



Covid-19 Pandemic and Cancer Pain

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مدیریت دردهای کانسری
در پاندمی کورونا

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وبینار (همه مراکز) مراجعه کنید
(ircme.ir)

- Are Cancer Patients More Susceptible?



General Background

- Chronic pain patients may be **more susceptible** to COVID-19, and if infected with the virus, may face different consequences than others.
- Chronic pain patients can be considered **immunocompromised**, mainly because so many are **elderly** and have **multiple comorbidities**.
- Many also are on long-term **opioid** therapy, and this is known to interact with the immune system.
- Some are on **steroids**, which also may induce immunosuppression.

Cancer pain treatment during the COVID-19 pandemic: institutional recommendations

Angela Maria Sousa ^{i,iii,*} Thiago Ramos Grigio ^{i,ii} Hazem Adel Ashmawi ⁱⁱⁱ Ulysses Ribeiro Júnior ⁱⁱ

- Cancer patients are immunocompromised and more susceptible to infections than the general population.
- These patients are older, have **higher angiotensin-converting enzyme-2 (ACE2) expression**, and more comorbidities. They are at higher risk of adverse outcomes, including intensive care admission, a requirement for mechanical ventilation, or death.

COVID-19 and Cancer: a Comprehensive Review

Rohit Gosain¹ · Yara Abdou¹ · Abhay Singh¹ · Navpreet Rana² · Igor Puzanov¹ · Marc S. Ernstoff¹

- Cancer patients are twice more likely to be diagnosed with COVID-19 than the general population.

Review Article

Caring for patients with pain during the COVID-19 pandemic: consensus recommendations from an international expert panel

H. Shanthanna,¹ N. H. Strand,² D. A. Provenzano,³ C. A. Lobo,⁴ S. Eldabe,⁵ A. Bhatia,⁶ J. Wegener,⁷ K. Curtis,⁸ S. P. Cohen⁹ and S. Narouze¹⁰

- Available data indicate that older people are more vulnerable, with underlying health conditions such as chronic respiratory, cardiovascular or chronic kidney disease, diabetes, active cancer and more generally severe chronic diseases.

Cancer patients in SARS-CoV-2 infection: a nationwide analysis in China



www.thelancet.com/oncology Vol 21 March 2020

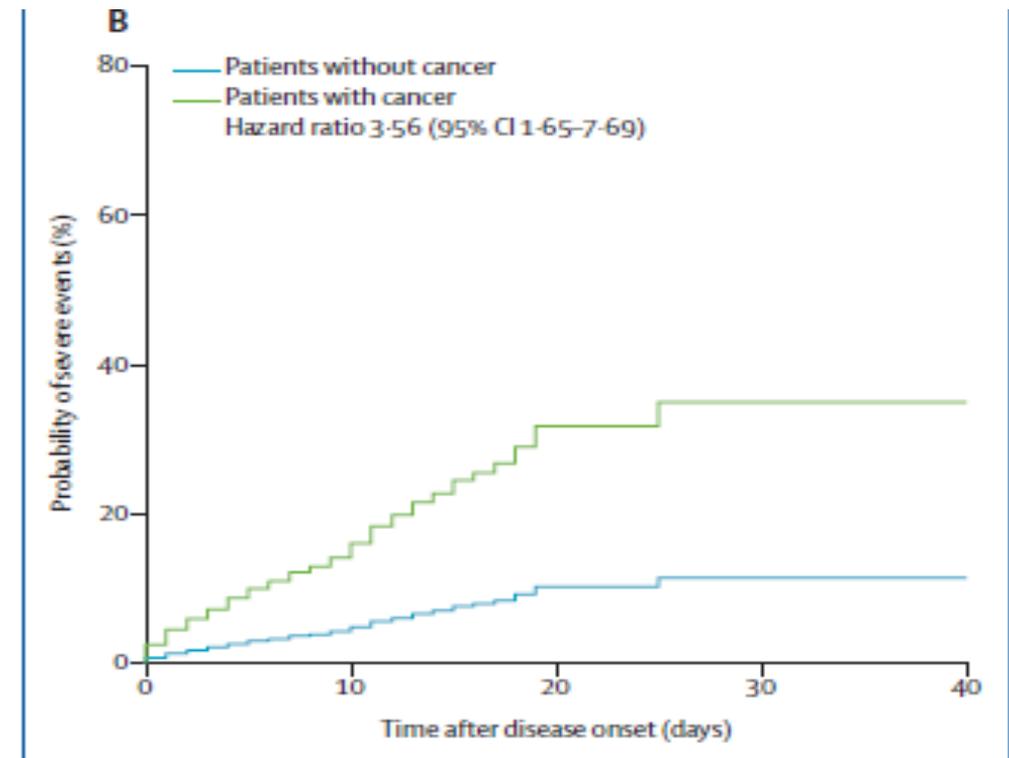
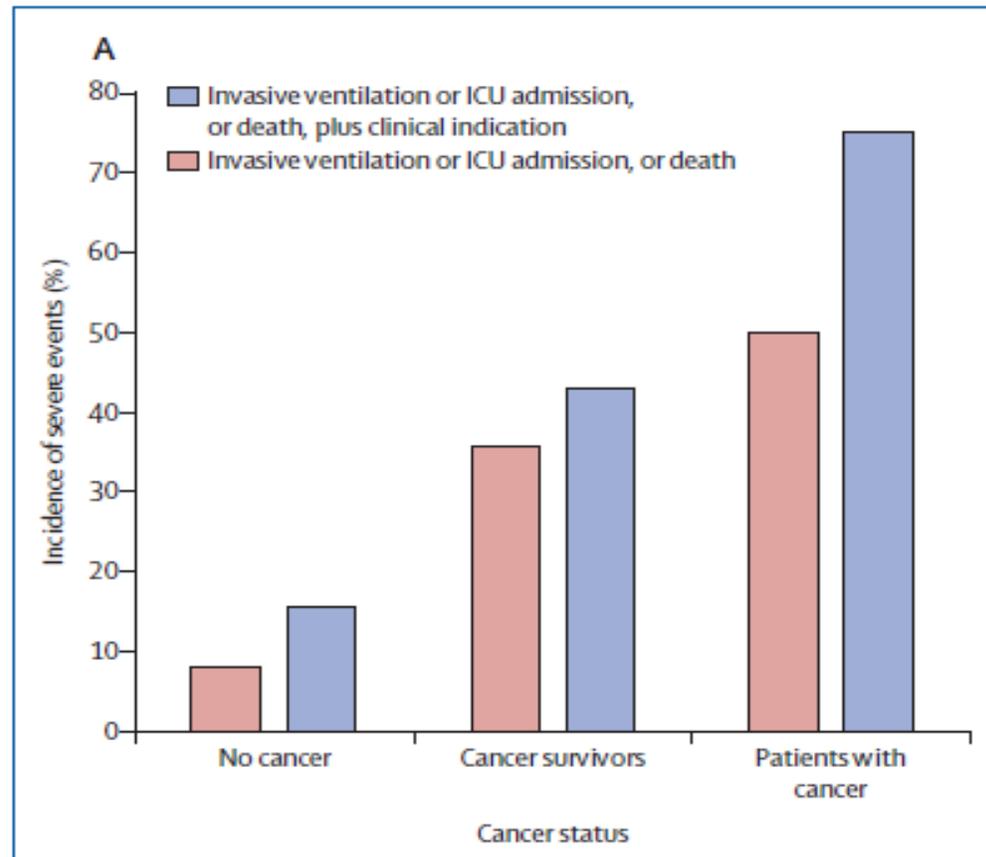


Figure: Severe events in patients without cancer, cancer survivors, and patients with cancer (A) and risks of developing severe events for patients with cancer and patients without cancer (B)
ICU=intensive care unit.

In cancer patients, categories at risk include:

- Patients receiving chemotherapy, or who have received chemotherapy in the last 3 months
- Patients receiving extensive radiotherapy
- People who have had bone marrow or stem cell transplants in the last 6 months, or who are still taking immunosuppressive drugs
- People with some types of blood or lymphatic system cancer which damage the immune system, even if they have not needed treatment (for example, chronic leukaemia, lymphoma or myeloma).

Specific risk groups are cancer patients with an impaired immune system such as:

- Leukocytopenia
- Low immunoglobulin levels
- Long lasting immunosuppression (steroids, antibodies)

- How We Can Visit Them?



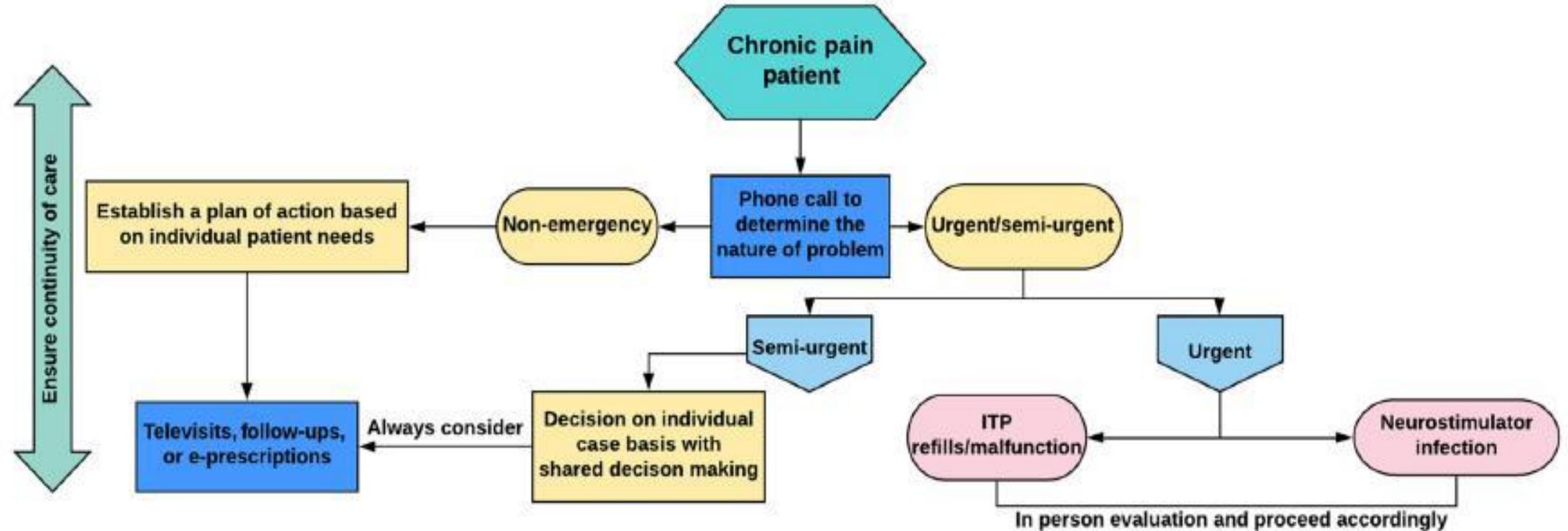
- Pain management during COVID-19 is particularly important to **prevent** emergency room visits.
- "Our role is to keep the patient **safe at home**, minimizing face-to-face interactions."



Review Article

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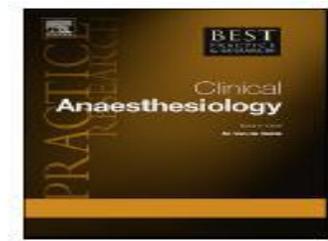
- If there is a need for hospitalization for an outpatient procedure, **RT-PCR for SARS CoV2** and **chest tomography** should be performed. The patient should be kept hospitalized for the **shortest duration** as possible.



Contents lists available at [ScienceDirect](https://www.sciencedirect.com)

Best Practice & Research Clinical Anaesthesiology

journal homepage: www.elsevier.com/locate/bean



Impact of COVID-19 pandemic on chronic pain management: Looking for the best way to deliver care

Chronic pain patients' features and challenges of pain treatment outside and during COVID-19 pandemic.

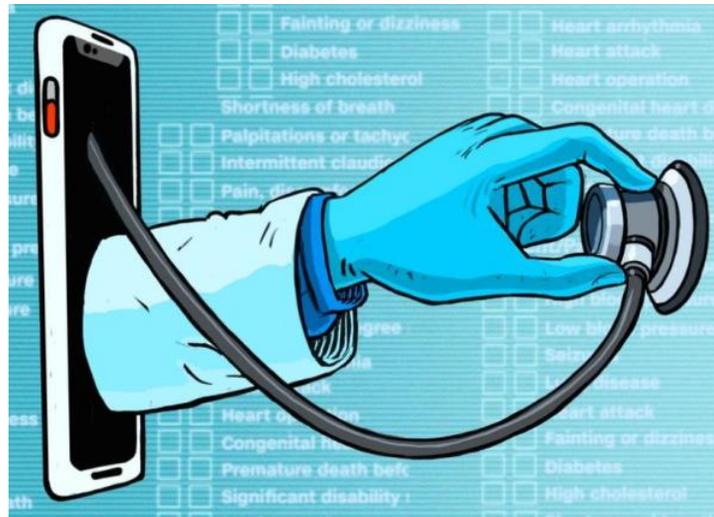
Features of patients with chronic pain	Usual therapeutic challenges	Challenges during COVID-19 pandemic
Elderly patient	Pain assessment and treatment Greater risk of side effects with NSAIDs and opioids	Greater risk of infection Caution using opioids or steroids NSAID and non-NSAIDs (paracetamol, dipyrene), can mask fever and myalgias COVID-19 related
Disabled patient	Need of a caregiver to take him to the hospital	Risk of infection for him and his caregiver
Multi-morbidity	Risk of side effects or less pain control	Difficulties with multi-disciplinary team' evaluation
Multi-treatments	Risk of side effects or less pain control	Drugs prescription and storage
Cognitive disorders	Pain assessment and treatment evaluation	Difficulty in remote treatment
Emotional disorders	Needing of a biopsychosocial model of pain management. Patient compliance and adherence to therapy	Worsening of emotional disorders Worsening compliance to therapy Adding pandemic-related disorders
High dosages and long-term opioids	Risk of endocrine imbalance Risk of immunosuppression Risk of respiratory depression	Drugs prescription and storage Greater risk of infection Greater risk of respiratory depression during lung infection and with fentanyl patch during fever
Intrathecal Drug Delivery System (ITDDS)	Programming pump refill to avoid opioid abstinence syndrome.	Need to pump refill to avoid abstinence or to optimize infusion therapy
Neurostimulation implants	Periodic checks and programming	Need to change exhausted internal battery or surgery for complications or for stage 2 of implant of external leads

- The Best Patient Visit & F/U?



General Recommendations

- *Any elective, in-person patient **visits** or meetings have to be suspended.*
- Whenever possible, telemedicine should be considered.





Managing patients with chronic pain during the COVID-19 outbreak: considerations for the rapid introduction of remotely supported (eHealth) pain management services

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<http://dx.doi.org/10.1097/j.pain.0000000000001885>

Term	Definition
Telehealth and Telemedicine	<p>Telemedicine is the older term used more narrowly to refer to "...the use of technologies and telecommunication systems to administer health care to patients who are geographically separated from providers."⁸</p> <p>Telehealth is a more modern broader term referring to all possible health and social care use of technology: "Telehealth is defined as the delivery and facilitation of health and health-related services including medical care, provider and patient education, health information services, and self-care via telecommunications and digital communication technologies. Live video conferencing, mobile health apps, "store and forward" electronic transmission, and remote patient monitoring (RPM) are examples of technologies used in telehealth."⁸</p>
eHealth	Electronic health (eHealth) is the "...cost-effective and secure use of information and communications technologies in support of health and health-related fields, including health-care services, health surveillance, health literature, and health education, knowledge and research." ⁵⁰
mHealth	Mobile health (mHealth) refers to "...healthcare applications and programs patients use on their smartphones, tablets, or laptops. These applications allow patients to track health measurements, set medication and appointment reminders, and share information with clinicians." ⁸
Virtual reality	Virtual reality uses 2- or 3-dimensional technology to allow patients to access and interact within an often immersive "virtual world." Virtual reality requires multisensory input to create this world. ²⁹
Augmented reality	Augmented reality involves a transparent screen or projection or a virtual image being overlaid onto the physical world around us. It involves maintaining intact perception of the real world with a digital object or presence inserted into the world. ³⁸
Remote treatment or therapy	Meeting with a patient through telephone, cellular phone, the internet, or other electronic media in place of or in addition to conventional face-to-face visits to deliver treatment (term is most often used in psychotherapy).
DTx	"Digital therapeutics (DTx) deliver evidence-based therapeutic interventions to patients that are driven by high quality software programs to prevent, manage, or treat a medical disorder or disease. They are used independently or together with medications, devices, or other therapies to optimize patient care and health outcomes. DTx products incorporate advanced technology best practices relating to design, clinical validation, usability, and data security." ¹⁶



Impact of COVID-19 pandemic on chronic pain management: Looking for the best way to deliver care

Table 2

Recommendations for best practice management of pain patients.

- 1) "Infection control" in healthcare settings according to Center of Disease Control (CDC) recommendations: triage points with body temperature check, social distancing, hand hygiene, face mask and gloves during patient care, and cleaning of surfaces in the patient care environment.
- 2) Triage the risk of COVID-19 screening patients and personnel for symptoms of COVID-19.
- 3) Triage the pain procedures in elective, urgent, and emergent situations: suspend elective cases, proceed with emergent ones, and consider case by case in urgent situation.
- 4) Suspend in-person visits whenever possible. In-person visit remains an option that should be taken into consideration according to several factors, such as acuity and severity of pain, whether or not the patient has comorbid psychiatric condition, occupational consideration (such as whether the patient is also a caregiver or has children), the likelihood of the visit/procedure providing meaningful benefit, the likelihood of the patient to seek emergency services, or be started on opioids, and the need for physical examination.
- 5) Adapt ongoing therapy to reduce the risk on COVID-19.
- 6) Perform urgent procedures with the minimal number of personnel, ideally by a single physician avoiding deep sedation requiring airway support.
- 7) Consider intrathecal pump refill as an emergent interventional pain procedure. In some cases, in-home pump refill can be planned.

- Can We Continue Opioid Use?



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- Opioids act on the hypothalamic/pituitary/adrenal (HHA) axis and activate the sympathetic nervous system.
- The SNS innervates lymphoid organs, and this activation induces the release of biological amines that **suppress** the proliferation of splenic lymphocytes and the cytotoxicity of NK cells. Additionally, the prolonged use of opioids increases the activity of HHA and the production of glucocorticoids, which **also decreases** the cytotoxicity of NK cells.
- Pain itself is immunosuppressive, and **not prescribing opioids** for the possibility of immunosuppression can **be even more devastating**.



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Impact of COVID-19 pandemic on chronic pain management: Looking for the best way to deliver care

- Opioids can link to mi-opioid receptor(MOR) and Toll-like receptors which are Immune receptors and **suppress immunity** via them.
- Via activating dopamine 1, increases neuropeptide Y(NPY) **suppresses** NK Cells.

Opioids and COVID-19

- Significant **immune changes** occur in patients with COVID-19 disease.
- Most Covid-19 patients have decreased WBC counts and **lymphocytopenia**.
- The potential for **thrombocytopenia** exists in severe cases.
- Opioids are recognized as causing **immune suppression**, and individual opioids differ in their potential.
- Although some have observed **buprenorphine, tramadol** to have less effect on animals' immune systems.

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REVIEW
published: 12 December 2019
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Do All Opioid Drugs Share the Same Immunomodulatory Properties? A Review From Animal and Human Studies

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TABLE 1 | Summary of the effects of opioid drugs on immunity.

	Preclinical studies		Human studies	
	<i>In vitro</i>	<i>In vivo</i>	<i>In vitro</i>	<i>In vivo</i>
Fentanyl	n.d.	↓ (16–20)	↔↓(22, 36)	↓[POP](23–26) ↑[h.v.] (27)
Methadone	↓(33) ↔(30, 31)	↓ (34, 35) ↔ (32–34)	↓(36, 37) ↔ (36)	↔ [MMT] (39–44)
Oxycodone	↓ (50)	↔ (47–49)	n.d.	↓[POP] (53) ↔ [POP and cancer pain] (51–53)
Buprenorphine	n.d.	↔(16, 19, 56, 57)	↓↔ (59, 60)	↔ [BMT] (40, 41)
Remifentanyl	n.d.	↓ (62, 63)	n.d.	↓ [POP](64, 65, 67) ↔ [POP](66)
Tramadol	n.d.	↑ (69–72)	↔(75)	↔↑[POP](73, 74)
Tapentadol	n.d.	↔(78)	n.d.	n.d.

↓ significant decrease of at least one immune parameter.

↑ significant increase of at least one immune parameter.

↔ no effect.

↓↔ different effect on different immune parameters.

n.d., not determined.

POP, peri-operative period.

h.v., healthy volunteers.

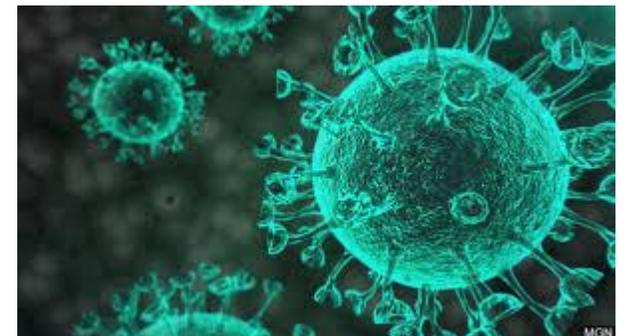
MMT, methadone maintenance treatment of opioid addicts.

BMT, buprenorphine maintenance treatment of opioid addicts.

() numbers in brackets are corresponding references.

Opioids, Transdermal opioids and medicines for neuropathic pain

- A high temperature or fever is often associated with COVID-19 infection and **this may increase absorption from transdermal opioid patches and could increase opioid side-effects.**
- Patients who are prescribed transdermal opioids who become increasingly drowsy or somnolent may require the patch strength to **be reduced**, or alternatively replaced with **short-acting opioid formulations**, until the person is feeling better and the fever lowered.



Opioids and COVID-19

- Patients with COVID-19 who are receiving opioids can be more susceptible to **respiratory depression**, and the absorption of fentanyl during transdermal administration (**fentanyl patch**) may increase with fever.
- *Do not recommend **any changes** to ongoing opioid treatment regimens in the absence of documented changes in pain and/or function.*
- *Do recommend careful monitoring of patients on transdermal opioids, as the rate of **absorption with high fever** can be **unpredictable**.*

- Can We Perform Pain Procedure?



General Recommendations



- Categorizing pain procedures as **elective**, **urgent**, and **emergent**
- Although most chronic pain interventions fall under the elective category, there are some situations that fall into the urgent or emergent categories.
- For example, not performing or postponing a procedure may lead to **significant morbidity** and other **adverse sequelae**.
- In chronic pain patients, withholding pain management services could lead to **inability to work**, **anxiety** and **depression**, and reliance on opioid therapy.

Steroids in Cancer Pain and COVID-19

- Chronic pain patients may be on oral steroids or may have received a **recent** steroid intervention.
- Patients on steroids have a potential for **secondary adrenal insufficiency** and altered immune response.

Steroids in Chronic Pain and COVID-19

- Injections of **corticosteroids into joints** was shown to be associated with a **higher risk of influenza**.
- The duration of immune suppression could be less with the use of **dexamethasone** and **betamethasone**.
- Consider evaluating the **risks and benefits** of steroid injections, and use a **decreased dose**, especially in high-risk patient populations.

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- Following lumbar facet joint injections, cortisol levels are suppressed for an average of 4.4 days.
- Although COVID-19 induces an exaggerated immune response, steroids are only recommended for refractory cases.
- One should consider the **risk/benefit of steroid injections** and reduce the dose, especially in high-risk patients during the current COVID-19 pandemic

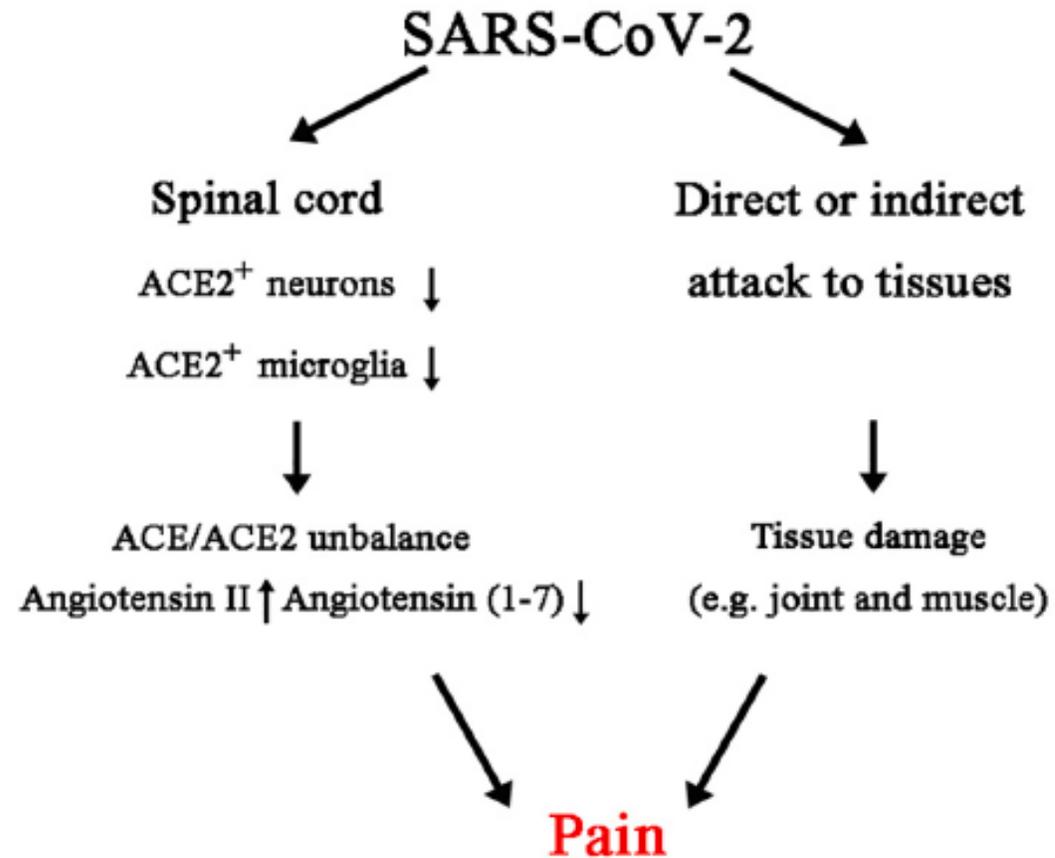
- Is Covid-19 Increase Pain in Cancer Patients?



Letter to the Editor

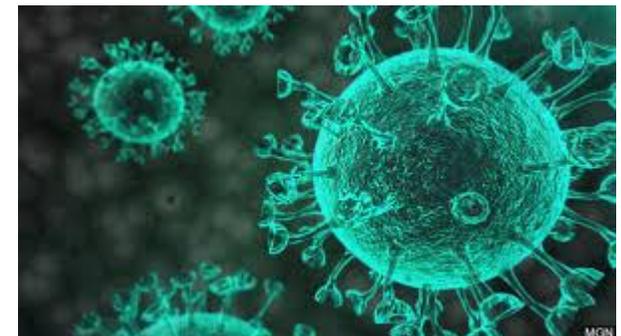
Pain: A potential new label of COVID-19

Brain, Behavior, and Immunity 87 (2020) 159–160



Pain symptoms related to COVID-19 infection

- The early symptoms of COVID-19 include generalised muscle and body-aches, as well as fever, continuous dry cough and other flu-like symptoms.



Exacerbation of persistent pain

- A continuous dry cough may exacerbate some types of persistent pain (including neck pain, back pain, orofacial pain, headaches and cervical/ lumbar radicular pain like sciatica and brachialgia).
- Coughing due to Covid may worsen **MSK pain, especially LBP.**



This pain may have also been due to:

- **Long hospital bed stays**, causing pain in the joints, spine, muscles, and other soft tissues
- As well as physically manifested pain associated with COVID-19-related **psychological stress**.
- Throughout their hospitalizations, schedule regular visits to their isolation wards and provided appropriate pain consults and management.

- Can We Use NSAIDS?



NSAIDS and COVID-19

- Following media reports there continues to be ongoing uncertainty about the use of non-steroidal anti-inflammatory drugs (NSAIDs) for managing fever and pain in people with suspected COVID-19.
- It has been suggested that NSAIDs **may increase complications** from simple respiratory infections or delay recovery from the infection.



Acute use of non-steroidal anti-inflammatory drugs (NSAIDs) for people with or at risk of COVID-19

- **No strong evidence confirming that NSAIDs increases the likelihood of contracting the virus or worsening the symptoms**; however, its anti-inflammatory and anti-pyretic effects **may mask** the symptoms and signs of COVID-19 infection.

EMA advice on the use of NSAIDs for Covid-19

DRUG AND THERAPEUTICS BULLETIN | MARCH 2020 |

Overview of: European Medicines Agency. EMA gives advice on the use of non-steroidal anti-inflammatories for Covid-19.
FMA/136850/2020

- At present, patients who have confirmed/believe COVID-19 infection, First-line treatment is **paracetamol**.

Original Article

The Italian coronavirus disease 2019 outbreak: recommendations from clinical practice

M. Sorbello,¹ K. El-Boghdadly,² I. Di Giacinto,³ R. Cataldo,⁴ C. Esposito,⁵ S. Falcetta,⁶ G. Merli,⁷ G. Cortese,⁸ R. M. Corso,⁹ F. Bressan,¹⁰ S. Pintaudi,¹¹ R. Greif,¹² A. Donati,¹³ F. Petrini¹⁴ and On behalf of The Società Italiana di Anestesia Analgesia Rianimazione e Terapia Intensiva (SIAARTI) Airway Research Group, and The European Airway Management Society

- For intubated, bolus dosing of hydromorphone or fentanyl for analgesia and midazolam for sedation/anxiolysis are effective.
- Dexmedetomidine infusion is another option to provide light to medium sedation.



COVID-19: Melatonin as a potential adjuvant treatment

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- Melatonin also has been reported in COVID-19 patients to spare sedatives and treat agitation.

Thank you.

