

Managing Side-effects of Cancer Drugs

Breast and Colorectal Cancer

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Disclosure statement

I have/had an affiliation with the following:

Janssen	as a speaker
Astra-Zeneca	as a reviewer for scientific content
Pear Healthcare Solutions/Pfizer	as a reviewer for scientific content
Merck	as a speaker, consultant

Presentation

- Case presentations in breast and colon cancer.
- Define solutions for managing side effects of cancer drugs.
- Define useful tools for helping in decision making for side effect management.

Breast cancer case #1: Mrs AB

Mrs AB is a 67 year old with metastatic ER+, PR+, Her2+ breast cancer previously treated with anthracycline, taxane, trastuzumab based chemotherapies and hormonal therapy.


Her medical oncologist decides to start lapatinib and capecitabine. After a few weeks of therapy, she calls the clinic complaining of painful redness and peeling of the skin on soles of hands and feet.

Breast cancer case #1: Mrs AB

Your recommendation is to:

- 1- Do nothing.
- 2- Take some acetaminophen and call us in a week if still not better.
- 3- Call oncologist, get Dilaudid rx and fax to pharmacy.
- 4- Soak hands, feet in lukewarm water, apply hydrating cream, consider dose adjustment of capecitabine at next cycle.

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Accueil Sites tumoraux Info générale/support Algos Essais cliniques **Antidote** Outils

Accueil > Babillard

Babillard	Mémos importants
Liste des membres du GEOQ	Annonces de conférences
Conférences (archives)	<p>Dr Ronan Foley : Clinician perspectives in advancing treatments in relapsed/refractory PTCL</p> <p>Dates Du 17 févr. au 18 févr. 2021</p> <p>Organisme(s) responsable(s) Programme de Professeurs Invités en Oncologie (PPIO/VSPQ)</p> <p>Détails Voici un rappel pour les prochaines sessions virtuelles du VSPO avec le Dr Ronan Foley :</p> <ul style="list-style-type: none"> Mercredi, le 17 février 2021, de 8h à 9h et de 17h à 18h Jeu. le 18 février 2021, de 12h à 13h
Avis légaux	
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Accueil > B
Babillard
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Anus	LLA	ORL	Rein	T.Stromale GI
Autre	LLC	Ovaire	Sarcome	T Neuroendocr.
Cerveau (SNC)	LMA	Pancréas	Kaposi	Tumeurs solides
Col	LMC	Sein	Uretère	
Côlon et rectum	LNH	Pédiatrique diversSMD	Utérus (sarcome)	
Endomètre	Mélanome	Pénis	Testicule	Vagin
Estomac	Mésothéliome	Poumon - pc	Thymome	Vessie
Foie	Myélome	Poumon - npc	Thyroïde	Voies biliaires
Hémato/Greffe	NMP (sauf LMC)	Primaire Inconnu	Tricholeucémie	Vulve
Hodgkin	Oesophage	Prostate	Trophoblastique	

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Her2+

Pertuzumab + trastuzumab + docétaxel					4%
Pertuzumab + trastuzumab + paclitaxel					1%
Trastuzumab + paclitaxel hebdomadaire					1%
Trastuzumab + docétaxel					1%
Trastuzumab + vinorelbine					1%
Trastuzumab + capécitabine					1%
T-DM1 (trastuzumab emtansine)					5%
Lapatinib + capécitabine					1%



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Accueil > Sein > Lapatinib + capécitabine

Protocole

Guide d'administration

Conseils aux patients

Ordonnances

Plan de transfert

Lapatinib + capécitabine

Ce protocole a été visionné 74 fois

(1% par rapport à l'ensemble des protocoles de traitement de ce site tumoral visionnés au cours des 60 derniers jours)

Dernière modification : 13-12-2019
SEIN

Lapatinib + Capécitabine		
Capécitabine	1000 mg/m ² PO BID	J1-14
Lapatinib	1250 mg PO die	en continu
Cycle de 21 jours.		
NCCN 12/2006. Breast Cancer Res Treat 12/2008		

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Guide d'administration

Protocole : *Capécitabine/Lapatinib* (*Xeloda^{md} / Tykerb^{md}*)

- **Le syndrome mains-pieds (érythrodysesthésie palmoplantaire)** est apparu chez 53% des patientes qui ont reçu l'association lapatinib/capécitabine. L'apparition de ce syndrome nécessite plus souvent l'interruption temporaire qu'une réduction de dose^{1,2,5} (voir section 3 : Guide d'ajustement posologique).

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Accueil > Sein > Lapatinib + capécitabine > Conseils aux patients

Protocole

Guide d'administration

Conseils aux patients

Lapatinib + capécitabine

Feuillelet d'information destiné au patient [↗](#)

General Information for Patients [↗](#)

Journal de bord - Xeloda [↗](#)

Treatment diary - Xeloda [↗](#)



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ADVERSE EFFECTS	MANAGEMENT
<p>Hand and foot syndrome may appear during your treatment. You may experience numbness, tingling, swelling, redness on your hands and feet. Pain, blisters, desquamation may accompany these symptoms.</p>	<p>To prevent this syndrome:</p> <ul style="list-style-type: none"> • Avoid wearing tight clothes or shoes. • Wear absorbent sponge rubber soles, and/or gel pads to relieve pressure points. • Pat dry your hands and feet rather than rubbing them. • Wear light clothing or keep skin free of clothing to avoid perspiring. • Wear rubber gloves while washing dishes. • Wash your hands and feet in lukewarm water; avoid hot water. • Keep your skin well hydrated by regularly using a non perfumed emollient and thick cream. • Avoid strenuous exercises or activities that put too much of an ordeal on your hands and feet. <p>If symptoms occur:</p> <ul style="list-style-type: none"> • If these symptoms occur and affect your daily activities, stop taking the medication and notify a member of your healthcare team as soon as possible.

Breast cancer case #1: Mrs AB

Your recommendation is to:

- 1- Do nothing.
- 2- Take some acetaminophen and call us in a week if still not better.
- 3- Call oncologist, get Dilaudid rx and fax to pharmacy.
- 4- **Soak hands, feet in lukewarm water, apply hydrating cream, consider dose adjustment of capecitabine at next cycle.**

Colon cancer case #1: Mr CD

Mr CD is a 74 year old diagnosed with metastatic colon cancer. His disease is RAS wild-type. He is DYPD negative. He is to start on palliative combination chemotherapy of FOLFIRI-Panitumumab q2wks.

Mr CD receives his first cycle and calls you back 3 days later complaining of diarrhea, many episodes in the last 24 hours.

Colon cancer case #1: Mr CD

Your recommendation is:

- 1- Go to ER where they will give you Methylprednisolone 1 mg/kg iv q6h.
- 2- Budesonide 6 mg po bid.
- 3- Loperamide 4 mg po stat then 2 mg po q2h until 12 hrs free of diarrhea.
- 4- Octreotide 100 mg sc q8h.
- 5- Atropine 0.4 mg sc stat x 1 dose.

The screenshot shows the BC Cancer Agency website homepage. At the top, the text "BC Cancer Agency www.bccancer.bc.ca" is displayed. Below this is the BC Cancer logo, social media icons for LinkedIn, Twitter, and Facebook, and a search bar. A navigation menu includes links for "Our Services", "Health Info", "Our Research", "About", "Contact", "Health Professionals", "Donate", and "Careers". The main content area features a large heading "A comprehensive cancer control program for BC" with a sub-heading "BC Cancer's mandate covers the full spectrum of cancer care from prevention, screening, diagnosis and treatment, to research and education, to supportive and palliative care." and a button "Learn more about BC Cancer". To the right, there is a "Popular topics" section with links for "COVID-19 and cancer treatments - informat", "Patient guide", "Cancer screening", "Chemotherapy protocols", "Cancer drug manual", and "Refer a patient". A chatbot window is open on the right, displaying a message: "Hi, I am the BC Cancer Digital Agent! I can answer your questions about cancer treatment and COVID-19. Note - I also have answers to general COVID-19 questions from the BC CDC and Province of BC. If the response is not specific enough - try rephrasing your question more specific to cancer treatment."

BC Cancer Agency www.bccancer.bc.ca

Cancer Drug Manual

The Cancer Drug Manual® provides concise, evaluative information on drugs used in oncology. Inclusion in this index is not an indication of the funding status of a drug through BC Cancer. To determine drug coverage, see Benefit Drug List.



[Go to the Drug Index >](#)

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BC Cancer Agency www.bccancer.bc.ca

[Irinotecan Liposome Monograph >](#)

[Irinotecan Monograph >](#)

[Irinotecan Patient Handout >](#)

[Irinotecan Patient Handout \(Chinese\)](#)

[Irinotecan Patient Handout \(Punjabi\)](#)

[Ixabepilone Monograph](#)

DRUG NAME: Irinotecan

SYNONYM: Irinotecan hydrochloride trihydrate, CPT-11

COMMON TRADE NAME(S): CAMPTOSAR®

CLASSIFICATION: Topoisomerase I inhibitor

Special pediatric considerations are noted when applicable.

MECHANISM OF ACTION:

Irinotecan is a semisynthetic, water-soluble derivative of camptothecin, a plant such as *Camptotheca acuminata*.¹ Irinotecan and its active metabolite, topoisomerase I, an enzyme that produces reversible single-strand breaks. Irinotecan and its active metabolite relieve torsional strain and allow DNA replication to proceed. Irinotecan and its active metabolite form a topoisomerase I-DNA complex and prevent religation of the DNA strand, and cell death. The precise contribution of SN-38 to the activity of irinotecan is cell cycle phase-specific (S-phase).³

BC Cancer Agency www.bccancer.bc.ca

Late onset diarrhea: This occurs more than 24 hours after administration of irinotecan and can be prolonged, leading to potentially life-threatening dehydration and electrolyte imbalance.¹ The diarrhea has a median onset of 5 and 11 days after the 3-weekly³⁰ and weekly³⁴ dosing schedule of irinotecan, respectively. The median duration of diarrhea for the one-weekly schedule was 3 days, with severe diarrhea (grades 3-4) lasting for 7 days.¹ Late onset diarrhea is thought to be related to abnormal ion transport in the injured intestinal mucosa, leading to increased secretion of water and electrolytes into the intestinal lumen.³⁵ Management of diarrhea should include prompt treatment with high dose loperamide. Patients with severe diarrhea should be carefully monitored for dehydration and given fluid and electrolyte replacement as needed. Premedication with loperamide prior to irinotecan treatment is not required. However, patients should be instructed to have loperamide on hand and start the following treatment at the first poorly formed or loose stool, or earliest onset of more frequent bowel movement than usual (NB, loperamide dose used is higher than recommended by the manufacturer):

- o loperamide 4 mg immediately
- o then 2 mg every 2 hours until diarrhea-free for 12 hours
- o may take 4 mg every 4 hours at night.^{1,36}

An alternative regimen of loperamide 4 mg every 3 hours plus diphenhydramine 25 mg every 6 hours has also been used in a limited number of patients.¹² Laxatives may increase the risk of severe diarrhea¹ and patients should be counselled about laxative use during irinotecan treatment.

BC Cancer Agency www.bccancer.bc.ca

Chemotherapy Protocols

BC Cancer Systemic Therapy Program has placed summaries of specific treatment protocols on the website.

Gastrointestinal

Protocols

- [Resectable Colorectal \(Adjuvant\)](#)
- [Unresectable Colorectal \(Advanced\)](#)
- [Esophagus, Stomach](#)
- [Pancreas, Gall Bladder, Biliary Tract](#)
- [Liver](#)
- [Carcinoid & Neuroendocrine Tumours](#)
- [Others](#)

UGIFFIRPAN

Palliative Combination Chemotherapy for Metastatic Colorectal Cancer Using Irinotecan, Fluorouracil, Leucovorin, and PANitumumab

- [UGIFFIRPAN Protocol](#)
- [UGIFFIRPAN Preprinted order](#)
- [UGIFFIRPAN Patient Handout](#)

BC Cancer Agency www.bccancer.bc.ca

PRECAUTIONS

1. **Diarrhea:** may be life threatening and requires prompt, aggressive treatment.
 - **Early diarrhea** or abdominal cramps occurring within the first 24 hours is treated with **atropine** 0.3 to 1.2 mg IV or SC. Prophylactic atropine may be required for subsequent treatments.
 - **Late diarrhea** has an onset of 5 to 11 days post-treatment, a duration of 3 to 7 days and must be treated promptly with **loperamide** (eg, IMODIUM®). The loperamide dose is higher than recommended by the manufacturer. Instruct patient to have loperamide on hand and start treatment at the first poorly formed or loose stool, or earliest onset of more frequent stool than usual:
 - **4 mg stat**
 - **then 2 mg every 2 hours until diarrhea-free for 12 hours**
 - may take 4 mg every 4 hours at night



Colon cancer case #1: Mr CD

Your recommendation is:

- 1- Go to ER where they will give you Methylprednisolone 1 mg/kg iv q6h.
- 2- Budesonide 6 mg po bid.
- 3- Loperamide 4 mg po stat then 2 mg po q2h until 12 hrs free of diarrhea.**
- 4- Octreotide 100 mg sc q8h.
- 5- Atropine 0.4 mg sc stat x 1 dose.

Breast cancer case #2: Mrs EL

Mrs EL is a 68 year old with metastatic breast cancer which is ER+/PR+ but Her2-. She has started a new regimen of a combination of oral agents, Everolimus and Exemestane. She calls you at her community pharmacy and mentions she has painful mouth sores and would like to know what she can do.

Breast cancer case #2: Mrs EL

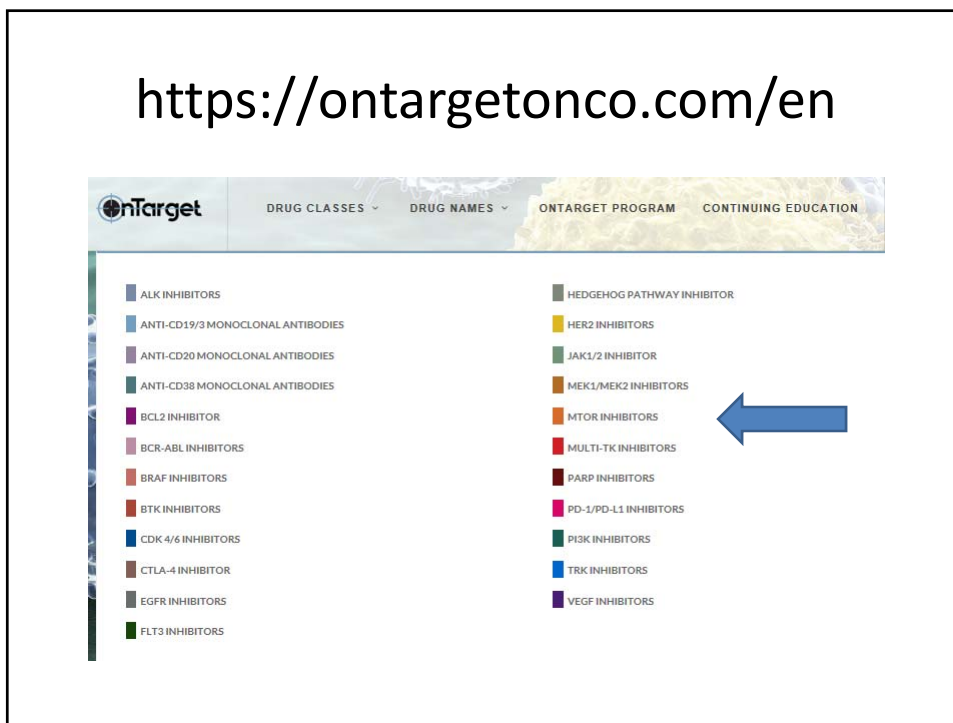
Your call her oncologist with the following recommendation:

- 1- Salt and bicarbonate rinses qid.
- 2- Magic mouthwash 15-30 ml po qid prn.
- 3- Dexamethasone mouthwash 0.5 mg/5 ml 10 ml po qid.
- 4- Lidocaine viscous 2% 15 ml po qid prn.

<https://ontargetonco.com/en>



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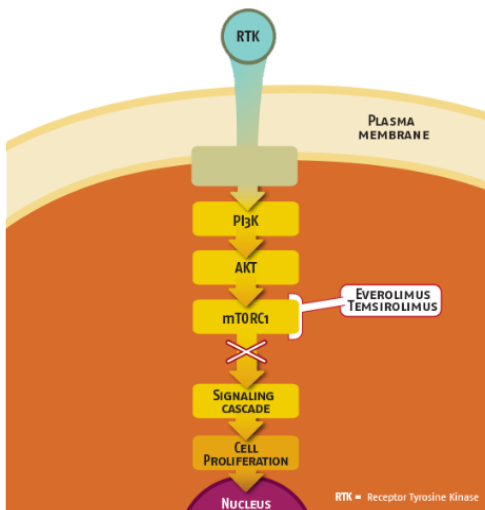
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Drugs and Mechanism of Action

Within the cell, everolimus and temsirolimus bind to a specific protein, FKBP-12, to produce a protein-drug complex. This complex binds to the mTOR kinase to neutralize its activity.^{1,2,4,5}

Because the mTOR pathway is dysfunctional in many cancers, mTOR has become an important target for therapy.³ In cancer cells, deactivation of the mTOR signaling network by mTOR inhibitors induces cell death and suppresses:^{3,4}

- Protein synthesis (cell growth)
- Cell proliferation
- Angiogenesis
- Spread of cancer cells



<https://ontargetonco.com/en>

mTOR Inhibitors

Everolimus (Afinitor®) - Temsirolimus (Torisel®)

The Target

The Drugs

Drug Administration

Interesting Facts

When to Refer

Adverse Events

Management of AEs

References

Quiz

mTOR in cancer

In the 1970s, rapamycin, a natural product with antiproliferative effects, was discovered in the soil of Easter Island. Two decades later, the mammalian target of rapamycin (mTOR) was identified as a serine-threonine protein kinase that regulates a cell-signaling pathway that controls cell-cycle progression, cell proliferation, and angiogenesis.^{3,4}

The mTOR signaling pathway is incredibly complex, but one of its essential functions is to balance growth factor and nutrient signals. Growth factors activate mTOR, whereas low nutrient availability, e.g., low glucose or oxygen supplies, inhibits mTOR. When well regulated, this signaling network ensures that cell growth occurs under favourable conditions. When conditions are unfavorable, mTOR slows growth.⁴

The mTOR pathway acts like an on-off switch to regulate cell-cycle progression (cell division) in response to growth signals. It regulates the:⁴

- Cellular machinery that controls protein synthesis
- Proteins that control cell division
- Tumor suppressor functions that control new blood-vessel growth and cell survival

<https://ontargetonco.com/en>

Adverse Events

The onset and duration of common adverse events of mTOR inhibitors are often predictable and almost always reversible after treatment ends. There are many ways to minimize or prevent these adverse events^{1,2} The common adverse events of everolimus generally appear to be similar in type and severity to those of temsirolimus.^{1,2,5}

Successful mTOR inhibition appears to be associated with side effects such as glucose intolerance/hyperglycemia and hyperlipidemia and the development of these adverse events are suggestive of the efficacy of the therapy. Since patients who take mTOR inhibitors have advanced cancer, it is preferable to control the adverse events than to reduce the therapeutic dosage or stop treatment.^{4,5}

The following table describes the common adverse events of mTOR inhibitors with an overall frequency of $\geq 10\%$ compared to the standard of care.^{1,2}

Everolimus ¹	Temsirolimus ²
Blood and lymphatic disorders <ul style="list-style-type: none"> Anemia Leukopenia Lymphocytopenia Neutropenia Thrombocytopenia 	Blood and lymphatic disorders <ul style="list-style-type: none"> Anemia Leukopenia Lymphopenia Neutropenia Thrombocytopenia
Gastrointestinal disorders <ul style="list-style-type: none"> Diarrhea Stomatitis 	Gastrointestinal disorders <ul style="list-style-type: none"> Abdominal pain Constipation Nausea

<https://ontargetonco.com/en>

Stomatitis

In patients treated with mTOR inhibitors, the integrity of mucous membranes in the mouth and gastrointestinal tract may be compromised, leading to inflammation and stomatitis (mouth sores).^{1,2,4,23} This adverse event occurs in up to 63% of everolimus-treated patients and in up to 41% of temsirolimus-treated patients and can be a dose-limiting condition.^{1,2,4} Overall, this is the most common adverse event with mTOR inhibitor therapy.²⁴

Prevention

Advise patients to:^{22,25,26,27,28}

- Avoid cheek or lip biting
- Avoid mouth breathing
- Maintain good oral hygiene
- Maintain dentures by brushing daily and soaking in antimicrobial solution for at least 30 minutes/day and rinse thoroughly
- Avoid spicy and highly textured foods
- Avoid alcohol-containing mouthwashes
- Avoid electric toothbrushes and toothpicks

Management

Prevention (everolimus)

Dexamethasone rinse as prophylaxis to start 1 day before starting everolimus treatment²⁷

- 10 mL of alcohol-free dexamethasone 0.5 mg per 5 mL oral solution (magistral)
- Swish for 2 minutes and spit four times daily
- Nothing by mouth for 1 h after dosing of dexamethasone oral solution for a total of 4 hours per day

Breast cancer case #2: Mrs EL

Your call her oncologist with the following recommendation:

- 1- Salt and bicarbonate rinses qid.
- 2- Magic mouthwash 15-30 ml po qid prn.
- 3- Dexamethasone mouthwash 0.5 mg/5 ml 10 ml po qid.**
- 4- Lidocaine viscous 2% 15 ml po qid prn.

Colon cancer case #2: Mr EF

Mr EF is a 57 year old diagnosed with metastatic colon cancer. Over many years he has received many lines of chemotherapy regimens with variable degrees of success. He is now offered a palliative regimen and shows up at your community pharmacy with the following prescription:

Lonsurf 35 mg/m² po bid

What is wrong with this prescription?

Colon cancer case #2: Mr EF

You call back the prescriber with the following recommendation; your order should be:

- 1- Lonsurf 1000 mg/m² po bid x 14 days q21d
- 2- Lonsurf 35 mg/m² po bid x 14 days q21d
- 3- Lonsurf 35 mg/m² po bid d1-5, 8-12 q28d
- 4- Lonsurf 70 mg/m² po die x 21d q28d

www.nccn.org

The screenshot displays the NCCN website homepage. At the top, the NCCN logo and the text "National Comprehensive Cancer Network" are visible. Below this is a navigation bar with several menu items: "NCCN Guidelines", "NCCN Compendia", "NCCN Templates", "Educational Events & Programs", "Subscriptions & Products", "Clinical & Business Resources", "NCCN Global", "NCCN Oncology Research Program", and "Patient Resources". A search bar is located on the right side of the navigation bar. Below the navigation bar, the main content area is divided into several sections. On the left, there is a "NCCN Guidelines" section with links to "About The NCCN Clinical Practice Guidelines in Oncology (NCCN Guidelines)", "Development and Update of the NCCN Guidelines", "Recent Updates to NCCN Guidelines", "NCCN Guidelines Panels - Meeting Schedule", "NCCN Categories of Evidence and Consensus", "NCCN Categories of Preference", "NCCN Guidelines Steering Committee", and "Transparency: Process and Recommendations". The central section is titled "NCCN Guidelines & Clinical Resources" and contains a "NCCN Guidelines" section with a description of the guidelines and a "Quick Links" section with a search bar and a list of links including "COVID-19 Resources", "NCCN Guidelines - FREE", "NCCN Compendium", "NCCN Biomarkers Compendium", "NCCN Imaging AUC", "NCCN Radiation Therapy Compendium", "NCCN Templates", "Educational Events", "CME/CE Programs", and "NCCN Guidelines for Patients". On the right side, there is a "Quick Links" section with a search bar and a list of links including "COVID-19 Resources", "NCCN Guidelines - FREE", "NCCN Compendium", "NCCN Biomarkers Compendium", "NCCN Imaging AUC", "NCCN Radiation Therapy Compendium", "NCCN Templates", "Educational Events", "CME/CE Programs", and "NCCN Guidelines for Patients".

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National Comprehensive
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NCCN Clinical Practice Guidelines in Oncology (NCCN Guidelines®)

Colon Cancer

Version 2.2021 — January 21, 2021

NCCN.org

NCCN Guidelines for Patients® available at www.nccn.org/patients

Continue

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NCCN Guidelines Version 2.021

Colon Cancer

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NCCN Colon Cancer Panel Members
Summary of the Guidelines Updates
Clinical Presentations and Primary Treatment:

- [Pedunculated Polyp \(Adenoma\) with Invasive Cancer \(COL-1\)](#)
- [Sessile Polyp \(Adenoma\) with Invasive Cancer \(COL-1\)](#)
- [Colon Cancer Appropriate for Resection \(COL-2\)](#)
- [Suspected or Proven Metastatic Synchronous Adenocarcinoma \(COL-4\)](#)

[Pathologic Stage, Adjuvant Treatment \(COL-3\)](#)
[Surveillance \(COL-8\)](#)
[Recurrence and Workup \(COL-9\)](#)
[Metachronous Metastases \(COL-9\)](#)

[Principles of Imaging \(COL-A\)](#)
[Principles of Pathologic Review \(COL-B\)](#)
[Principles of Surgery \(COL-C\)](#)
[Systemic Therapy for Advanced or Metastatic Disease \(COL-D\)](#)
[Principles of Radiation and Chemoradiation Therapy \(COL-E\)](#)
[Principles of Risk Assessment for Stage II Disease \(COL-F\)](#)
[Principles of Adjuvant Therapy \(COL-G\)](#)
[Principles of Survivorship \(COL-H\)](#)

[Staging \(ST-1\)](#)

Clinical Trials: NCCN believes that the best management for any patient with cancer is in a clinical trial. Participation in clinical trials is especially encouraged.

To find clinical trials online at NCCN Member Institutions, [click here](http://nccn.org/clinical_trials/member_institutions.aspx).

NCCN Categories of Evidence and Consensus: All recommendations are category 2A unless otherwise indicated.

See [NCCN Categories of Evidence and Consensus](#).

NCCN Categories of Preference: All recommendations are considered appropriate.

See [NCCN Categories of Preference](#).

The NCCN Guidelines® are a statement of evidence and consensus of the authors regarding their views of currently accepted approaches to treatment. Any clinician seeking to apply or consult the NCCN Guidelines is expected to use independent medical judgment in the context of individual clinical circumstances to determine any patient's care or treatment. The National Comprehensive Cancer Network® (NCCN®) makes no representations or warranties of any kind regarding their content, use or application and disclaims any responsibility for their application or use in any way. The NCCN Guidelines are copyrighted by National Comprehensive Cancer Network®, All rights reserved. The NCCN Guidelines and the illustrations herein may not be reproduced in any form without the express written permission of NCCN, ©2021.

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NCCN National Comprehensive Cancer Network® **NCCN Guidelines Version 2.2021 Colon Cancer**

Discussion This discussion corresponds to the NCCN Guidelines for Colon Cancer. Last updated January 21, 2021

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SYSTEMIC THERAPY FOR ADVANCED OR METASTATIC DISEASE - CHEMOTHERAPY REGIMENS

Regorafenib
Regorafenib 160 mg PO daily on days 1–21³¹
or
First cycle: Regorafenib 80 mg PO daily on days 1–7, followed by 120 mg PO daily on days 8–14, followed by 160 mg PO daily on days 15–21.³²
Subsequent cycles: Regorafenib 160 mg PO daily on days 1–21
Repeat every 28 days

Trifluridine + tipiracil ± bevacizumab^d, 33,34
Trifluridine + tipiracil 35 mg/m² up to a maximum dose of 80 mg per dose (based on the trifluridine component) PO twice daily days 1–5 and 8–12
Bevacizumab 5 mg/kg on days 1 and 15
Repeat every 28 days

Pembrolizumab³⁵ (dMMR/MSI-H only)
Pembrolizumab 2 mg/kg IV every 3 weeks
or Pembrolizumab 200 mg IV every 3 weeks
or Pembrolizumab 400 mg IV every 6 weeks

Nivolumab³⁶ (dMMR/MSI-H only)
Nivolumab 3 mg/kg every 2 weeks
or Nivolumab 240 mg IV every 2 weeks
or Nivolumab 480 mg IV every 4 weeks

Nivolumab + Ipilimumab
Nivolumab 3 mg
30-minute IV inf
by Nivolumab 3 :
Nivolumab 480 n

Trifluridine + tipiracil ± bevacizumab^d, 33,34
Trifluridine + tipiracil 35 mg/m² up to a maximum dose of 80 mg per dose (based on the trifluridine component)
PO twice daily days 1–5 and 8–12
Bevacizumab 5 mg/kg on days 1 and 15
Repeat every 28 days

Trastuzumab³⁸ + pertuzumab³⁸
(HER2-amplified and RAS and BRAF WT)
Trastuzumab 8 mg/kg IV loading dose on day 1 of cycle 1, followed by 6 mg/kg IV every 21 days
Pertuzumab 840 mg IV loading dose on day 1 of cycle 1, followed by 420 mg IV every 21 days

Trastuzumab³⁸ + lapatinib³⁹
(HER2-amplified and RAS and BRAF WT)
Trastuzumab 4 mg/kg IV loading dose on day 1 of cycle 1, followed by 2 mg/kg IV weekly
Lapatinib 1000 mg PO daily

Fam-trastuzumab deruxtecan-nxk⁴⁰
Fam-trastuzumab deruxtecan-nxk 6.4 mg/kg IV on Day 1
Repeat every 21 days

Encorafenib + cetuximab⁴¹⁻⁴³
(RAF V600E mutation positive)
Encorafenib 300 mg PO daily
Cetuximab 400 mg/m² followed by 250 mg/m² weekly

Encorafenib + panitumumab⁴¹⁻⁴³
(RAF V600E mutation positive)
Encorafenib 300 mg PO daily
Panitumumab 6 mg/kg IV every 14 days

^dAn FDA-approved
NOTE: All recommendations
Clinical Trials: NCCN

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Colon cancer case #2: Mr EF

You call back the prescriber with the following recommendation; your order should be:

- 1- Lonsurf 1000 mg/m² po bid x 14 days q21d
- 2- Lonsurf 35 mg/m² po bid x 14 days q21d
- 3- Lonsurf 35 mg/m² po bid d1-5, 8-12 q28d**
- 4- Lonsurf 70 mg/m² po die x 21d q28d

Other useful tools

- <https://www.cancercareontario.ca/en>
- <https://www.mskcc.org/cancer-care/diagnosis-treatment/symptom-management/integrative-medicine/herbs>
- <https://www.asco.org>
- <https://www.mascc.org/>

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The Randomized AMBORA Trial: Impact of Pharmacological/Pharmaceutical Care on Medication Safety and Patient-Reported Outcomes During Treatment With New Oral Anticancer Agents



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