Chapter 1

COVID-19

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Coronavirus disease 2019 (COVID-19) is caused by the novel coronavirus SARS-CoV-2. The understanding of the epidemiology and pathophysiology of this infection is rapidly evolving. To access the most recent information, consult the following reliable websites:

- Public Health Agency of Canada (PHAC) at www.canada.ca/en/public-health
- Centers for Disease Control and Prevention (CDC) at www.cdc.gov
- World Health Organization (WHO) at www.who.int

In the community setting, advise all patients with symptoms, or those who have questions about COVID-19 testing and isolation, to contact their local public health unit for up-to-date recommendations. Remind patients who are planning to see a health-care provider for any other health-related concern during the pandemic to call ahead and confirm instructions about office or clinic procedures.

This chapter provides primary-care practitioners with information/links to guidance for:

- Prevention of COVID-19
- Outpatient management of acute COVID-19 and long COVID syndrome (Note: at the time of writing, the definition and nomenclature for prolonged COVID-19 symptoms have not been standardized. It has also been referred to as post-COVID conditions.)[1]
- Management of special populations, e.g., pediatric patients

Clinical Presentation

The National Institutes of Health (NIH) defines the spectrum of COVID-19 severities as follows:[2]

- “Asymptomatic or Presymptomatic Infection: Individuals who test positive for SARS-CoV-2 using a virologic test (i.e., a nucleic acid amplification test or an antigen test), but who have no symptoms that are consistent with COVID-19.” This may account for up to 17–20% of cases.[3][4]
- “Mild Illness: Individuals who have any of the various signs and symptoms of COVID-19 (e.g., fever, cough, sore throat, malaise, headache, muscle pain, nausea, vomiting, diarrhea, loss of taste and smell) but who do not have shortness of breath, dyspnea, or abnormal chest imaging.”
- “Moderate Illness: Individuals who show evidence of lower respiratory disease during clinical assessment or imaging and who have saturation of oxygen (\(\text{SpO}_{2}\)) ≥94% on room air at sea level.”
- “Severe Illness: Individuals who have \(\text{SpO}_{2}\) <94% on room air at sea level, a ratio of arterial partial pressure of oxygen to fraction of inspired oxygen (\(\text{PaO}_{2}/\text{FiO}_{2}\)) <300 mmHg, respiratory frequency >30 breaths per minute, or lung infiltrates >50%.”
- “Critical Illness: Individuals who have respiratory failure, septic shock, and/or multiple organ dysfunction.”

Note: patients may progress quickly from one category to the next and should be advised of the need to seek medical attention when symptoms worsen or progress. Some clinics supply patients with home oxygen monitors to facilitate early detection of clinical deterioration.[6]
The following risk factors increase the likelihood of symptomatic disease and progression to critical illness:

- Age >50 y, with greater incremental risk by increasing decades of life
- Male
- Obesity (BMI ≥30)
- Comorbidities: cardiovascular disease, diabetes, chronic respiratory disease, hypertension, cancer, chronic kidney disease

**Goals of Therapy**

- Prevent spread
- Alleviate symptoms
- Prevent complications where possible

**Community-Based Management**

During the acute phase of infection, many patients are managed by a dedicated COVID-19 clinic team and not by their primary-care provider, although this may change over time. Initial management is done either virtually or by phone while the patient is at home in self-isolation.\(^6\)

Criteria have been developed for community-based management of patients. The patient must: \(^6\)

- Stay well hydrated
- Reliably report worsening symptoms (e.g., evaluate language barriers, cognitive status) and carry out their usual activities of daily living
- Have access to appropriate resources and social support for self-isolation
- Be able to manage any comorbidities at home
- Have stable vitals and no signs of respiratory distress or persistent tachypnea
- (If pulse oximetry is available) have an $\text{SpO}_2$ >93% on room air; an $\text{SpO}_2$ of 90–93% on room air may be acceptable if a patient has a pre-existing chronic lung disease

If any of the following red flags are present during patient assessment, consider admission to hospital or assessment by the nearest urgent-care centre.\(^5\)

- Cold, clammy skin
- Confusion
- Decreased urine output
- Difficulty breathing
- Hemoptysis
- Nonblanching rash
- Shortness of breath at rest
- Worsening of respiratory symptoms

**Initial Assessment and Follow-Up**

Assessment and follow-up after a positive COVID-19 diagnosis includes monitoring for:

- Symptoms:
  - respiratory tract: cough, wheezing, shortness of breath (or change in breathing or activities that cause breathlessness), runny nose, sore throat, sputum
  - thermoregulatory: fever, chills, rigors
  - musculoskeletal: arthralgia, myalgia
- gastrointestinal: abdominal pain, nausea, vomiting, diarrhea, anorexia
- neurologic: fatigue, malaise, headache, confusion
- cardiac: chest pain
- dermatologic: rash
- ears, nose, throat (ENT): anosmia, dysgeusia, ear pain
- ophthalmologic: conjunctivitis
- psychiatric: anxiety, depression, insomnia

**Signs:**
- oxygen saturation: if a home $O_2$ saturation monitor is available/provided or on assessment of breathlessness while talking or walking

Based on clinical assessment, patients can continue to be managed at home with regular follow-up at intervals determined by the primary-care provider. For most patients, telehealth visits at days 4, 7 and 10 after onset of symptoms is reasonable. Patients >65 years of age, those with risk factors for more severe disease and those with moderate dyspnea at time of first evaluation may benefit from more frequent follow-up; consideration should be given to scheduling visits within the first 24 hours and every 24-48 hours thereafter, until symptom resolution. If there is evidence of clinical deterioration, follow-up may increase in frequency or arrangements may be made to transfer patient to an acute-care setting (as per the red flags identified above).[6]

A number of institutions and health regions, as seen with the COVID tool kit,[5] have established outpatient management algorithms and tools to aid virtual clinical assessment and triage.

**Management and Follow-Up of Hospitalized Patients Post-Discharge**

Once a patient is medically well and not on oxygen (unless previously on home oxygen), they can be discharged from hospital to an appropriate community setting. When patients are discharged back to their home, either alone or with family, they should have routine follow-up with their primary-care provider or, if available, a dedicated COVID-19 clinic. Discharge from hospital care discussions should take place in collaboration with the primary-care provider and/or community of care as well as public health. In some locations, patients may be transferred to a bed at home with home care support.

Ensure that the patient’s individual context, including access to transportation, living situation and family/household support, is taken into consideration when deciding when and how to discharge.

Patients diagnosed with COVID-19 are at risk of complications and should have routine follow-up at least 4 weeks after initial recovery or sooner if deemed necessary based on functional status, living arrangements and social supports. Older people are more likely to experience pronounced functional decline and may require coordinated rehabilitation or convalescent care.

**Long-Term Complications of COVID-19**

Many patients report long-term health effects that may persist for months after recovering from acute COVID-19. The pathology, epidemiology and risk factors for prolonged COVID-19 symptoms are not fully elucidated, and evidence is still emerging. Early reports suggest that approximately 10% of patients with mild COVID-19 who were not admitted to hospital have symptoms lasting more than 4 weeks and a smaller percentage have symptoms persisting beyond 12 weeks (and even up to 6 months).[7][8]

The most commonly reported symptoms of long-COVID include:[7]
- Respiratory: cough, shortness of breath
- Cardiac: chest pain, palpitations
■ ENT: anosmia, dysgeusia
■ Musculoskeletal: arthralgia
■ Neurologic: fatigue, headache, memory loss, cognitive difficulty
■ Psychiatric: depression, insomnia
■ Other: physical limitations of normal activity

Individuals may complain of 1 or many of these symptoms. It should be noted that this is not an all-inclusive list, as other symptoms have been less-frequently reported.

Routine follow-up instructions include self-monitoring for any of these symptoms or any symptoms that were not present prior to onset of illness that reflect a less than full return to baseline function. Questions related to return to activities, mobility and independence are important to identify long-term complications of COVID-19. In older patients, potential signs of ongoing symptomatic COVID-19 or long-COVID-19 include descriptions of gradual or ongoing decline in function, persistent deconditioning, worsening frailty, new or worsening dementia, and loss of interest in eating or drinking.

Supportive or symptomatic management (e.g., headache relief) may be all that is necessary for many of these symptoms, but rehabilitation or referral for further assessment may be required. During follow-up, screening questions for severe hypoxia or significant oxygen desaturation while exercising, chest pain, or severe lung disease will identify individuals who require further assessment. In pediatric patients, symptoms of multisystem inflammatory syndrome should be further investigated. The pathophysiology of this syndrome is unclear at this time. Practitioners are cautioned to avoid dismissing patient complaints or considering them to be predominantly associated with mental health; evidence of organ damage has been described with long-term consequences and is still being explored.

Patients who are discharged from hospital on new medications for COVID-19–related complications, such as antithrombotics for pulmonary embolism or deep-vein thrombosis, should be managed as per standard practice. For more information, see Venous Thromboembolism.

**Mental Health**

Among patients with COVID-19, there may be heightened levels of both new and worsening anxiety (see Anxiety Disorders), depression (see Depression), substance use disorder (see Alcohol-Related Disorders and Opioid-Related Disorders), and PTSD (see Post-traumatic Stress Disorder).

The Centre for Addiction and Mental Health has published resources for health-care providers for self- and patient-centred mental health support that can be accessed at www.camh.ca (search: resources for healthcare workers during COVID-19).

**Prevention**

Vaccination is currently the only effective pharmacologic measure for prevention of COVID-19. There is no evidence that any vitamin or herbal supplement is effective in the prevention of the disease. Several prevention trials are ongoing (see Government of Canada, Vaccines and treatments for COVID-19: List of all COVID-19 clinical trials authorized by Health Canada at www.canada.ca/en/health-canada/services/drugs-health-products/covid19-clinical-trials/list-authorized-trials.html#wb-auto-5).

Pharmacists Association specifically for patients is available at www.pharmacists.ca (search: awareness resources, top tips to prevent the spread of viruses).

**Vaccination against COVID-19**

COVID-19 immunization for all eligible persons is strongly recommended by public health in all Canadian jurisdictions. The National Advisory Committee on Immunization (NACI) recommends that individuals who have had COVID-19 also be vaccinated in order to maximize their immune response.[10] Patients with active COVID-19 infection are advised to defer their immunization until they are symptom-free in order to minimize the risk of transmitting the virus at a clinic and to ensure that symptoms are not confused with adverse effects of the vaccine.[10]

For a list of available vaccines for the prevention of COVID-19, see Table 1.

Health Canada’s website is an up-to-date resource for information on COVID-19 vaccines approved for use in Canada (available at www.canada.ca/en/health-canada/services/drugs-health-products/covid19-industry/drugs-vaccines-treatments/vaccines.html). Vaccine efficacy and effectiveness may be impacted as variants of concern emerge and circulate globally.

Other helpful resources include:

- Recommendations on the use of COVID-19 vaccines from the National Advisory Committee on Immunization (NACI) available at www.canada.ca/en/public-health
- Administration of COVID-19 vaccine in allergic or immunosuppressed patients from the Canadian Pharmacists Association available at www.pharmacists.ca
- Immunize Canada available at www.immunize.ca/covid-19
- Working with vaccine-hesitant parents: an update [MacDonald N, Desai S, Gerstein B; Canadian Paediatric Society, 2018]: evidence-based guidance for health-care practitioners who are initiating discussions with vaccine-hesitant parents

### Table 1: **COVID-19 Vaccines Available For Use in Canada**[^a]

<table>
<thead>
<tr>
<th>Vaccine[^b]</th>
<th>Dose and Schedule[^b][^c][^d]</th>
<th>Adverse Effects</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Adenovirus vector</strong></td>
<td></td>
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<tr>
<td>COVID-19 Vaccine (ChAdOx1-S [recombinant]) VAXZEVRIA (AstraZeneca), COVISHIELD</td>
<td><strong>Usual dose</strong> ≥18 y: 0.5 mL IM x 2 doses given 4–12 wk apart Moderately to severely immunocompromised individuals[^e]: a third dose consisting of an mRNA vaccine given at least 2–3 months after dose 2 when clinician determines the immune response can be maximized <strong>Booster dose</strong> Residents of long-term care and seniors in congregate settings: a booster dose of an authorized mRNA COVID-19 vaccine at least 6 months after the primary series has been completed[^12]</td>
<td>Pain, redness or swelling at injection site. Fatigue, headache, muscle or joint pain, low fever, chills. Very rare: serious blood clots associated with thrombocytopenia (VIPIT) occurring between 4 and 28 days postvaccination. Monitor and seek medical attention if any of the following symptoms occur: shortness of breath, chest pain, limb swelling or coldness, persistent abdominal pain, severe or worsening headaches or blurred vision, bruises, or blood blisters[^10][^13] Very rare: capillary leak syndrome (CLS) causes fluid leakage from small blood vessels resulting in swelling in arms and legs (usually), low blood pressure, and low albumin levels.[^10]</td>
<td>Acetaminophen or ibuprofen may be used in the management of pain or fever occurring after vaccination.[^10] An mRNA vaccine is now the preferred second dose for individuals who received a first dose of AstraZeneca/COVISHIELD vaccine. This mixed vaccine schedule has the potential to elicit a better immune response and will mitigate the potential risk of VIPIT associated with viral vector vaccines.[^10] If symptoms of thrombocytopenia (cont’d)</td>
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</table>
Table 1: COVID-19 Vaccines Available For Use in Canada[a] (cont’d)

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<thead>
<tr>
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<tbody>
<tr>
<td>mRNA spike protein</td>
<td></td>
<td></td>
<td>develop within 42 days of vaccination, advise patient to seek immediate medical attention.^[10]</td>
</tr>
<tr>
<td>elasomeran mRNA vaccine SPIKEVAX (Moderna)^[b]</td>
<td><strong>Usual dose</strong></td>
<td>Pain, redness or swelling at injection site. Fatigue, headache, muscle or joint pain, low fever, chills. Very rare: myocarditis or pericarditis. Cases occur after vaccination more often after the second dose, usually within a wk of vaccination, more often in adolescents and young adults under 30 y and more often in males than females. Symptoms include shortness of breath, chest pain, and sensation of rapid or abnormal heart rhythm.^[10][14]</td>
<td>Acetaminophen or ibuprofen may be used in the management of pain or fever occurring after vaccination.^[10] An mRNA vaccine is now the preferred second dose for individuals who received a first dose of AstraZeneca/COVISHIELD vaccine. This mixed vaccine schedule has the potential to elicit a better immune response and will mitigate the potential risk of VIPIT associated with viral vector vaccines.^[10]</td>
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</table>

NACI = National Advisory Committee on Immunization; VIPIT = vaccine-induced prothrombotic immune thrombocytopenia

^[b^] For more information, see the individual product monographs for each vaccine, available at https://cps.pharmacists.ca.
^[c^] NACI recommends that COVID-19 vaccines may be given at the same time as, or any time before or after, other live, non-live, adjuvanted or unadjuvanted vaccines.^[9]
^[d^] Actual dosing schedules may vary depending on vaccine availability and NACI recommendations.
^[e^] NACI statement includes list of conditions that can reduce immune response.^[11]

Patients and caregivers may have questions about the difference between COVID-19 vaccines, their expected side effects and other risks. Many excellent resources for frequently asked questions are available on provincial and regional websites (e.g., Ottawa Public Health’s Frequently asked questions about COVID-19 vaccination available at www.ottawapublichealth.ca (search: COVID-19 vaccine...
FAQs)). Some resources address questions about vaccinating children (e.g., COVID-19 vaccines from the Hospital for Sick Children available at www.aboutkidshealth.ca (search: vaccinating children)).

**Therapeutic Choices**

Guidance on the treatment of patients with known or suspected COVID-19 is available from:

- **Health Canada:** *Clinical management of patients with moderate to severe COVID-19 - interim guidance*
- **Centre for Effective Practice:** *Primary-care assessment and testing for COVID-19*
- **Infectious Diseases Society of America:** *Guidelines on the treatment and management of patients with COVID-19*
- **National Institute for Health and Care Excellence (NICE), U.K.:** *Coronavirus (COVID-19): rapid guidelines and evidence summaries*

Currently, there is no specific treatment for patients with COVID-19 in the outpatient setting. Supportive treatment should be based on the provider’s assessment of the patient’s clinical condition. For patients being cared for or recovering at home, standard treatment for cold-like symptoms and influenza-like illness is recommended.

- For management of fever and pain, preference is given to the use of **acetaminophen** over **nonsteroidal anti-inflammatory drugs (NSAIDs)**. Patients who regularly take an NSAID or acetylsalicylic acid should continue to do so as previously directed.
- **Dexamethasone** (or an equivalent corticosteroid) is **not** indicated for patients with COVID-19 who are not admitted to hospital, unless indicated for another condition (e.g., asthma exacerbation). Corticosteroid therapy is routinely indicated for patients admitted to hospital with COVID-19 who require supplemental oxygen. Dexamethasone is administered IV or PO at doses of 6 mg in adults or 0.15 mg/kg (up to 6 mg) in children for 10 days or until discharge, whichever is sooner.\(^\text{[16]}\)
- Investigation of other pharmacological options is ongoing and the reader is directed to refer to a reliable source of frequently updated information such as *Health Canada: Drug and vaccine authorizations for COVID-19: List of authorized drugs, vaccines and expanded indications*.
- For hospitalized patients, continuation of prophylactic antithrombotics postdischarge for COVID-19 is not recommended. Furthermore, antithrombotic therapy has not demonstrated benefit in outpatient management of COVID-19.

Recommendations for non-pharmacologic and pharmacologic management of specific COVID-19 symptoms can found in:

- **Fever:** see Fever
- **Cough:** see Acute Bronchitis
- **Headache:** see Headache in Adults
- **Myalgias:** there is no evidence for the management of myalgia due to COVID-19 specifically, but the following general information related to management of patients experiencing these symptoms may be helpful; see and Influenza
- **GI symptoms (less common):** see Nausea and Vomiting and Diarrhea

An infographic from the Canadian Pharmacists Association, *Managing COVID-19 at home*, containing this information for patients is also available at www.pharmacists.ca (search: awareness resources).

**Approved and Experimental Therapies for Acute COVID-19**

Few pharmacological agents have demonstrated a proven benefit in the management of acute COVID-19. Information, including links to product monographs, for those agents approved in Canada
for the management of COVID-19 can be found on the Health Canada’s list of authorized drugs, vaccines and expanded indications.

Currently, dexamethasone is the only drug that is considered a standard of care for patients hospitalized with acute COVID-19 with moderate to severe illness and requiring supplemental oxygen therapy.

Other agents, such as antivirals or monoclonal antibodies, have received Emergency Use Authorization and may be considered based on clinical circumstances and availability (e.g., bamlanivimab, casirivimab/imdevimab, remdesivir, sotrovimab). Recommendations and evidence-based decisions on place in therapy for these agents will change as new data emerges. It is important to identify reliable, evidence-based guidelines for the management of acute COVID-19 in outpatient and inpatient settings. Many such provincial and regional evidence-based resources exist (e.g., Ontario COVID-19 Science Advisory Table).

Tocilizumab is an interleukin-6 inhibitor marketed in Canada. Although it does not have an indication for the treatment of COVID-19, it is frequently used based on international clinical trial data.[17]

Other experimental therapies have been used to prevent progression or spread of the disease in severely ill patients in the acute-care setting, in mild or moderate illness, or in uninfected patients. Any use of these medications for these purposes outside of a clinical trial or the advice of an infectious disease specialist is inappropriate.[18]

Information about COVID-19–related clinical trials can be found on the following web pages:
- Government of Canada: Drugs and vaccines for COVID-19: List of authorized clinical trials
- Cochrane Systematic Review Database: Living mapping and living systematic review of COVID-19 studies
- Global Coronavirus COVID-19 Clinical Trial Tracker

The following agents have not demonstrated clinically significant benefit in the prevention or treatment of COVID-19:
- Azithromycin
- Chloroquine
- Hydroxychloroquine
- Interferons
- Ivermectin
- Lopinavir/ritonavir
- Rifampin
- Vitamin C
- Zinc

Special Populations

Pediatrics

Most children with COVID-19 can be managed at home with supportive care.[19]

Some pediatric populations may be at higher risk for severe COVID-19 and therefore may require hospitalization in order to monitor for deterioration. This includes children who:
- Are ≤1 year of age
- Have obesity
- Are on home ventilation
Have been diagnosed with:
- comorbid cardiac or lung disease, e.g., asthma, cystic fibrosis
- severe genetic, metabolic, neurological or neuromuscular disorders
- other chronic conditions, e.g., diabetes, sickle cell disease, chronic kidney disease, immunosuppressive conditions such as post-transplant

For treatment of fever in pediatric patients, see Fever.

**Long-Term Complications of COVID-19 in Children**

As discussed in Long-Term Complications of COVID-19, some pediatric patients will experience long-COVID syndrome. In children, this most frequently presents as a multisystem inflammatory syndrome (MIS-C). After initial recovery from acute COVID-19, pediatric patients should be assessed for the emergence of signs and symptoms of long COVID-19 in order to ensure appropriate management.[20]

Important signs and symptoms of MIS-C include the following:
- Thermoregulatory: fever that lasts ≥3 days
- Cardiac: tachycardia
- Gastrointestinal: abdominal pain, vomiting, diarrhea
- Immune-mediated: skin rash; redness or swelling of the lips/tongue or hands/feet
- Neurologic: fatigue, headache, dizziness or lightheadedness
- Ophthalmologic: conjunctivitis
- Respiratory: tachypnea
- Other: lymphadenopathy

Immediate medical attention is needed if the child is experiencing any of the following signs or symptoms: severe abdominal pain, difficulty breathing, cyanosis of lips/face, neurologic findings of confusion, or altered level of consciousness.

**Choices during Pregnancy and Breastfeeding**

**COVID-19 Infection in Pregnancy**

Although pregnant individuals are not at higher risk of having COVID-19, the risk of developing severe disease is greater compared to nonpregnant patients of the same age.[21][22] In general, most babies of patients who have COVID-19 are born healthy at term; however, there is an increased risk of preterm delivery.[21][23] Risk factors for severe COVID-19 disease in pregnancy include asthma, diabetes, obesity, advanced maternal age, hypertension and heart disease.[21]

Vertical transmission of COVID-19 is a rare event.[24][25] There is, however, a risk of newborn person-to-person transmission;[22] therefore, all babies born to patients with confirmed COVID-19 should be tested for SARS CoV-2 within 24 hours of delivery.[26]

**COVID-19 Infection in Breastfeeding**

Although current information is limited, it is unlikely that COVID-19 is transmitted via breast milk.[22] It is recommended that individuals with suspected or confirmed COVID-19 continue to breastfeed their infant if they are able, taking appropriate precautions while doing so.[27][28] If an individual is too ill to breastfeed, they may choose to use a breast pump.[27] Appropriate precautions include:[26]
- Washing hands prior to holding the baby
- Washing hands before handling bottles, breast pump or other equipment
Wearing a mask while holding or feeding the baby
While holding or feeding the baby, coughing and sneezing away from the baby
Good breast and skin cleaning practices prior to holding or feeding the baby
Ensuring breast pumps, bottles and any other supplies are clean and not shared with others

Prevention of COVID-19

Pregnant or breastfeeding individuals should be offered vaccination against COVID-19 at any time during pregnancy if they are eligible and no other contraindications exist.[10][29] However, in individuals at a particularly high risk of acquiring COVID-19 (e.g., front-line health-care or essential workers) or of developing severe infection (e.g., comorbidities such as BMI ≥40, diabetes), vaccination may be considered after discussing the risks and benefits with the patient.[10][30]

Treatment of COVID-19

Information on the safety of approved and investigational therapies is listed below:[31][32][33][34]

- Dexamethasone is standard of care for patients admitted to hospital with COVID-19. No major malformations are associated with use of dexamethasone in pregnancy, but a possible increased risk of cleft palate has been described.[35] There is no data on the transfer of dexamethasone into breast milk, though it is not expected to reach levels that are harmful to the infant.
- Remdesivir is an antiviral that has been approved for the treatment of severe COVID-19. There is no data on the use of remdesivir in pregnancy, and the benefit versus risk must be weighed for each individual. Similarly, in breastfeeding, transfer into breast milk is unknown but there is a single case report of direct use in an infant with Ebola without adverse effects.[36]
- Bamlanivimab is the only other agent currently approved for the management of COVID-19. This monoclonal antibody does have potential for placental transfer, and the risk to the fetus is unknown. Exposure in breast milk is expected to be limited due to the size of the molecule; however, there is no human data and therefore the benefit to the patient and the risk to the infant must be weighed.
- There is limited data with use of tocilizumab in pregnancy, and available data does not demonstrate an increased risk of major defects. There is potential for placental transfer risk, which increases as pregnancy progresses; therefore, fetal risk cannot be ruled out. A small amount of tocilizumab may be transferred into breast milk, but no adverse effects in infants have been reported to date.

For information on the treatment of:
- Cough in pregnancy and breastfeeding, see Acute Bronchitis
- Fever in pregnancy and breastfeeding, see Fever
- Headache in pregnancy and breastfeeding, see Headache in Adults
- Myalgia in pregnancy and breastfeeding, see Acute Pain and Influenza

A discussion of general principles on the use of medications in these special populations can be found in Drug Use during Pregnancy and Drug Use during Breastfeeding. Other specialized reference sources are also provided in these appendices.

Suggested Readings


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