**Tocilizumab (Lexi-Drugs)**

**ALERT: US Boxed Warning**

**Risk of serious infections:**

Patients treated with tocilizumab are at an increased risk for developing serious infections that may lead to hospitalization or death. Most patients who developed these infections were taking concomitant immunosuppressants, such as methotrexate or corticosteroids.

If a serious infection develops, interrupt tocilizumab until the infection is controlled.

Reported infections include:

- **Active tuberculosis**, which may present with pulmonary or extrapulmonary disease. Patients should be tested for latent tuberculosis before tocilizumab use and during therapy. Treatment for latent infection should be initiated prior to tocilizumab use.

- **Invasive fungal infections**, including candidiasis, aspergillosis, and pneumocystis. Patients with invasive fungal infections may present with disseminated rather than localized disease.

- **Bacterial, viral, and other infections caused by opportunistic pathogens**.

The risks and benefits of treatment with tocilizumab should be carefully considered prior to initiating therapy in patients with chronic or recurrent infection.

Patients should be closely monitored for the development of signs and symptoms of infection during and after treatment with tocilizumab, including the possible development of tuberculosis in patients who tested negative for latent tuberculosis infection prior to initiating therapy.

**Pronunciation**

(toe si LIZ oo mab)

**Brand Names: US**

- Actemra; Actemra ACTPen

**Brand Names: Canada**

- Actemra

**Pharmacologic Category**

- Antirheumatic, Disease Modifying; Interleukin-6 Receptor Antagonist; Monoclonal Antibody

**Dosing: Adult**

**COVID-19, hospitalized patients**
COVID-19, hospitalized patients: Note: For use in hospitalized patients with significant oxygen requirements (eg, high-flow oxygen, noninvasive ventilation, mechanical ventilation, or extracorporeal membrane oxygenation) and those with lower but increasing oxygen requirements and evidence of systemic inflammation (Ref). Do not initiate if ANC <1,000/mm³, platelets <50,000/mm³, or ALT or AST >10 times ULN.

IV: 8 mg/kg once (maximum dose: 800 mg) as part of an appropriate combination regimen (Ref). If clinical signs or symptoms worsen or do not improve, a second dose may be considered ≥8 hours after the first dose (Ref).

Cytokine release syndrome

Cytokine release syndrome:

Bi-specific T-cell engaging therapy-associated (off-label use): Note: Some experts reserve for patients with severe cytokine release syndrome (CRS) who do not respond to initial measures.

IV: 8 mg/kg once (maximum dose: 800 mg [based on chimeric antigen receptor T-cell CRS dosing]); if clinical improvement does not occur within 8 to 24 hours after, up to 3 additional doses may be administered (with at least an 8-hour interval between consecutive doses) (Ref).

Chimeric antigen receptor T-cell therapy-associated: IV: 8 mg/kg once (maximum dose: 800 mg). May give with or without glucocorticoids (Ref); some experts suggest using in combination with a glucocorticoid for grades 3 and 4 CRS (Ref). If clinical improvement does not occur after the first dose, up to 3 additional doses may be administered (with at least an 8-hour interval between consecutive doses) (Ref).

Giant cell arteritis

Giant cell arteritis (adjunctive agent):

Note: Do not initiate if ANC is <2,000/mm³, platelets are <100,000/mm³, or if ALT or AST are >1.5 times ULN. If a patient develops a serious infection, interrupt therapy until the infection is controlled.

IV: 6 mg/kg (maximum dose: 600 mg) once every 4 weeks in combination with glucocorticoids (Ref); some experts use 8 mg/kg once every 4 weeks in combination with glucocorticoids (or as monotherapy following discontinuation of glucocorticoids) and do not exceed 800 mg per dose (Ref).

SUBQ: 162 mg once every week; based on clinical considerations, may consider 162 mg once every other week; to be administered in combination with glucocorticoids (or as monotherapy following discontinuation of glucocorticoids) (Ref).

Neuromyelitis optica, relapse prevention

Neuromyelitis optica, relapse prevention (alternative agent) (off-label use):
Note: For long-term therapy to prevent attacks; optimal immunotherapy selection has not been established (Ref). Do not initiate if ANC is <2,000/mm³, platelets are <100,000/mm³, or if ALT or AST are >1.5 times ULN. If a patient develops a serious infection, interrupt therapy until the infection is controlled.

IV: 8 mg/kg once every 4 weeks (Ref); maximum dose has not been established; some experts do not exceed 800 mg per dose (Ref).

Rheumatoid arthritis

Rheumatoid arthritis:

Note: May be administered in combination with methotrexate, another conventional synthetic disease-modifying antirheumatic drug, or as monotherapy if other treatment options are not tolerated (Ref). Patients should be under the care of a clinician experienced with use of tocilizumab for this condition. Do not initiate if ANC is <2,000/mm³, platelets are <100,000/mm³, or if ALT or AST are >1.5 times ULN. If a patient develops a serious infection, interrupt therapy until the infection is controlled.

IV: Initial: 4 mg/kg once every 4 weeks; may be increased to 8 mg/kg once every 4 weeks based on clinical response (maximum dose: 800 mg) (Ref).

SUBQ:

<100 kg: 162 mg once every other week; may increase to 162 mg once every week based on clinical response.

≥100 kg: 162 mg once every week.

Systemic sclerosis–associated interstitial lung disease

Systemic sclerosis (scleroderma)–associated interstitial lung disease (alternative agent):

Note: For initial and/or maintenance therapy in patients who cannot take other preferred agents. Do not initiate if ANC is <2,000/mm³, platelets are <100,000/mm³, or if ALT or AST are >1.5 times ULN. If a patient develops a serious infection, interrupt therapy until the infection is controlled.

SUBQ: 162 mg once every week (Ref).

Transitioning from IV therapy to SUBQ therapy: Administer the first SUBQ dose instead of the next scheduled IV dose.

Dosage adjustment for concomitant therapy: Significant drug interactions exist, requiring dose/frequency adjustment or avoidance. Consult drug interactions database for more information.

* See Dosage and Administration in AHFS Essentials for additional information.

Dosing: Older Adult

Refer to adult dosing; use with caution.
**Dosing: Altered Kidney Function: Adult**

The renal dosing recommendations are based upon the best available evidence and clinical expertise.
Senior Editorial Team: Bruce Mueller, PharmD, FCCP, FASN, FNKF; Jason Roberts, PhD, BPharm (Hons), B App Sc, FSHP, FISAC; Michael Heung, MD, MS.

CrCl \(\geq 30\) mL/minute: No dosage adjustment necessary.

CrCl <30 mL/minute: There are no dosage adjustments provided in the manufacturer's labeling (has not been studied); however, based on tocilizumab's molecular weight (148 kDa), it is unlikely to be significantly renally eliminated (Ref).

**Dosing: Hepatic Impairment: Adult**

*Hepatic impairment prior to treatment initiation*: There are no dosage adjustments provided in the manufacturer's labeling (has not been studied). Initiation of therapy in patients with active hepatic disease or hepatic impairment or with the following baseline ALT or AST elevation is usually not recommended:

ALT or AST >1.5 × ULN: rheumatoid arthritis (RA), giant cell arteritis, or systemic sclerosis (scleroderma)-associated interstitial lung disease (SSc-ILD).

ALT or AST >10 × ULN: COVID-19.

*Hepatotoxicity during treatment*: RA, giant cell arteritis, and SSc-ILD:

>1 to 3 × ULN: **Note**: Adjust concomitant disease-modifying antirheumatic drugs (for RA and SSc-ILD) or immunomodulatory agents (for GCA) as appropriate.

For persistent increases >1 to 3 × ULN, adjust dose as follows:

**Giant cell arteritis:**

**IV**: Interrupt therapy until ALT/AST have normalized.

**SUBQ**: Reduce injection frequency to every other week or interrupt therapy until ALT/AST have normalized; resume therapy at every other week, then increase frequency to every week as clinically appropriate.

**Rheumatoid arthritis:**

**IV**: Reduce dose to 4 mg/kg or interrupt therapy until ALT/AST have normalized.

**SUBQ**: Reduce injection frequency to every other week or interrupt therapy until ALT/AST have normalized; resume therapy at every other week, then increase frequency to every week as clinically appropriate.

**Systemic sclerosis (scleroderma)-associated interstitial lung disease: SUBQ**: Reduce injection frequency to every other week or interrupt therapy until ALT/AST have normalized; resume therapy at every other week, then increase frequency to every week as clinically appropriate.
>3 to 5 × ULN (confirmed with repeat testing): Interrupt until ALT/AST <3 × ULN and follow dosage adjustments recommended for liver enzyme abnormalities >1 to 3 × ULN. For persistent increases >3 × ULN, discontinue.

>5 × ULN: Discontinue.

**Dosing: Adjustment for Toxicity: Adult**

**Hypersensitivity (anaphylaxis or other clinically significant hypersensitivity reaction):** Stop immediately and discontinue permanently.

**Infection (serious infection, opportunistic infection, or sepsis):** Interrupt treatment until the infection is controlled.

**Rheumatoid arthritis, giant cell arteritis, and systemic sclerosis (scleroderma)-associated interstitial lung disease:**

**Neutropenia:**

ANC >1,000/mm³: Maintain dose.

ANC 500 to 1,000/mm³: Interrupt therapy; when ANC >1,000/mm³, may resume as follows:

**Giant cell arteritis:**

**IV:** 6 mg/kg IV once every 4 weeks.

**SUBQ:** 162 mg every other week, then may increase to every week as clinically appropriate.

**Rheumatoid arthritis:**

**IV:** 4 mg/kg once every 4 weeks, then may increase to 8 mg/kg once every 4 weeks as clinically appropriate.

**SUBQ:** 162 mg every other week, then may increase to every week as clinically appropriate.

**Systemic sclerosis (scleroderma)-associated interstitial lung disease: SUBQ:** 162 mg every other week, then may increase to every week as clinically appropriate.

ANC <500/mm³: Discontinue.

**Thrombocytopenia:**

Platelets 50,000 to 100,000/mm³: Interrupt therapy; when platelet count is >100,000/mm³, may resume as follows:

**Giant cell arteritis:**

**IV:** 6 mg/kg IV once every 4 weeks.

**SUBQ:** 162 mg every other week, then may increase to every week as clinically appropriate.

**Rheumatoid arthritis:**
**IV:** 4 mg/kg once every 4 weeks, then may increase to 8 mg/kg once every 4 weeks as clinically appropriate.

**SUBQ:** 162 mg every other week, then may increase to every week as clinically appropriate.

**Systemic sclerosis (scleroderma)-associated interstitial lung disease:** SUBQ: 162 mg every other week, then may increase to every week as clinically appropriate.

Platelets <50,000/mm³: Discontinue.

**Dosing: Pediatric**

**COVID-19, treatment**

**COVID-19 (hospitalized patients who are receiving systemic corticosteroids), treatment:**

**Note:** Emergency authorization in pediatric patients for COVID-19 is supported by efficacy data from adult patients and pediatric safety and dosing data extrapolated from other indications (Ref); very limited pediatric retrospective data are available (Ref). Not recommended for use in patients with ANC <1,000/mm³, platelets <50,000/mm³, or in patients with active hepatic disease or hepatic impairment (Ref).

Children ≥2 years and Adolescents: Very limited data available:

<30 kg: IV: 12 mg/kg/dose once; if clinical signs or symptoms worsen or do not improve after initial dose, may repeat dose once ≥8 hours after initial dose (Ref).

≥30 kg: IV: 8 mg/kg/dose once; maximum dose: 800 mg/dose; if clinical signs or symptoms worsen or do not improve after initial dose, may repeat dose once ≥8 hours after initial dose (Ref).

**Cytokine release syndrome due to chimeric antigen receptor T-cell therapy; severe or life-threatening**

**Cytokine release syndrome (CRS) due to chimeric antigen receptor T-cell therapy; severe or life-threatening:**

Children ≥2 years and Adolescents: May be used alone or in combination with corticosteroids.

<30 kg: IV: 12 mg/kg/dose once; if no clinical improvement after initial dose, may repeat dose every 8 hours for up to 3 additional doses.

≥30 kg: IV: 8 mg/kg/dose once; if no clinical improvement after initial dose, may repeat dose every 8 hours for up to 3 additional doses; maximum single dose: 800 mg/dose.

**Cytokine release syndrome due to bi-specific T-cell engaging therapy, severe or life-threatening**

**Cytokine release syndrome (CRS) due to bi-specific T-cell engaging therapy, severe or life-threatening:**Very limited data available (Ref); optimal dose not established.
Children ≥2 years and Adolescents: IV: 8 mg/kg/dose once; some experts suggest may repeat the dose if clinical improvement does not occur within 24 to 48 hours (Ref); dosing based on expert recommendations and a case report of a 7-year-old who received blinatumomab as part of a Phase I clinical trial and developed CRS; a single 8 mg/kg dose of tocilizumab was used (patient weight was not provided) and within 12 hours a significant clinical response was observed (Ref); other reports of experience in pediatric patients are lacking.

Polyarticular juvenile idiopathic arthritis

**Polyarticular juvenile idiopathic arthritis (PJIA):**

Children ≥2 years and Adolescents: **Note:** Do not initiate if ANC is <2,000/mm³, platelets are <100,000/mm³, or if ALT or AST are >1.5 times ULN. Dose adjustment should not be made based solely on a single-visit body weight measurement due to fluctuations in body weight. May be used as monotherapy or in combination with methotrexate. Variable routes of administration (IV, SUBQ) and dosing; use precaution to ensure appropriate dose/route.

**IV:**

<30 kg: 10 mg/kg/dose every 4 weeks.

≥30 kg: 8 mg/kg/dose every 4 weeks; maximum dose: 800 mg/dose.

**SUBQ:**

<30 kg: 162 mg/dose once every 3 weeks.

≥30 kg: 162 mg/dose once every 2 weeks.

Conversion from IV to SUBQ dosing: Administer the first SUBQ dose instead of the next scheduled IV dose.

Systemic juvenile idiopathic arthritis

**Systemic juvenile idiopathic arthritis (SJIA):**

Children ≥2 years and Adolescents: **Note:** Do not initiate if ANC is <2,000/mm³, platelets are <100,000/mm³, or if ALT or AST are >1.5 times ULN. Dose adjustment should not be made based solely on a single-visit body weight measurement due to fluctuations in body weight. May be used as monotherapy or in combination with methotrexate.

**IV:**

<30 kg: 12 mg/kg/dose every 2 weeks.

≥30 kg: 8 mg/kg/dose every 2 weeks; maximum dose: 800 mg/dose.

**SUBQ:**
<30 kg: 162 mg/dose once every 2 weeks.

≥30 kg: 162 mg/dose once every week.

Conversion from IV to SUBQ dosing: Administer the first SUBQ dose instead of the next scheduled IV dose.

**Dosage adjustment for concomitant therapy**: Significant drug interactions exist, requiring dose/frequency adjustment or avoidance. Consult drug interactions database for more information.

**Dosing adjustment for toxicity**:

**Polyarticular and systemic juvenile idiopathic arthritis (SJIA)**: Children ≥2 years and Adolescents:

*Non-hematologic toxicity*: Dose reductions have not been studied; however, dose interruptions are recommended for liver enzyme abnormalities (see Hepatic Impairment). In addition, consider interrupting or discontinuing concomitant methotrexate and/or other medications and hold tocilizumab dosing until the clinical situation has been assessed. For hypersensitivity reactions, stop the infusion immediately and discontinue permanently. For infection (serious, opportunistic, or sepsis), interrupt treatment until infection resolved.

*Hematologic toxicity*: Dose reductions have not been studied; however, dose interruptions are recommended for low neutrophil counts and low platelets similar to recommendations provided for adult rheumatoid arthritis patients (see the following):

Adults:

*Neutropenia*:

ANC >1,000/mm³: Maintain dose.

ANC 500 to 1,000/mm³: Interrupt therapy; when ANC >1,000/mm³, resume IV tocilizumab at 4 mg/kg (may increase to 8 mg/kg as clinically appropriate) or resume SUBQ tocilizumab at every other week dosing (increase frequency to every week as clinically appropriate).

ANC <500/mm³: Discontinue.

*Thrombocytopenia*:

Platelets 50,000 to 100,000/mm³: Interrupt therapy; when platelet count is >100,000/mm³, resume IV tocilizumab at 4 mg/kg (may increase to 8 mg/kg as clinically appropriate) or resume SUBQ tocilizumab at every other week dosing (increase frequency to every week as clinically appropriate).

Platelets <50,000/mm³: Discontinue.

**Dosing: Altered Kidney Function: Pediatric**

Children ≥2 years and Adolescents:

Mild to moderate renal impairment: No dosage adjustment required.

Severe renal impairment: There are no dosage adjustments provided in the manufacturer's labeling (not studied).
**Dosing: Hepatic Impairment: Pediatric**

**COVID-19:** Children ≥2 years and Adolescents: There are no dosage adjustments provided in the fact sheet for health care providers; not recommended for use in patients with active hepatic disease or hepatic impairment (ie, ALT/AST >10 times ULN). Decision for use should balance potential risks and benefits (Ref).

**Polyarticular and systemic juvenile idiopathic arthritis (SJIA):** Children ≥2 years and Adolescents:

Baseline: There are no dosage adjustments provided in the manufacturer's labeling (not studied); not recommended for use in patients with active hepatic disease or hepatic impairment.

Hepatotoxicity during therapy: Dose reductions have not been studied in pediatric patients; however, dose interruptions and reductions are recommended for liver enzyme abnormalities similar to those for adult rheumatoid arthritis patients.

ALT/AST >1 to 3 times ULN (persistent): Consider dose reduction or interrupt until ALT/AST have normalized.

ALT/AST >3 to 5 times ULN (confirmed with repeat testing): Interrupt until ALT/AST <3 times ULN and then reinitiate at a reduced dose. For persistent increase in ALT/AST >3 times ULN, discontinue.

ALT/AST >5 times ULN: Discontinue.

**Calculations**
- **Absolute Neutrophil Count**

**Use: Labeled Indications**

**COVID-19, hospitalized patients:** Treatment of COVID-19 in adult, hospitalized patients who are receiving systemic glucocorticoids and require supplemental oxygen, noninvasive or invasive mechanical ventilation, or extracorporeal membrane oxygenation.

**Cytokine release syndrome, chimeric antigen receptor T-cell therapy-associated:** Treatment of chimeric antigen receptor T-cell–induced severe or life-threatening cytokine release syndrome in patients ≥2 years of age.

**Giant cell arteritis:** Treatment of giant cell arteritis in adult patients.

**Polyarticular juvenile idiopathic arthritis:** Treatment of active polyarticular juvenile idiopathic arthritis in patients ≥2 years of age.

**Rheumatoid arthritis:** Treatment of adults with moderately to severely active rheumatoid arthritis who have had an inadequate response to one or more disease-modifying antirheumatic drugs.

**Systemic juvenile idiopathic arthritis:** Treatment of active systemic juvenile idiopathic arthritis in patients ≥2 years of age.

**Systemic sclerosis (scleroderma)-associated interstitial lung disease:** Indicated to slow the rate of decline in pulmonary function in adult patients with systemic sclerosis (scleroderma)-associated interstitial lung disease.
* See Uses in AHFS Essentials for additional information.

**Use: Off-Label: Adult**

**Cytokine release syndrome, bi-specific T-cell engaging therapy-associated**  
Level of Evidence [C]

Clinical experience suggests tocilizumab may be effective for the management of severe or life-threatening cytokine release syndrome associated with bi-specific T-cell engaging cancer treatment (Ref).

**Neuromyelitis optica, relapse prevention**  
Level of Evidence [C]

Data from a small, open-label, multicenter, randomized study suggest tocilizumab may be effective for the prevention of neuromyelitis optica relapse (Ref).

**Level of Evidence Definitions**

**Level of Evidence Scale**

**A** - Consistent evidence from well-performed randomized, controlled trials or overwhelming evidence of some other form (eg, results of the introduction of penicillin treatment) to support the off-label use. Further research is unlikely to change confidence in the estimate of benefit.

**B** - Evidence from randomized, controlled trials with important limitations (inconsistent results, methodological flaws, indirect or imprecise), or very strong evidence of some other research design. Further research (if performed) is likely to have an impact on confidence in the estimate of benefit and risk and may change the estimate.

**C** - Evidence from observational studies (eg, retrospective case series/reports providing significant impact on patient care), unsystematic clinical experience, or from potentially flawed randomized, controlled trials (eg, when limited options exist for condition). Any estimate of effect is uncertain.

**G** - Use has been substantiated by inclusion in at least one evidence-based or consensus-based clinical practice guideline.

**Clinical Practice Guidelines**

**COVID-19:**

IDSA, "Guidelines on the Treatment and Management of Patients With COVID-19"

NIH, "Coronavirus Disease 2019 (COVID-19) Treatment Guidelines"

**Giant Cell Arteritis:**


**Juvenile Idiopathic Arthritis:**
American College of Rheumatology, “2013 Update of the 2011 American College of Rheumatology Recommendations for the Treatment of Juvenile Idiopathic Arthritis,” 2013

Oncology:
SITC, “Clinical Practice Guideline on Immune Checkpoint Inhibitor-Related Adverse Events,” June 2021

Rheumatoid Arthritis:
ACR, “Guideline for the Treatment of Rheumatoid Arthritis,” July 2021
EULAR, “EULAR Recommendations for the Management of Rheumatoid Arthritis with Synthetic and Biological Disease-Modifying Antirheumatic Drugs: 2016 Update,” 2017

Administration: IV

Allow diluted solution for infusion to reach room temperature prior to administration; infuse over 60 minutes using a dedicated IV line. Do not infuse other agents through same IV line. Do not administer IV push or IV bolus. If additional doses are necessary for the management of cytokine release syndrome, the interval between doses should be at least 8 hours. Do not use if opaque particles or discoloration is visible.

Note: In response to tocilizumab use for COVID-19, the possibility that supplies of the IV formulation may become limited or unavailable prompted the manufacturer, Genentech, to evaluate use of the SUBQ formulation for IV administration. Though Genentech does not recommend the use of the SUBQ formulation diluted in IV bags for infusion, they have provided the following stability information; no information is available on safety and efficacy of the SUBQ formulation administered as an IV infusion (Ref):

No physicochemical incompatibilities were observed with the following investigational study conditions using tocilizumab prefilled syringes (PFS):

- Tocilizumab PFS diluted in a 100 mL NS IV bag made of materials such as PVC, polyolefin, polyethylene (PE), and polypropylene (PP). No NS was removed prior to injecting tocilizumab PFS.

- Two doses were tested: Low dose (1 PFS injected into a 100 mL NS bag, leading to a protein concentration of 1.6 mg/mL [total dose: 162 mg]) and high dose (6 PFS injected into a 100 mL NS bag leading to a concentration of 9.2 mg/mL [total dose: 972 mg]). Note: Tocilizumab doses exceeding 800 mg/infusion are not recommended in patients with rheumatoid arthritis or cytokine-release syndrome.

- IV solutions were stored for 24 hours at room temperature.

- Simulated infusions were conducted over 2 hours using an infusion rate of 19.6 mL/hour (infusion volume of 40 mL) with infusion administration sets made of PVC, PE, polybutadiene, or polyurethane equipped with a 0.2 or 0.22 micrometer polyethersulfone or polysulfone inline filter.

- Compatibility with other drugs and indwelling catheters, such as peripherally inserted central catheters and central venous access devices, were not tested.

Administration: Injectable Detail
pH: ~6.5 (intact vial)

**Administration: Subcutaneous**

Allow to reach room temperature (30 minutes for prefilled syringe; 45 minutes for autoinjector) prior to use. Do not use if particulate matter or discoloration is visible; solution should be clear and colorless to pale yellow. Administer the full amount in the prefilled syringe or autoinjector. Rotate injection sites; avoid injecting into moles, scars, or tender, bruised, red, or hard skin. After proper training, patients may self-inject, or the patient’s caregiver may administer tocilizumab.

Giant cell arteritis, rheumatoid arthritis, polyarticular juvenile idiopathic arthritis, systemic juvenile idiopathic arthritis: When transitioning from IV administration to SUBQ administration, give the first SUBQ dose instead of the next scheduled IV dose.

Systemic sclerosis (scleroderma)-associated interstitial lung disease: Should only be administered SUBQ using prefilled syringe (IV administration is not approved for systemic sclerosis (scleroderma)-associated interstitial lung disease); use with the ACTPen autoinjector has not been studied.

**Administration: Pediatric**

IV: Allow diluted solution to reach room temperature prior to administration; infuse over 60 minutes using a dedicated IV line. Do not administer IV push or IV bolus. Do not use if opaque particles or discoloration are visible.

SUBQ: Administer the full amount (162 mg/0.9 mL) in the prefilled syringe. Allow to reach room temperature prior to use. Do not use if particulate matter or discoloration is visible; solution should be clear and colorless to pale yellow. Rotate injection sites; avoid injecting into moles, scars, or tender, bruised, red, or hard skin. After proper training, patients may self-inject, or the patient’s caregiver may administer tocilizumab using prefilled syringe. Use of the autoinjector in pediatric patients has not been studied.

**Note:** In response to tocilizumab use for COVID-19, the possibility that supplies of the IV formulation may become limited or unavailable prompted the manufacturer, Genentech, to evaluate use of the SUBQ formulation for IV administration. Though Genentech does not recommend the use of the SUBQ formulation diluted in IV bags for infusion, they have provided the following **stability** information; **no information is available on safety and efficacy of the SUBQ formulation administered as an IV infusion** (Ref):

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- Tocilizumab PFS diluted in a 100 mL NS IV bag made of materials such as PVC, polyolefin, polyethylene (PE), and polypropylene (PP). No NS was removed prior to injecting tocilizumab PFS.

- Two doses were tested: Low dose (1 PFS injected into a 100 mL NS bag, leading to a protein concentration of 1.6 mg/mL [total dose: 162 mg]) and high dose (6 PFS injected into a 100 mL NS bag leading to a concentration of 9.2 mg/mL [total dose: 972 mg]). **Note:** Tocilizumab doses exceeding 800 mg/infusion are not recommended in patients with rheumatoid arthritis or cytokine-release syndrome.

- IV solutions were stored for 24 hours at room temperature.
Simulated infusions were conducted over 2 hours using an infusion rate of 19.6 mL/hour (infusion volume of 40 mL) with infusion administration sets made of PVC, PE, polybutadiene, or polyurethane equipped with a 0.2 or 0.22 micrometer polyethersulfone or polysulfone inline filter.

Compatibility with other drugs and indwelling catheters, such as peripherally inserted central catheters and central venous access devices, were not tested.

Storage/Stability

Store intact vials, prefilled syringes, and autoinjectors at 2°C to 8°C (36°F to 46°F). Do not freeze. Protect vials, prefilled syringes, and autoinjectors from light (store in the original package until time of use). Prefilled syringes and autoinjectors must always be kept dry; may store up to 2 weeks at ≤30°C (86°F) once removed from the refrigerator. Solutions diluted for IV infusion in NS may be stored at 2°C to 8°C (36°F to 46°F) or room temperature for up to 24 hours; solutions diluted for IV infusion in 1/2 NS may be stored at 2°C to 8°C (36°F to 46°F) for up to 24 hours or at room temperature for up to 4 hours; protect from light. Discard unused product remaining in the vials.

Preparation for Administration: Adult

IV: Prior to administration, dilute to 50 mL (<30 kg) or 100 mL (≥30 kg) by slowly adding to NS or 1/2 NS. Use only the vials to prepare IV infusion solutions; do not use SUBQ formulations (prefilled syringes, autoinjectors) to prepare IV solutions. Withdraw equal volume of NS or 1/2 NS to the volume of tocilizumab required for dose; slowly add tocilizumab dose into infusion bag or bottle. Gently invert to mix (avoid foaming). Diluted solutions are compatible with polypropylene (PP), polyethylene (PE), polyvinyl chloride (PVC), and glass infusion containers. Allow diluted solution to reach room temperature prior to infusion.

Note: In response to tocilizumab use for COVID-19, the possibility that supplies of the IV formulation may become limited or unavailable prompted the manufacturer, Genentech, to evaluate use of the SUBQ formulation for IV administration. Though Genentech does not recommend the use of the SUBQ formulation diluted in IV bags for infusion, they have provided the following stability information; no information is available on safety and efficacy of the SUBQ formulation administered as an IV infusion (Ref):

No physicochemical incompatibilities were observed with the following investigational study conditions using tocilizumab prefilled syringes (PFS):

- Tocilizumab PFS diluted in a 100 mL NS IV bag made of materials such as PVC, polyolefin, PE, and PP. No NS was removed prior to injecting tocilizumab PFS.

- Two doses were tested: Low dose (1 PFS injected into a 100 mL NS bag, leading to a protein concentration of 1.6 mg/mL [total dose: 162 mg]) and high dose (6 PFS injected into a 100 mL NS bag leading to a concentration of 9.2 mg/mL [total dose: 972 mg]). Note: Tocilizumab doses exceeding 800 mg/infusion are not recommended in patients with rheumatoid arthritis or cytokine-release syndrome.

- IV solutions were stored for 24 hours at room temperature.
• Simulated infusions were conducted over 2 hours using an infusion rate of 19.6 mL/hour (infusion volume of 40 mL) with infusion administration sets made of PVC, PE, polybutadiene, or polyurethane equipped with a 0.2 or 0.22 micrometer polyethersulfone or polysulfone inline filter.

• Compatibility with other drugs and indwelling catheters, such as peripherally inserted central catheters and central venous access devices, were not tested.

**Preparation for Administration: Pediatric**

IV: Use vials to prepare IV infusion solutions; do not use prefilled SubQ formulations (eg, prefilled syringes, autoinjectors) to prepare IV solutions. Prior to administration, further dilute dose in NS or 1/2 NS. Using a 50 mL (children <30 kg) or 100 mL (children ≥30 kg and adolescents) infusion bag or bottle, withdraw a volume of NS or 1/2 NS equal to the volume of the tocilizumab dose; slowly add tocilizumab dose into the infusion bag or bottle. Gently invert to mix to avoid foaming. Diluted solutions should be protected from light and are compatible with polypropylene (PP), polyethylene (PE), PVC, and glass infusion containers. Allow diluted solution to reach room temperature prior to infusion.

**Note:** In response to tocilizumab use for COVID-19, the possibility that supplies of the IV formulation may become limited or unavailable prompted the manufacturer, Genentech, to evaluate use of the SUBQ formulation for IV administration. Though Genentech does not recommend the use of the SUBQ formulation diluted in IV bags for infusion, they have provided the following stability information; no information is available on safety and efficacy of the SUBQ formulation administered as an IV infusion **(Ref).**

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• Two doses were tested: Low dose (1 PFS injected into a 100 mL NS bag, leading to a protein concentration of 1.6 mg/mL [total dose: 162 mg]) and high dose (6 PFS injected into a 100 mL NS bag leading to a concentration of 9.2 mg/mL [total dose: 972 mg]). **Note:** Tocilizumab doses exceeding 800 mg/infusion are not recommended in patients with rheumatoid arthritis or cytokine-release syndrome.

• IV solutions were stored for 24 hours at room temperature.

• Simulated infusions were conducted over 2 hours using an infusion rate of 19.6 mL/hour (infusion volume of 40 mL) with infusion administration sets made of PVC, PE, polybutadiene, or polyurethane equipped with a 0.2 or 0.22 micrometer polyethersulfone or polysulfone inline filter.

• Compatibility with other drugs and indwelling catheters, such as peripherally inserted central catheters and central venous access devices, were not tested.

**IV Compatibility**

See Trissel's IV Compatibility Database

Open Trissel's IV Compatibility

**Patient Counseling Points**
What is this drug used for?

- It is used to treat some types of arthritis.
- It is used to treat a certain artery problem called giant cell arteritis (GCA).
- It is used to treat cytokine release syndrome (CRS).
- It may be given to you for other reasons. Talk with the doctor.

All drugs may cause side effects. However, many people have no side effects or only have minor side effects. Call your doctor or get medical help if any of these side effects or any other side effects bother you or do not go away:

- Injection site irritation
- Common cold symptoms
- Stuffy nose
- Sore throat

WARNING/CAUTION: Even though it may be rare, some people may have very bad and sometimes deadly side effects when taking a drug. Tell your doctor or get medical help right away if you have any of the following signs or symptoms that may be related to a very bad side effect:

- Infection
- Bleeding like vomiting blood or vomit that looks like coffee grounds; coughing up blood; blood in the urine; black, red, or tarry stools; bleeding from the gums; abnormal vaginal bleeding; bruises without a reason or that get bigger; or any severe or persistent bleeding.
- Liver problems like dark urine, fatigue, lack of appetite, nausea, abdominal pain, light-colored stools, vomiting, or yellow skin.
- Behavioral changes
- Mood changes
- Confusion
- Neck rigidity
- Sensitivity to lights
- Severe muscle weakness
- Severe headache
- Severe dizziness
- Passing out
- Vision changes
• Mole changes
• Shortness of breath
• Chest pain
• Severe nausea
• Vomiting
• Severe abdominal pain
• Severe abdominal swelling
• Skin growths
• Burning or numbness feeling
• Bowel changes

• Signs of an allergic reaction, like rash; hives; itching; red, swollen, blistered, or peeling skin with or without fever; wheezing; tightness in the chest or throat; trouble breathing, swallowing, or talking; unusual hoarseness; or swelling of the mouth, face, lips, tongue, or throat.

Tocilizumab FDA fact sheets – Health care provider; Patient

Note: This is not a comprehensive list of all side effects. Talk to your doctor if you have questions.

Consumer Information Use and Disclaimer: This information should not be used to decide whether or not to take this medicine or any other medicine. Only the healthcare provider has the knowledge and training to decide which medicines are right for a specific patient. This information does not endorse any medicine as safe, effective, or approved for treating any patient or health condition. This is only a limited summary of general information about the medicine’s uses from the patient education leaflet and is not intended to be comprehensive. This limited summary does NOT include all information available about the possible uses, directions, warnings, precautions, interactions, adverse effects, or risks that may apply to this medicine. This information is not intended to provide medical advice, diagnosis or treatment and does not replace information you receive from the healthcare provider. For a more detailed summary of information about the risks and benefits of using this medicine, please speak with your healthcare provider and review the entire patient education leaflet.

Medication Safety Issues

Sound-alike/look-alike issues:

Tocilizumab may be confused with sarilumab.

Medication Guide and/or Vaccine Information Statement (VIS)

An FDA-approved patient medication guide, which is available with the product information and at https://www.accessdata.fda.gov/drugsatfda_docs/label/2022/125472s046lbl.pdf#page=50, must be dispensed with this medication.
Contraindications

Known hypersensitivity to tocilizumab or any component of the formulation.

Canadian labeling: Additional contraindications (not in the US labeling): Active infections.

Warnings/Precautions

Concerns related to adverse effects:

• Herpes zoster reactivation: Herpes zoster reactivation has been reported.

• Hyperlipidemia: Therapy is associated with increases in total cholesterol, triglycerides, low-density lipoprotein, and/or high-density lipoprotein.

• Malignancy: Use of tocilizumab may affect defenses against malignancies; impact on the development and course of malignancies is not fully defined; however, malignancies were observed in clinical trials.

Disease-related concerns:

• Demyelinating CNS disease: Use with caution in patients with preexisting or recent onset CNS demyelinating disorders; rare cases of CNS demyelinating disorders (multiple sclerosis and chronic inflammatory demyelinating polyneuropathy) have occurred.

• Hepatic impairment: Use with caution in hepatic impairment; see "Dosage: Hepatic Function Impairment" for additional information.

• Tuberculosis: Consider anti-tuberculosis (TB) treatment in patients with a history of latent or active TB if adequate treatment course cannot be confirmed, and for patients with risk factors for TB despite a negative test.

Concurrent drug therapy issues:

• Biological disease-modifying antirheumatic drugs: Concomitant use with other biological disease-modifying antirheumatic drugs (DMARDs) (eg, tumor necrosis factor blockers, IL-1 receptor blockers, anti-CD20 monoclonal antibodies, selective costimulation modulators) has not been studied and should be avoided due to the increased risk of infection.

Dosage form specific issues:

• Polysorbate 80: Some dosage forms may contain polysorbate 80 (also known as Tweens). Hypersensitivity reactions, usually a delayed reaction, have been reported following exposure to pharmaceutical products containing polysorbate 80 in certain individuals (Isaksson 2002; Lucente 2000; Shelley 1995). Thrombocytopenia, ascites, pulmonary deterioration, and kidney and hepatic failure have been reported in premature neonates after receiving parenteral products containing polysorbate 80 (Alade 1986; CDC 1984). See manufacturer's labeling.

Other warnings/precautions:

• Appropriate use: SUBQ administration is only indicated for adult patients with rheumatoid arthritis, giant cell arteritis, and systemic sclerosis (scleroderma)-associated interstitial lung disease (SSc-ILD), and pediatric patients with polyarticular juvenile idiopathic arthritis. Do not use SUBQ injection for IV
infusion. Do not administer IV for the treatment of SSc-ILD. SUBQ administration with the prefilled ACTPen autoinjector has not been studied in SSc-ILD.

- Immunizations: Patients should be brought up to date with all immunizations before initiating therapy. Live vaccines should not be given concurrently; there are no data available concerning secondary transmission of infection from live vaccines in patients receiving therapy.

* See Cautions in AHFS Essentials for additional information.

Older Adult Considerations

Due to higher infection rate in elderly, this medication should be used cautiously and patients should be monitored closely for infection. In clinical studies, patients over the age of 65 had a higher infection rate than those younger than 65 years of age.

Warnings: Additional Pediatric Considerations

Reactivation of TB has been reported in pediatric patients receiving biologic response modifiers (infliximab and etanercept); prior to therapy, patients with no TB risk factors should be screened for latent TB infection (LTBI) with an age appropriate test (ie, <5 years of age: Tuberculin skin test, and ≥5 years of age: IGRA [interferon gamma release assay]); if any TB risk factors are present or symptoms, both LTBI screening tests should be performed (AAP [Davies 2016]).

Reproductive Considerations

Based on limited data, tocilizumab may be considered for use in patients with rheumatic and musculoskeletal diseases who are planning to become pregnant; however, treatment should be discontinued once pregnancy is confirmed. Conception should be planned during a period of quiescent/low disease activity (ACR [Sammaritano 2020]).

Data related to paternal use of tocilizumab are limited (Hoeltzenbein 2016). Therefore, recommendations are not available for use in patients with rheumatic and musculoskeletal diseases who are planning to father a child (ACR [Sammaritano 2020]).

Pregnancy Considerations

Tocilizumab crosses the placenta (Moriyama 2020; Saito 2018; Saito 2019a; Tada 2019). Tocilizumab is a humanized monoclonal antibody (IgG₁). Human IgG crosses the placenta. Fetal exposure is dependent upon the IgG subclass, maternal serum concentrations, placental integrity, newborn birth weight, and gestational age, generally increasing as pregnancy progresses. The lowest exposure would be expected during the period of organogenesis and the highest during the third trimester (Clements 2020; Palmeira 2012; Pentsuk 2009).

Tocilizumab was not detected in umbilical cord blood, infant serum, or maternal serum at delivery in a patient who received her last dose 23 weeks prior to delivery (Saito 2021). Postmarketing data reviewed through 2014 have not shown an increased rate of congenital malformations or a pattern of specific malformations following in utero exposure to tocilizumab. The review included pregnancy outcome data from 288 women who received tocilizumab for rheumatic disorders; the majority received a dose during the first trimester or within 6 weeks of conception. Using these data, the incidence of preterm birth and spontaneous abortion may be increased when compared to the background rate, but these outcomes
may also be influenced by maternal disease and concomitant medications (Hoeltzenbein 2016). Additional outcome data are limited (Dalkilic 2019; Dernoncourt 2022; Ghalandari 2022; Imaizumi 2022; Jorgensen 2022; Tada 2019).

Until additional data are available, tocilizumab is not currently recommended for the treatment of rheumatic and musculoskeletal diseases during pregnancy. Tocilizumab should be discontinued once pregnancy is confirmed (ACR [Sammaritano 2020]).

Outcome data specific to use of tocilizumab in pregnancy for COVID-19 are limited (Jorgensen 2022; Péju 2022). In general, the treatment of COVID-19 infection during pregnancy is the same as in nonpregnant patients. However, because data for most therapeutic agents in pregnant patients are limited, treatment options should be evaluated as part of a shared decision-making process. Use of tocilizumab for the treatment of COVID-19 in pregnancy is not currently recommended (NIH 2022). Information related to the treatment of COVID-19 during pregnancy continues to emerge; refer to current guidelines for the treatment of pregnant patients.

The risk of severe illness from COVID-19 infection is increased in symptomatic pregnant patients compared to nonpregnant patients. Pregnant and recently pregnant patients with moderate or severe infection are at increased risk of complications such as hypertensive disorders of pregnancy, postpartum hemorrhage, or other infections compared to pregnant patients without COVID-19. Symptomatic pregnant patients may require ICU admission, mechanical ventilation, or ventilatory support (ECMO) compared to symptomatic nonpregnant patients. Other adverse pregnancy outcomes include preterm birth and stillbirth. The risk of coagulopathy, cesarean delivery, and maternal death may be increased; neonates have an increased risk for NICU admission. Maternal age and comorbidities such as diabetes, hypertension, lung disease, and obesity may also increase the risk of severe illness in pregnant and recently pregnant patients (ACOG 2022; NIH 2022). Information related to the treatment of COVID-19 during pregnancy continues to emerge; refer to current guidelines for the treatment of pregnant patients.

Data collection to monitor pregnancy and infant outcomes following exposure to tocilizumab is ongoing. Health care providers or pregnant patients are encouraged to enroll exposed pregnancies in the Genentech Actemra registry (1-877-311-8972).

Data collection to monitor maternal and infant outcomes following exposure to COVID-19 during pregnancy is ongoing. Health care providers are encouraged to enroll patients exposed to COVID-19 during pregnancy in the Organization of Teratology Information Specialists pregnancy registry (1-877-311-8972; https://mothertobaby.org/join-study/).

Breastfeeding Considerations

Tocilizumab is present in colostrum and breast milk (Moriyama 2020; Saito 2018; Saito 2019a; Saito 2019b; Saito 2021; Tada 2019).

In a report of 2 cases, breast milk concentrations peaked ~3 days after an IV maternal dose, then gradually decreased (Saito 2018). In a third case, tocilizumab was detected in the serum of 1 infant at birth following in utero exposure; however, concentrations rapidly decreased and were not detectable by 4 weeks of age, even though the infant was exclusively breastfed (Saito 2019a).
According to the manufacturer, the decision to breastfeed during therapy should consider the risk of infant exposure, the benefits of breastfeeding to the infant, and benefits of treatment to the mother. Although data related to use in lactating patients are limited, adverse events have not been reported in breastfed infants (Nakajima 2016; Saito 2018; Saito 2019a). Concentrations of tocilizumab are expected to be limited in breast milk due to large molecular weight. Also, because tocilizumab is unlikely to be absorbed via the infant GI tract, use of tocilizumab may be considered in patients who are breastfeeding (ACR [Sammaritano 2020]).

Lactating patients with ≥1 risk factor for severe illness from COVID-19 infection may be treated with monoclonal antibodies. Breast milk has not been found to be a source of COVID-19 infection and maternal infection is not a contraindication to breastfeeding. However, lactating patients with COVID-19 infection can transmit the virus through respiratory droplets and all precautions should be taken to avoid spreading the virus to the infant (eg, hand hygiene, mask wearing); alternatively, breast milk can be expressed and fed to the infant by someone without confirmed or suspected COVID-19 (ACOG 2022).


Briggs' Drugs in Pregnancy & Lactation

- Tocilizumab

**Adverse Reactions (Significant): Considerations**

**GI perforation**

**GI perforation** (most often lower GI) has been reported, typically secondary to diverticulitis. Tocilizumab is associated with a higher risk of GI perforation in patients with rheumatoid arthritis compared to other biologic or conventional disease-modifying antirheumatic drugs (Ref). GI perforation and diverticulitis may present with an atypical clinical picture (Ref).

**Mechanism:** Unknown; tocilizumab is an interleukin-6 (IL-6) receptor antagonist and is hypothesized that IL-6 is needed to maintain intestinal homeostasis; neutralization of IL-6 impairs healing of digestive epithelium in susceptible individuals (Ref).

**Risk factors:**

- History of diverticulitis (Ref)
- Older age (Ref)
- Concurrent glucocorticoids (current and cumulative use [prednisone dose >7.5 mg/day]) (Ref)
- Concurrent nonsteroidal anti-inflammatory drugs (Ref)

**Hematologic effects**
**Neutropenia** and **thrombocytopenia** may occur; treatment interruption, dose or interval modification, or discontinuation may be required. Neutropenia and thrombocytopenia do not appear to be associated with serious infections and bleeding, respectively (Ref).

**Mechanism:** Tocilizumab is an antagonist of the interleukin-6 (IL-6) receptor; IL-6 mobilizes neutrophils from the marginated pool into the circulating pool, therefore, neutropenia induced by tocilizumab may reflect a shift of neutrophils out of circulation rather than myelosuppression (Ref). Similarly, IL-6 increases thrombopoiesis and tocilizumab-induced reductions in platelet counts are typically not large enough to be associated with bleeding (Ref).

**Onset:** Varied; neutrophil counts typically decrease over the first 6 weeks and stabilize thereafter (Ref).

**Risk factors:**
- Neutropenia risk is increased in females and baseline neutrophils <2,000/mm³ (Ref)

**Hepatic effects**

Tocilizumab may cause **increased serum alanine aminotransferase** and **increased serum aspartate aminotransferase**. Increases are generally transient; however, some cases may require dose reduction (Ref). Cases of severe **hepatitis** and **hepatic failure** (including fatal) have been reported (Ref). Mild liver injury may resolve within 6 weeks, while severe cases may resolve within 2 to 3 months (Ref).

**Mechanism:** Unknown; may result from effects on interleukin-6, which helps protect against liver damage and increases liver regeneration (Ref).

**Onset:** Varied; has been reported months to years after initiation, although most cases occur within the first year (Ref).

**Risk factors:**
- Concurrent methotrexate, disease-modifying drugs, or other hepatotoxic medications (Ref)

**Hypersensitivity reactions**

Tocilizumab is associated with a variety of hypersensitivity reactions, including immediate (eg, **anaphylaxis**) (Ref) and delayed hypersensitivity reactions. Fatal anaphylactic reactions have been reported following repeated IV administration (Ref). Hypersensitivity reactions are rare, occurring at a rate of 0.1% to 0.7% (Ref). Delayed hypersensitivity reactions include non-specific cutaneous eruptions, **urticaria**, **psoriasis**, and **hypersensitivity angitis** (Ref). In addition, serious cutaneous adverse reactions (SCARs) have been reported, including **drug rash with eosinophilia and systemic symptoms** (DRESS) and **Stevens-Johnson syndrome** (Ref).

**Mechanism:**
- Immediate reactions: Unknown; possibly related to release of cytokines or IgE-mediated (Ref).
Delayed hypersensitivity reactions: Non–dose-related, immunologic (ie, T-cell–mediated) (Ref).

Onset:

Anaphylactic reactions: Rapid; occurs within 24 hours after infusion, typically between the second and ninth infusions (Ref).

Delayed reactions: Varied; range from 4 days after a single infusion to development of psoriatic lesions after 22 infusions (Ref).

SCARs: Varied; usually occur 1 to 8 weeks after initiation (Ref), although DRESS has been reported after 3 months (Ref).

Risk factors:

• Patients with systemic juvenile idiopathic arthritis with greater disease activity and younger age may be at higher risk for anaphylactic reactions (Ref)

• Patients with adult-onset Still disease may have a higher risk of anaphylaxis than patients with other rheumatic diseases (Ref)

• IV administration associated with higher risk of serious hypersensitivity reactions, including anaphylaxis, compared to SUBQ administration (Ref)

• Absence of concurrent synthetic disease-modifying antirheumatic drugs may increase the risk of anaphylactic reactions in patients with rheumatoid arthritis (Ref)

Infections

Serious and potentially fatal infections (including invasive fungal, bacterial, viral, protozoal, and other opportunistic infections) have been reported in patients receiving tocilizumab. Most serious infections have occurred in patients taking concurrent immunosuppressive therapy. Common serious infections have included pneumonia, urinary tract infections, cellulitis, herpes zoster, gastroenteritis, diverticulitis of the gastrointestinal tract, sepsis, and septic arthritis. Tuberculosis (pulmonary or extrapulmonary) has been reported, both reactivation of latent infection and new infections. Overall rate of infection with concurrent methotrexate is 30% higher than with monotherapy and serious infection may be doubled (Ref). In a multi-database study, the risk of serious infection with tocilizumab in adult patients with rheumatoid arthritis was not different from tumor necrosis factor (TNF) inhibitors (Ref). Overall risk of infection is similar to TNF inhibitors, with particular risks for mycobacterial and viral infections (Ref). Healthcare-associated infections in patients with COVID-19 were increased 5-fold with prior use of tocilizumab (Ref).

Mechanism: Dose-related, related to mechanism of action; immunosuppression increases risk for infection.

Onset: Delayed; may occur at any time. No difference noted for 0 to 12 months treatment versus 13 to 24 months of treatment (Ref).

Risk factors:
- Higher doses (Ref)
- Prednisone dose ≥5 mg/day or equivalent (Ref)
- Age ≥65 years (Ref)
- Previous or concurrent respiratory disease (Ref)
- Chronic or recurrent infections, tuberculosis exposure, and/or underlying conditions predisposing to infection

**Adverse Reactions**

The following adverse drug reactions and incidences are derived from product labeling and the FDA issued emergency use authorization (EUA), unless otherwise specified. Incidences are reported for monotherapy, combination therapy, and adults, unless otherwise noted. Refer to EUA for information regarding reporting adverse reactions (FDA 2021).

>10%:

Endocrine & metabolic: Increased serum cholesterol (19% to 20%; children and adolescents: ≤2%)

Gastrointestinal: Constipation (6% to 13%)

Hematologic & oncologic: Neutropenia (children and adolescents <30 kg: 26%; children and adolescents ≥30 kg and adults: 3% to 4%)

Hepatic: Increased serum alanine aminotransferase (≤36%) (See Table 1), increased serum aspartate aminotransferase (≤22%) (See Table 2)

Hypersensitivity: Infusion-related reaction (4% to 20%)

Local: Injection site reaction (SUBQ: Children and adolescents: 15% to 44% [higher incidence occurred in weight ≥30 kg]; adults: 7% to 10%)

1% to 10%:

Cardiovascular: Deep vein thrombosis (3%), hypertension (4% to 7%), peripheral edema (<2%), septic shock (6%)

Dermatologic: Skin rash (2%) (See Table 3)

Endocrine & metabolic: Hyperglycemia (5%), hypoglycemia (3%), hypokalemia (4% to 5%), hypothyroidism (<2%), increased LDL cholesterol (9% to 10%; children and adolescents: ≤2%), weight gain (<2%)

Gastrointestinal: Diarrhea (children, adolescents, and adults: ≥4%), gastric ulcer (<2%), gastritis (1%), nausea (3% to 4%), oral mucosa ulcer (2%), stomatitis (<2%), upper abdominal pain (2%)

Genitourinary: Urinary tract infection (5% to 8%) (See Table 4)

Hematologic & oncologic: Leukopenia (<2%), thrombocytopenia (children, adolescents, and adults: 1% to 4%) (See Table 5)
Hepatic: Increased serum bilirubin (<2%)

Immunologic: Antibody development (children and adolescents: ≤6%; adults: ≤2%, including neutralizing)

Infection: Herpes simplex infection (<2%)

Nervous system: Anxiety (3% to 6%), delirium (5%), dizziness (3%), headache (3% to 7%), insomnia (4% to 5%), pain (3%)

Ophthalmic: Conjunctivitis (<2%)

Renal: Acute kidney injury (7%), nephrolithiasis (<2%)

Respiratory: Bronchitis (3%) (See Table 6), cough (<2%), dyspnea (<2%), nasopharyngitis (7%) (See Table 7), pneumonia (8%) (See Table 8), upper respiratory tract infection (7%) (See Table 9)

<1%: Hypersensitivity: Anaphylaxis (Park 2020)

Frequency not defined:

Cardiovascular: Hypotension

Dermatologic: Pruritus

Nervous system: Chronic inflammatory demyelinating polyneuropathy

Otic: Otitis media

Postmarketing:

Dermatologic: Cellulitis, psoriasis (Grasland 2013), Stevens-Johnson syndrome (Venkateswaran 2020), urticaria (Erdogan 2018)

Gastrointestinal: Diverticulitis of the gastrointestinal tract (Stangfeld 2017), gastroenteritis, gastrointestinal perforation (Stangfeld 2017), pancreatitis (Kamath 2021), ulcerative bowel lesion (Ohkubo 2022)

Hematologic & oncologic: Malignant neoplasm (Finet 2012)

Hepatic: Hepatic failure (Genovese 2017), hepatic injury (Genovese 2017), hepatitis (Genovese 2017), jaundice (Genovese 2017)

Hypersensitivity: Angioedema (Erdogan 2018), drug reaction with eosinophilia and systemic symptoms (Zuelgaray 2017), hypersensitivity angiitis (Wu 2015)

Infection: Aspergillosis, atypical mycobacterial infection, candidiasis, cryptococcosis, herpes zoster infection, infection (Campbell 2011), sepsis

Nervous system: Multiple sclerosis (Beauchemin 2016)

Neuromuscular & skeletal: Septic arthritis

Respiratory: Infection due to an organism in genus Pneumocystis, tuberculosis
* See Cautions in AHFS Essentials for additional information.

**Metabolism/Transport Effects**

None known.

**Drug Interactions Open Interactions**

**Note:** Interacting drugs may **not be individually listed below** if they are part of a group interaction (e.g., individual drugs within "CYP3A4 Inducers [Strong]" are NOT listed). For a complete list of drug interactions by individual drug name and detailed management recommendations, use the Lexicomp drug interactions program by clicking on the "Open Interactions" button above.

Abrocitinib: May enhance the immunosuppressive effect of Immunosuppressants (Therapeutic Immunosuppressant Agents). **Risk X: Avoid combination**

Anifrolumab: Biologic Disease-Modifying Antirheumatic Drugs (DMARDs) may enhance the immunosuppressive effect of Anifrolumab. **Risk X: Avoid combination**

Antithymocyte Globulin (Equine): Immunosuppressants (Therapeutic Immunosuppressant Agents) may enhance the adverse/toxic effect of Antithymocyte Globulin (Equine). Specifically, these effects may be unmasked if the dose of immunosuppressive therapy is reduced. Immunosuppressants (Therapeutic Immunosuppressant Agents) may enhance the immunosuppressive effect of Antithymocyte Globulin (Equine). Specifically, infections may occur with greater severity and/or atypical presentations. **Risk C: Monitor therapy**

Anti-TNF Agents: Tocilizumab may enhance the immunosuppressive effect of Anti-TNF Agents. **Risk X: Avoid combination**

Baricitinib: Immunosuppressants (Therapeutic Immunosuppressant Agents) may enhance the immunosuppressive effect of Baricitinib. **Risk X: Avoid combination**

BCG Products: Immunosuppressants (Therapeutic Immunosuppressant Agents) may enhance the adverse/toxic effect of BCG Products. Specifically, the risk of vaccine-associated infection may be increased. Immunosuppressants (Therapeutic Immunosuppressant Agents) may diminish the therapeutic effect of BCG Products. **Risk X: Avoid combination**

Belimumab: May enhance the immunosuppressive effect of Biologic Disease-Modifying Antirheumatic Drugs (DMARDs). Management: Consider alternatives to the use of belimumab with other biologic therapies. Monitor closely for increased toxicities related to additive immunosuppression (i.e., infection, malignancy) if combined. **Risk D: Consider therapy modification**

Biologic Disease-Modifying Antirheumatic Drugs (DMARDs): May enhance the immunosuppressive effect of other Biologic Disease-Modifying Antirheumatic Drugs (DMARDs). **Risk X: Avoid combination**

Brincidofovir: Immunosuppressants (Therapeutic Immunosuppressant Agents) may diminish the therapeutic effect of Brincidofovir. **Risk C: Monitor therapy**

Brivudine: May enhance the adverse/toxic effect of Immunosuppressants (Therapeutic Immunosuppressant Agents). **Risk X: Avoid combination**
Cladribine: Immunosuppressants (Therapeutic Immunosuppressant Agents) may enhance the immunosuppressive effect of Cladribine. **Risk X: Avoid combination**

Coccidioides immitis Skin Test: Immunosuppressants (Therapeutic Immunosuppressant Agents) may diminish the diagnostic effect of Coccidioides immitis Skin Test. Management: Consider discontinuing therapeutic immunosuppressants several weeks prior to coccidioides immitis skin antigen testing to increase the likelihood of accurate diagnostic results. **Risk D: Consider therapy modification**

COVID-19 Vaccine (Adenovirus Vector): Immunosuppressants (Therapeutic Immunosuppressant Agents) may diminish the therapeutic effect of COVID-19 Vaccine (Adenovirus Vector). Management: Administer a 2nd dose using an mRNA COVID-19 vaccine (at least 4 weeks after the primary vaccine dose) and a bivalent booster dose (at least 2 months after the additional mRNA dose or any other boosters). **Risk D: Consider therapy modification**

COVID-19 Vaccine (Inactivated Virus): Immunosuppressants (Therapeutic Immunosuppressant Agents) may diminish the therapeutic effect of COVID-19 Vaccine (Inactivated Virus). **Risk C: Monitor therapy**

COVID-19 Vaccine (mRNA): Immunosuppressants (Therapeutic Immunosuppressant Agents) may diminish the therapeutic effect of COVID-19 Vaccine (mRNA). Management: Give a 3-dose primary series for all patients aged 6 months and older taking immunosuppressive medications or therapies. Booster doses are recommended for certain age groups. See CDC guidance for details. **Risk D: Consider therapy modification**

COVID-19 Vaccine (Subunit): Immunosuppressants (Therapeutic Immunosuppressant Agents) may diminish the therapeutic effect of COVID-19 Vaccine (Subunit). **Risk C: Monitor therapy**

COVID-19 Vaccine (Virus-like Particles): Immunosuppressants (Therapeutic Immunosuppressant Agents) may diminish the therapeutic effect of COVID-19 Vaccine (Virus-like Particles). **Risk C: Monitor therapy**

CycloSPORINE (Systemic): Interleukin-6 (IL-6) Inhibiting Therapies may decrease the serum concentration of CycloSPORINE (Systemic). **Risk C: Monitor therapy**

CYP2C9 Substrates (Narrow Therapeutic Index/Sensitive with Inducers): Interleukin-6 (IL-6) Inhibiting Therapies may decrease the serum concentration of CYP2C9 Substrates (Narrow Therapeutic Index/Sensitive with Inducers). **Risk C: Monitor therapy**

CYP3A4 Substrates (Narrow Therapeutic Index/Sensitive with Inducers): Interleukin-6 (IL-6) Inhibiting Therapies may decrease the serum concentration of CYP3A4 Substrates (Narrow Therapeutic Index/Sensitive with Inducers). **Risk C: Monitor therapy**

Dengue Tetravalent Vaccine (Live): Immunosuppressants (Therapeutic Immunosuppressant Agents) may enhance the adverse/toxic effect of Dengue Tetravalent Vaccine (Live). Specifically, the risk of vaccine-associated infection may be increased. Immunosuppressants (Therapeutic Immunosuppressant Agents) may diminish the therapeutic effect of Dengue Tetravalent Vaccine (Live). **Risk X: Avoid combination**

Denosumab: Immunosuppressants (Therapeutic Immunosuppressant Agents) may enhance the immunosuppressive effect of Denosumab. Management: Consider the risk of serious infections versus the potential benefits of coadministration of denosumab and immunosuppressants. If combined, monitor for signs/symptoms of serious infections. **Risk D: Consider therapy modification**
Deucravacitinib: May enhance the immunosuppressive effect of Immunosuppressants (Therapeutic Immunosuppressant Agents). *Risk X: Avoid combination*

Filgotinib: May enhance the immunosuppressive effect of Immunosuppressants (Therapeutic Immunosuppressant Agents). *Risk X: Avoid combination*

HMG-CoA Reductase Inhibitors (Statins): Interleukin-6 (IL-6) Inhibiting Therapies may decrease the serum concentration of HMG-CoA Reductase Inhibitors (Statins). *Risk C: Monitor therapy*

Inebilizumab: Immunosuppressants (Therapeutic Immunosuppressant Agents) may enhance the immunosuppressive effect of Inebilizumab. *Risk C: Monitor therapy*

Influenza Virus Vaccines: Immunosuppressants (Therapeutic Immunosuppressant Agents) may diminish the therapeutic effect of Influenza Virus Vaccines. Management: Administer influenza vaccines at least 2 weeks prior to initiating immunosuppressants if possible. If vaccination occurs less than 2 weeks prior to or during therapy, revaccinate 2 to 3 months after therapy discontinued if immune competence restored. *Risk D: Consider therapy modification*

Leflunomide: Immunosuppressants (Therapeutic Immunosuppressant Agents) may enhance the immunosuppressive effect of Leflunomide. Management: Increase the frequency of chronic monitoring of platelet, white blood cell count, and hemoglobin or hematocrit to monthly, instead of every 6 to 8 weeks, if leflunomide is coadministered with immunosuppressive agents. *Risk D: Consider therapy modification*

Mumps- Rubella- or Varicella-Containing Live Vaccines: Immunosuppressants (Therapeutic Immunosuppressant Agents) may enhance the adverse/toxic effect of Mumps- Rubella- or Varicella-Containing Live Vaccines. Specifically, the risk of vaccine-associated infection may be increased. Immunosuppressants (Therapeutic Immunosuppressant Agents) may diminish the therapeutic effect of Mumps- Rubella- or Varicella-Containing Live Vaccines. *Risk X: Avoid combination*

Nadofaragene Firadenovec: Immunosuppressants (Therapeutic Immunosuppressant Agents) may enhance the adverse/toxic effect of Nadofaragene Firadenovec. Specifically, the risk of disseminated adenovirus infection may be increased. *Risk X: Avoid combination*

Natalizumab: Immunosuppressants (Therapeutic Immunosuppressant Agents) may enhance the immunosuppressive effect of Natalizumab. *Risk X: Avoid combination*

Ocrelizumab: Immunosuppressants (Therapeutic Immunosuppressant Agents) may enhance the immunosuppressive effect of Ocrelizumab. *Risk C: Monitor therapy*

Ofatumumab: Immunosuppressants (Therapeutic Immunosuppressant Agents) may enhance the immunosuppressive effect of Ofatumumab. *Risk C: Monitor therapy*

Pidotimod: Immunosuppressants (Therapeutic Immunosuppressant Agents) may diminish the therapeutic effect of Pidotimod. *Risk C: Monitor therapy*

Pimecrolimus: Immunosuppressants (Therapeutic Immunosuppressant Agents) may enhance the immunosuppressive effect of Pimecrolimus. *Risk X: Avoid combination*
Pneumococcal Vaccines: Immunosuppressants (Therapeutic Immunosuppressant Agents) may diminish the therapeutic effect of Pneumococcal Vaccines. Risk C: Monitor therapy

Poliovirus Vaccine (Live/Trivalent/Oral): Immunosuppressants (Therapeutic Immunosuppressant Agents) may enhance the adverse/toxic effect of Poliovirus Vaccine (Live/Trivalent/Oral). Specifically, the risk of vaccine-associated infection may be increased. Immunosuppressants (Therapeutic Immunosuppressant Agents) may diminish the therapeutic effect of Poliovirus Vaccine (Live/Trivalent/Oral). Risk X: Avoid combination

Polymethylmethacrylate: Immunosuppressants (Therapeutic Immunosuppressant Agents) may enhance the potential for allergic or hypersensitivity reactions to Polymethylmethacrylate. Management: Use caution when considering use of bovine collagen-containing implants such as the polymethylmethacrylate-based Bellafill brand implant in patients who are receiving immunosuppressants. Consider use of additional skin tests prior to administration. Risk D: Consider therapy modification

Rabies Vaccine: Immunosuppressants (Therapeutic Immunosuppressant Agents) may diminish the therapeutic effect of Rabies Vaccine. Management: Complete rabies vaccination at least 2 weeks before initiation of immunosuppressant therapy if possible. If combined, check for rabies antibody titers, and if vaccination is for post exposure prophylaxis, administer a 5th dose of the vaccine. Risk D: Consider therapy modification

Ruxolitinib (Topical): Immunosuppressants (Therapeutic Immunosuppressant Agents) may enhance the immunosuppressive effect of Ruxolitinib (Topical). Risk X: Avoid combination

Sipuleucel-T: Immunosuppressants (Therapeutic Immunosuppressant Agents) may diminish the therapeutic effect of Sipuleucel-T. Management: Consider reducing the dose or discontinuing the use of immunosuppressants prior to initiating sipuleucel-T therapy. Risk D: Consider therapy modification

Sphingosine 1-Phosphate (S1P) Receptor Modulator: May enhance the immunosuppressive effect of Immunosuppressants (Therapeutic Immunosuppressant Agents). Risk C: Monitor therapy

Tacrolimus (Topical): Immunosuppressants (Therapeutic Immunosuppressant Agents) may enhance the immunosuppressive effect of Tacrolimus (Topical). Risk X: Avoid combination

Talimogene Laherparepvec: Immunosuppressants (Therapeutic Immunosuppressant Agents) may enhance the adverse/toxic effect of Talimogene Laherparepvec. Specifically, the risk of infection from the live, attenuated herpes simplex virus contained in talimogene laherparepvec may be increased. Risk X: Avoid combination

Tertomotide: Immunosuppressants (Therapeutic Immunosuppressant Agents) may diminish the therapeutic effect of Tertomotide. Risk X: Avoid combination

Theophylline: Interleukin-6 (IL-6) Inhibiting Therapies may decrease the serum concentration of Theophylline. Risk C: Monitor therapy

Tofacitinib: Immunosuppressants (Therapeutic Immunosuppressant Agents) may enhance the immunosuppressive effect of Tofacitinib. Management: Coadministration of tofacitinib with potent
immunosuppressants is not recommended. Use with non-biologic disease-modifying antirheumatic drugs (DMARDs) was permitted in psoriatic arthritis clinical trials. **Risk X: Avoid combination**

Typhoid Vaccine: Immunosuppressants (Therapeutic Immunosuppressant Agents) may enhance the adverse/toxic effect of Typhoid Vaccine. Specifically, the risk of vaccine-associated infection may be increased. Immunosuppressants (Therapeutic Immunosuppressant Agents) may diminish the therapeutic effect of Typhoid Vaccine. **Risk X: Avoid combination**

Ublituximab: Immunosuppressants (Therapeutic Immunosuppressant Agents) may enhance the immunosuppressive effect of Ublituximab. **Risk C: Monitor therapy**

Upadacitinib: Immunosuppressants (Therapeutic Immunosuppressant Agents) may enhance the immunosuppressive effect of Upadacitinib. **Risk X: Avoid combination**

Vaccines (Inactivated/Non-Replicating): Immunosuppressants (Therapeutic Immunosuppressant Agents) may diminish the therapeutic effect of Vaccines (Inactivated/Non-Replicating). Management: Give inactivated vaccines at least 2 weeks prior to initiation of immunosuppressants when possible. Patients vaccinated less than 14 days before initiating or during therapy should be revaccinated at least 2 to 3 months after therapy is complete. **Risk D: Consider therapy modification**

Vaccines (Live): May enhance the adverse/toxic effect of Immunosuppressants (Therapeutic Immunosuppressant Agents). Specifically, the risk of vaccine-associated infection may be increased. Vaccines (Live) may diminish the therapeutic effect of Immunosuppressants (Therapeutic Immunosuppressant Agents). **Risk X: Avoid combination**

Yellow Fever Vaccine: Immunosuppressants (Therapeutic Immunosuppressant Agents) may enhance the adverse/toxic effect of Yellow Fever Vaccine. Specifically, the risk of vaccine-associated infection may be increased. Immunosuppressants (Therapeutic Immunosuppressant Agents) may diminish the therapeutic effect of Yellow Fever Vaccine. **Risk X: Avoid combination**

**Monitoring Parameters**

COVID-19: ALT/AST, neutrophils, platelets (per current standard clinical practice); signs and symptoms of demyelinating disorders and new infections.

Chronic therapy: Latent TB screening prior to therapy initiation (all patients); neutrophils, platelets (prior to therapy, 4 to 8 weeks after start of therapy, and every 3 months thereafter [rheumatoid arthritis (RA), giant cell arteritis (GCA), systemic sclerosis (scleroderma)-associated interstitial lung disease (SSC-ILD)]); ALT/AST, alkaline phosphatase, and total bilirubin (prior to therapy, every 4 to 8 weeks after start of therapy for the first 6 months, and every 3 months thereafter [RA, GCA, SSC-ILD]); neutrophils, platelets, ALT/AST (prior to therapy, at second administration, and every 2 to 4 weeks [systemic juvenile idiopathic arthritis] or 4 to 8 weeks [polychratic juvenile idiopathic arthritis] thereafter); additional liver function tests (eg, bilirubin) as clinically indicated; lipid panel (prior to and 4 to 8 weeks following initiation of therapy, then subsequently according to current guidelines); monitor all patients for signs and symptoms of infection (prior to, during, and after therapy); signs and symptoms of CNS demyelinating disorders; new onset abdominal symptoms.

**Nursing Physical Assessment/Monitoring**
Check ordered labs and report all abnormal lab and diagnostic test results. Monitor patient during and following IV administration for hypersensitivity reaction; have treatment medications and interventions immediately available for use. Verify patient’s immunizations are up-to-date and tuberculosis skin test was performed before initiating therapy. Monitor for signs of active infections. Monitor for new onset abdominal symptoms. Educate patient about when to report signs or symptoms of infection to provider. Provide reminders for regular lab work when on this medication. Educate patient to report change in body weight for potential dosage adjustment.

**Dosage Forms: US**

Excipient information presented when available (limited, particularly for generics); consult specific product labeling.

Solution, Intravenous [preservative free]:
- Actemra: 80 mg/4 mL (4 mL); 200 mg/10 mL (10 mL); 400 mg/20 mL (20 mL) [contains polysorbate 80]

Solution Auto-injector, Subcutaneous [preservative free]:
- Actemra ACTPen: 162 mg/0.9 mL (0.9 mL) [contains polysorbate 80]

Solution Prefilled Syringe, Subcutaneous [preservative free]:
- Actemra: 162 mg/0.9 mL (0.9 mL) [contains polysorbate 80]

**Dosage Forms: Canada**

Excipient information presented when available (limited, particularly for generics); consult specific product labeling.

Solution, Intravenous:
- Actemra: 80 mg/4 mL (4 mL); 200 mg/10 mL (10 mL); 400 mg/20 mL (20 mL) [contains polysorbate 80]

Solution Auto-injector, Subcutaneous:
- Actemra: 162 mg/0.9 mL (0.9 mL) [contains polysorbate 80]

Solution Prefilled Syringe, Subcutaneous:
- Actemra: 162 mg/0.9 mL (0.9 mL) [contains polysorbate 80]

**Anatomic Therapeutic Chemical (ATC) Classification**
- L04AC07

**Generic Available (US)**

No

**Pricing: US**

**Solution (Actemra Intravenous)**

80 mg/4 mL (per mL): $159.35
200 mg/10 mL (per mL): $159.35
400 mg/20 mL (per mL): $159.35

**Solution Auto-injector** (Actemra ACTPen Subcutaneous)

162 mg/0.9 mL (per 0.9 mL): $1,368.71

**Solution Prefilled Syringe** (Actemra Subcutaneous)

162 mg/0.9 mL (per 0.9 mL): $1,368.71

**Disclaimer:** A representative AWP (Average Wholesale Price) price or price range is provided as reference price only. A range is provided when more than one manufacturer’s AWP price is available and uses the low and high price reported by the manufacturers to determine the range. The pricing data should be used for benchmarking purposes only, and as such should not be used alone to set or adjudicate any prices for reimbursement or purchasing functions or considered to be an exact price for a single product and/or manufacturer. Medi-Span expressly disclaims all warranties of any kind or nature, whether express or implied, and assumes no liability with respect to accuracy of price or price range data published in its solutions. In no event shall Medi-Span be liable for special, indirect, incidental, or consequential damages arising from use of price or price range data. Pricing data is updated monthly.

**Mechanism of Action**

Tocilizumab is an antagonist of the interleukin-6 (IL-6) receptor. Endogenous IL-6 is induced by inflammatory stimuli and mediates a variety of immunological responses. Inhibition of IL-6 receptors by tocilizumab leads to a reduction in cytokine and acute phase reactant production.

**Pharmacokinetics (Adult Data Unless Noted)**

Onset (cytokine release syndrome [CRS]): Median time to defervescence: 4 hours (Fitzgerald 2017); Fever and hypotension often resolve within a few hours (Lee 2014); Blood pressure stabilization: 1 to 3 days (Abboud 2016; Maude 2014b). A median of 1 dose (range: 1 to 4) was required for management of CRS due to chimeric antigen receptor T-cell therapy.

Distribution: $V_{dss}$: Children and Adolescents: Systemic juvenile idiopathic arthritis (SJIA): 4.01 L; Polyarticular juvenile idiopathic arthritis (PJA): 4.08 L; Adults: Rheumatoid arthritis (RA): 6.4 L; Giant cell arteritis (GCA): 7.46 L; Systemic sclerosis (scleroderma)-associated interstitial lung disease (SSc-ILD): 6.74 L.

Bioavailability: SUBQ: 80% (GCA, RA, SSc-ILD); 95% (SJIA); 96% (PJA).

Half-life elimination:

IV: Concentration dependent: Steady state: Children and Adolescents: SJIA: Up to 16 days; PJA: Up to 17 days; Adults: RA: Up to 11 to 13 days; GCA: 13.2 days.

SUBQ: Concentration dependent: Children and Adolescents: SJIA: Up to 14 days; PJA: Up to 10 days; Adults: RA: Up to 5 days (every-other-week dosing) or up to 13 days (every-week dosing); GCA: 4.2 to 7.9 days (every other week dosing) or 18.3 to 18.9 days (every-week dosing); SSc-ILD: 12.1 to 13 days (every-week dosing).
Time to peak: SUBQ: ~3 days (for every-week dosing); ~4.5 days (for every-2-week dosing).

Pharmacokinetics: Additional Considerations (Adult Data Unless Noted)

Body weight:

Rheumatoid arthritis: For IV administration, the body weight-based dose (8 mg/kg) resulted in ~86% higher exposure in patients who weighed >100 kg in comparison with patients who weighed <60 kg.

Giant cell arteritis: Higher exposure was observed in patients with lower body weight. For the 162 mg SUBQ every week dosing regimen, the steady-state Cavg was 51% higher in patients with body weight <60 kg compared with patients weighing between 60 to 100 kg. For the 162 mg SUBQ every-other-week regimen, the steady-state Cavg was 129% higher in patients with body weight <60 kg compared with patients weighing between 60 to 100 kg.

Dental: Local Anesthetic/Vasoconstrictor Precautions

No information available to require special precautions

Dental: Effects on Dental Treatment

Key adverse event(s) related to dental treatment: Tocilizumab belongs to the class of disease-modifying antirheumatic drugs and, as such, has immunosuppressive properties. Consider a medical consult prior to any invasive treatment for patients under active treatment with tocilizumab. Delayed wound healing due to the immunosuppressive effects and increased potential for postsurgical infection may be of concern.

Dental: Effects on Bleeding

No information available to require special precautions

Index Terms

Atlizumab; MRA; R-1569; RoActemra

FDA Approval Date

January 08, 2010

Brand Names: International

Find brand name(s) by country

For country code abbreviations ( show table )

References

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Refer to manufacturer’s labeling.


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