oxaliplatin (some fatal). Delay oxaliplatin treatment until neutrophils are ≥1500/mm^3; withhold treatment for sepsis or septic shock. Reduce the dose after recovery from grade 4 neutropenia or neutropenic fever.

• Cardiotoxicity: QT prolongation and ventricular arrhythmias, including fatal torsades de pointes have been reported in postmarketing surveillance. ECG monitoring is recommend in patients with heart failure, bradyarrhythmias, concomitant medications known to cause QT prolongation (including class Ia and III antiarrhythmics), and electrolyte abnormalities. Avoid use in patients with congenital long QT syndrome. Monitor potassium and magnesium prior to and periodically during treatment; correct hypokalemia and hypomagnesemia prior to treatment initiation.

• Extravasation: Oxaliplatin is an irritant with vesicant-like properties; ensure proper needle or catheter placement prior to and during infusion; avoid extravasation.

• GI toxicity: Oxaliplatin is associated with a moderate emetic potential; antiemetics are recommended to prevent nausea and vomiting (Basch 2011; Dupuis 2011; Roila 2016). Fluorouracil and leucovorin are associated with GI adverse events; the incidence of GI toxicity is increased when oxaliplatin is administered with fluorouracil and leucovorin. Mucositis, stomatitis, GI bleeding, and GI obstruction have been reported.

• Hypersensitivity/anaphylactoid reactions: **[US Boxed Warning]: Anaphylactic reactions have been reported with oxaliplatin (may occur within minutes of administration); symptoms may be managed with epinephrine, corticosteroids, antihistamines,** and discontinuation; oxygen and bronchodilators have also been used (Kim 2009). Grade 3 or 4 hypersensitivity has been observed. Allergic reactions are similar to reactions reported with other platinum analogs and may occur with any cycle. Reactions typically occur after multiple cycles; in retrospective reviews, reaction occurred at a median of 7 to 9 cycles, with an onset of 5 to 70 minutes (Kim 2009; Polyzos 2009). Symptoms may include bronchospasm (rare), erythema, hypotension (rare), pruritus, rash, and/or urticaria; previously-untreated patients have also experienced flushing, diaphoresis, diarrhea, shortness of breath, chest pain, hypotension, syncope, and disorientation. According to the manufacturer, rechallenge is contraindicated (deaths due to anaphylaxis have been associated with platinum derivatives). In patients rechallenged after mild hypersensitivity, reaction recurred at a higher level of severity; for patients with severe hypersensitivity, rechallenge (with 2 to 3 days of antihistamine and corticosteroid premedication, and prolongation of infusion time) allowed for 2 to 4 additional oxaliplatin cycles; however, rechallenge was not feasible in nearly two-thirds of patients due to the severity of the initial reaction (Polyzos 2009).

• Hepatotoxicity: Hepatotoxicity (including rare cases of hepatitis and hepatic failure) has been reported. Liver biopsy has revealed peliosis, nodular regenerative hyperplasia, sinusoidal alterations, perisinusoidal fibrosis, and veno-occlusive lesions. The presence of hepatic vascular disorders (including veno-occlusive disease) should be considered, especially in individuals developing portal hypertension or who present with increased liver function tests.

• Neuropathy: Two different types of peripheral sensory neuropathy may occur: The first type of neuropathy is an acute presentation (within hours to 1 to 2 days), reversible (resolves within 14 days), with primarily peripheral symptoms that are often exacerbated by cold (may include pharyngolaryngeal dysesthesia); avoid mucositis prophylaxis with ice chips, exposure to cold temperatures, or consumption of cold food/beverages during or within hours after oxaliplatin infusion

(may exacerbate symptoms); this acute neuropathy commonly recurs with subsequent doses. Cold-triggered neuropathy may last up to 7 days after oxaliplatin administration (Grothey 2011). The second type of neuropathy is a more persistent (>14 days) presentation that often interferes with daily activities (eg, writing, buttoning, swallowing); these symptoms may improve in some patients upon discontinuing treatment. In a retrospective evaluation of patients treated with oxaliplatin for colorectal cancer, the incidence of peripheral sensory neuropathy was similar between diabetic and nondiabetic patients (Ramanathan 2010). Several retrospective studies (as well as a small, underpowered randomized trial) have suggested calcium and magnesium infusions before and after oxaliplatin administration may reduce incidence of cumulative sensory neuropathy; however, a recent abstract of an ongoing randomized, placebo-controlled, double-blind study in patients with colorectal cancer suggests there is no benefit of calcium and magnesium in preventing sensory neuropathy or in decreasing oxaliplatin discontinuation rates (Loprinzi 2013).

• Pulmonary toxicity: May cause pulmonary fibrosis (may be fatal); withhold treatment for unexplained pulmonary symptoms (eg, crackles, dyspnea, nonproductive cough, pulmonary infiltrates) until interstitial lung disease or pulmonary fibrosis are excluded.

• Reversible posterior leukoencephalopathy syndrome: Cases of reversible posterior leukoencephalopathy syndrome (RPLS) have been reported. Signs/symptoms include headache, mental status changes, seizure, blurred vision, blindness and/or other vision changes; may be associated with hypertension. Diagnosis is confirmed with brain imaging.

• Rhabdomyolysis: Rhabdomyolysis (including fatal cases) has been reported with oxaliplatin. Discontinue if signs/symptoms of rhabdomyolysis occur.

Disease-related concerns:

• Renal impairment: Use with caution in patients with renal impairment; increased toxicity may occur. Reduce initial dose in severe impairment.

Concurrent drug therapy issues:

• Drug-drug interactions: Potentially significant interactions may exist, requiring dose or frequency adjustment, additional monitoring, and/or selection of alternative therapy. Consult drug interactions database for more detailed information.

Special populations:

• Elderly: Elderly patients are more sensitive to adverse events, particularly diarrhea, dehydration, hypokalemia, leukopenia, fatigue, and syncope.

Other warnings/precautions:

• Administration: Oxaliplatin is for IV administration. Administration via the intraperitoneal route (not an approved administration route) is associated with peritoneal hemorrhage and hemorrhagic complications (Charrier 2016).

Metabolism/Transport Effects **Substrate** of OCT2

Drug Interactions

(For additional information: Launch drug interactions program) Lexicomp®

BCG (Intravesical): Immunosuppressants may diminish the therapeutic effect of BCG (Intravesical). *Risk X: Avoid combination*

BCG (Intravesical): Myelosuppressive Agents may diminish the therapeutic effect of BCG (Intravesical). *Risk X: Avoid combination*

BuPROPion: May increase the serum concentration of OCT2 Substrates. *Risk C: Monitor therapy*

CloZAPine: Myelosuppressive Agents may enhance the adverse/toxic effect of CloZAPine. Specifically, the risk for neutropenia may be increased. *Risk C: Monitor therapy*

Coccidioides immitis Skin Test: Immunosuppressants may diminish the diagnostic effect of Coccidioides immitis Skin Test. *Risk C: Monitor therapy*

Deferiprone: Myelosuppressive Agents may enhance the neutropenic effect of Deferiprone. *Risk X: Avoid combination*

Denosumab: May enhance the adverse/toxic effect of Immunosuppressants. Specifically, the risk for serious infections may be increased. *Risk C: Monitor therapy*

Dipyrone: May enhance the adverse/toxic effect of Myelosuppressive Agents. Specifically, the risk for agranulocytosis and pancytopenia may be increased *Risk X: Avoid combination*

Echinacea: May diminish the therapeutic effect of Immunosuppressants. *Risk D: Consider therapy modification*

Fingolimod: Immunosuppressants may enhance the immunosuppressive effect of Fingolimod. Management: Avoid the concomitant use of fingolimod and other immunosuppressants when possible. If combined, monitor patients closely for additive immunosuppressant effects (eg, infections). *Risk D: Consider therapy modification*

Fosphenytoin-Phenytoin: Platinum Derivatives may decrease the serum concentration of Fosphenytoin-Phenytoin. *Risk C: Monitor therapy*

Highest Risk QTc-Prolonging Agents: QTc-Prolonging Agents (Indeterminate Risk and Risk Modifying) may enhance the QTc-prolonging effect of Highest Risk QTc-Prolonging Agents. Management: Avoid such combinations when possible. Use should be accompanied by close monitoring for evidence of QT prolongation or other alterations of cardiac rhythm. *Risk D: Consider therapy modification*

Leflunomide: Immunosuppressants may enhance the adverse/toxic effect of Leflunomide. Specifically, the risk for hematologic toxicity such as pancytopenia, agranulocytosis, and/or thrombocytopenia may be increased. Management: Consider not using a leflunomide loading dose in patients receiving other immunosuppressants. Patients receiving both leflunomide and another immunosuppressant should be monitored for bone marrow suppression at least monthly. *Risk D: Consider therapy modification*

Lenograstim: Antineoplastic Agents may diminish the therapeutic effect of Lenograstim. *Risk D: Consider therapy modification*

MiFEPRIStone: May enhance the QTc-prolonging effect of QTc-Prolonging Agents (Indeterminate Risk and Risk Modifying). Management: Though the drugs listed here have uncertain QT-prolonging effects, they all have some possible association with QT prolongation and should generally be avoided when possible. *Risk D: Consider therapy modification*

Moderate Risk QTc-Prolonging Agents: QTc-Prolonging Agents (Indeterminate Risk and Risk Modifying)

may enhance the QTc-prolonging effect of Moderate Risk QTc-Prolonging Agents. *Risk C: Monitor therapy*

Natalizumab: Immunosuppressants may enhance the adverse/toxic effect of Natalizumab. Specifically, the risk of concurrent infection may be increased. *Risk X: Avoid combination*

Nivolumab: Immunosuppressants may diminish the therapeutic effect of Nivolumab. *Risk D: Consider therapy modification*

Ocrelizumab: May enhance the immunosuppressive effect of Immunosuppressants. *Risk C: Monitor therapy*

Palifermin: May enhance the adverse/toxic effect of Antineoplastic Agents. Specifically, the duration and severity of oral mucositis may be increased. Management: Do not administer palifermin within 24 hours before, during infusion of, or within 24 hours after administration of myelotoxic chemotherapy. *Risk D: Consider therapy modification*

Pimecrolimus: May enhance the adverse/toxic effect of Immunosuppressants. *Risk X: Avoid combination*

Promazine: May enhance the myelosuppressive effect of Myelosuppressive Agents. *Risk C: Monitor therapy*

Roflumilast: May enhance the immunosuppressive effect of Immunosuppressants. *Risk D: Consider therapy modification*

Sipuleucel-T: Immunosuppressants may diminish the therapeutic effect of Sipuleucel-T. *Risk C: Monitor therapy*

Tacrolimus (Topical): May enhance the adverse/toxic effect of Immunosuppressants. *Risk X: Avoid combination*

Taxane Derivatives: Platinum Derivatives may enhance the myelosuppressive effect of Taxane Derivatives. Administer Taxane derivative before Platinum derivative when given as sequential infusions to limit toxicity. *Risk D: Consider therapy modification*

Tertomotide: Immunosuppressants may diminish the therapeutic effect of Tertomotide. *Risk C: Monitor therapy*

Tofacitinib: Immunosuppressants may enhance the immunosuppressive effect of Tofacitinib. Management: Concurrent use with antirheumatic doses of methotrexate or nonbiologic disease modifying antirheumatic drugs (DMARDs) is permitted, and this warning seems particularly focused on more potent immunosuppressants. *Risk X: Avoid combination*

Topotecan: Platinum Derivatives may enhance the adverse/toxic effect of Topotecan. *Risk D: Consider therapy modification*

Trastuzumab: May enhance the neutropenic effect of Immunosuppressants. *Risk C: Monitor therapy*

Vaccines (Inactivated): Immunosuppressants may diminish the therapeutic effect of Vaccines (Inactivated). Management: Vaccine efficacy may be reduced. Complete all age-appropriate vaccinations at least 2 weeks prior to starting an immunosuppressant. If vaccinated during immunosuppressant therapy, revaccinate at least 3 months after immunosuppressant discontinuation. *Risk D: Consider therapy modification*

Vaccines (Live): Immunosuppressants may enhance the adverse/toxic effect of Vaccines (Live). Immunosuppressants may diminish the therapeutic effect of Vaccines (Live). Management: Avoid use of live organism vaccines with immunosuppressants; live-attenuated vaccines should not be given for at least 3 months after immunosuppressants. *Risk X: Avoid combination*

Pregnancy Risk Factor

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Pregnancy Implications

Adverse events were observed in animal reproduction studies at one-tenth the equivalent human dose. Women of childbearing potential should be advised to avoid pregnancy and use effective contraception during treatment. Males and females of reproductive potential desiring children should consider fertility preservation prior to therapy (Levi 2015; O'Neil 2011).

Breast-Feeding Considerations

It is not known if oxaliplatin is present in breast milk. Due to the potential for serious adverse reactions in the breastfed infant, a decision should be made to discontinue breast-feeding or to discontinue oxaliplatin taking into account the importance of treatment to the mother.

Monitoring Parameters

CBC with differential, blood chemistries, including serum creatinine, ALT, AST, and bilirubin (prior to each cycle), electrolytes, including potassium and magnesium (prior to and periodically during treatment); INR and prothrombin time (in patients on oral anticoagulant therapy); neurologic evaluation prior to each dose and periodically thereafter; hypersensitivity; respiratory effects; RPLS

Mechanism of Action

Oxaliplatin, a platinum derivative, is an alkylating agent. Following intracellular hydrolysis, the platinum compound binds to DNA forming cross-links which inhibit DNA replication and transcription, resulting in cell death. Cytotoxicity is cell-cycle nonspecific.

Pharmacodynamics/Kinetics

Distribution: V_d: 440 L

Protein binding: >90% primarily albumin and gamma globulin (irreversible binding to platinum)

Metabolism: Nonenzymatic (rapid and extensive), forms active and inactive derivatives

Half-life elimination:

Children: Oxaliplatin ultrafilterable platinum (terminal): Median: 293 hours; range: 187 to 662 hours (Beaty 2010)

Adults: Oxaliplatin ultrafilterable platinum: Distribution: Alpha phase: 0.4 hours; Beta phase: 16.8 hours; Terminal: 391 hours

Excretion: Urine (~54%); feces (~2%)

Pricing: US

Solution (Oxaliplatin Intravenous)

50 mg/10 mL (10 mL): $103.96

100 mg/20 mL (20 mL): $207.90

Solution (reconstituted) (Oxaliplatin Intravenous)

50 mg (1): $120.00

100 mg (1): $240.00

Disclaimer: The pricing data provide a representative AWP and/or AAWP price from a single manufacturer of the brand and/or generic product, respectively. The pricing data should be used for benchmarking purposes only, and as such should not be used to set or adjudicate any prices for reimbursement or purchasing functions. Pricing data is updated monthly.

International Brand Names Ai Heng (CN); Crisapla (UY); Dacotin (IN); Dacplat (AR); Eloxatin (AE, AT, AU, BE, BG, BH, BR, CH, CL, CN, CO, CR, CY, CZ, DE, DK, DO, EE, ES, FI, GB, GT, HK, HN, HR, ID, IE, IL, IT, JO, KR, KW, LU, MT, MX, MY, NI, NL, NZ, PA, PE, PH, PL, PT, QA, RO, SA, SE, SG, SI, SV, TH, TR, TW, VN); Eloxatine (FR, LB, RU, VE); Elplat (JP); Entia (TH); Henplatin (PH); Kebir (PY); Liplatin (KR); Loxatron (LK); Lyoxatin (VN); Meslatin (PH); Olatin (TW); Olipcis (MX); Oplat (CO); Oxalatin (AU); Oxalee (PH); Oxalem (PH); Oxalip (TH, TW); Oxalitin (KR); Oxalotin (BD); Oxaltic (AR); Oxaltie (EC, LB, LK, PK); Oxapla (KR); Oxaplat (TH); Oxaplin (MY); Oxerin (CO); Oxitan (TH, ZW); Oxitel (PH); Oxol (LK, TH, ZW); Platinox (PH); Pleoxtin (KR); Plusplatin (EC); Ranxor (SG); Rexta (ID); Rezykol (UA); Riptam (MX); Sanroxa (ID); Sindoxplatin (PH); Sinoxal (HR); Vizoksal (UA); X-Plat (LK); Xaliplat (PY); Xaloplat (BD); Zildox (PH)

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