

Recommendations for the management of headaches during the COVID-19 pandemic

Recomendações para o tratamento de dores de cabeça durante a pandêmica COVID-19

Yara Dadalti Fragoso¹
 Marcelo Calderaro²
 Marcio Nattan Portes Souza²
 Patrick Emanuell Mesquita Sousa Santos³
 Eduardo Nogueira¹
 Shuu-Jiun Wang^{4,5}
 Messoud Ashina⁶
 Stephen D Silberstein⁷
 Mario F P Peres^{8,9}

¹Universidade Metropolitana de Santos, Santos, Brazil.

²Hospital das Clínicas da Universidade de São Paulo, São Paulo, Brazil.

³Universidade Federal do Delta do Parnaíba, Parnaíba, Brazil.

⁴Department of Neurology, Neurological Institute, Taipei Veterans General Hospital, Taipei, Taiwan.

⁵Brain Research Center, National Yang-Ming University, Taipei, Taiwan.

⁶Department of Neurology, Copenhagen University, Copenhagen, Denmark.

⁷Jefferson Headache Center, Department of Neurology, Thomas Jefferson University, Philadelphia, USA.

⁸Hospital Israelita Albert Einstein, Sao Paulo, Brazil.

⁹Instituto de Psiquiatria, Hospital das Clínicas da Universidade de São Paulo, Brazil.

*Correspondence

Yara Dadalti Fragoso
 E-mail: yara@bsnet.com.br

Received: April 18, 2020.
 Accepted: April 27, 2020.

DOI: 10.5935/2178-7468.20200010

ABSTRACT

Abstract: Background. During the novel coronavirus - COVID-19 pandemic, health care systems are facing one of its greatest challenges. **Results:** Secondary headaches may need urgent care at an emergency department. Primary headaches exacerbations may require intravenous infusion. Treatment optimization is key for a better outpatient management. **Conclusion:** We give recommendations on when a headache patient should go to the hospital despite the current limited resources, and primary headache management aspects during the outbreak.

Keywords: Headache management, COVID-19, Emergency department.

RESUMO

Introdução: Durante a nova pandemia do coronavírus - COVID-19, os sistemas de saúde estão enfrentando um de seus maiores desafios. **Resultados:** As cefaleias secundárias podem precisar de atendimento urgente em um departamento de emergência. As exacerbações das cefaleias primárias podem exigir infusão intravenosa. A otimização do tratamento é fundamental para um melhor manejo ambulatorial. **Conclusão:** Damos recomendações sobre quando um paciente com dor de cabeça deve ir para o hospital, apesar dos recursos limitados atuais e dos aspectos primários de gerenciamento da dor de cabeça durante o surto.

Palavras-chave: Manejo da dor de cabeça, COVID-19, Departamento de emergência

INTRODUCTION

Healthcare worldwide is facing one of its greatest crises in history¹. With the fast spread of the novel coronavirus, healthcare systems are collapsing in some countries, with depletion of resources and crowding of emergency rooms, wards and intensive care units².

Since the World Health Organization's declaration that a pandemic exists, interruption of non-urgent healthcare has been generating insecurity and helplessness for people with other health problems, including headache disorders. We need strength and compassion to face up to and overcome this crisis and its imposed difficulties. One important step is to seek reliable information, and to prevent the spread of false news that generate confusion and panic. Here, we provide guidelines for the

management of headaches during the COVID-19 pandemic.

RECOMMENDATIONS FOR THE EMERGENCY CARE OF HEADACHE DISORDERS DURING THE COVID-19 PANDEMIC

With the emergency department (ED) as a potential source of COVID-19 infection, patients experiencing headaches need advice on when to seek emergency care.

Patients should avoid ED visits for treatment of their regular headaches, but if they experience a headache with red flags, urgent care may be needed. Delay in treatment may increase morbidity and mortality, telemedicine is one key tool for the management of headaches during the pandemic.



WHEN SHOULD HEADACHE PATIENTS GO TO THE ED?

COVID-19 and its symptoms are an independent determinant of ED care especially with breathing difficulties. Headache is reported in patients with COVID-19 from 8 to 34% (3,4). However, headache and mild symptoms alone that patients may think might be a symptom of COVID-19 should not be considered as not an indication. The list below shows conditions that accompany headache and may indicate that it is a life-threatening disorder requiring special management ⁵:

1. Headache and Fever
A new-onset acute headache that differs from those that were previously experienced, in association with a documented increase in temperature (> 37.8 °C or > 100 °F) is a sign of ongoing infection. This may be managed by telemedicine if another symptom such as painful urination suggests the site of infection (urinary, pulmonary, sinus, common cold). Evaluation and treatment can be given by telemedicine with possible referral to the ED (change in mental status, diplopia weakness, stiff neck, etc.) and patient monitoring for clinical worsening. If the patient's condition worsens over time, or mental status is declining, this must be urgently reevaluated by the healthcare provider.
2. Headache and stiff neck
Headaches associated with stiff neck may be due to meningitis or subarachnoid hemorrhage (SAH). Meningitis evolves over a few days, generally associated with fever. In SAH, headache usually presents with sudden onset, as an abrupt and very severe headache, i.e. thunderclap headache.
3. Headache and change in mental status
Headaches associated with mental confusion, change in behavior, excessive sleepiness or disorientation may originate from a central nervous system (CNS) disorder, stroke, neoplasia or infection. Adequate care should be given, otherwise the primary condition may worsen without treatment.
4. Eye pain, redness and/or vision loss
Headaches occurring in one or both eyes, associated with redness are more likely to be due to conjunctivitis. Glaucoma can present with eye pain or redness, but is usually accompanied by peripheral loss of vision. Vision loss may also occur in migraine auras. If a patient has experienced a headache associated with vision loss for the first time, medical attention is needed. Acute headaches that are unilateral or periorbital and occur in association with vision loss in the elderly should give rise to suspicion of temporal arteritis.
5. Headaches associated with physical exertion or fainting
Physical activity can exacerbate migraine pain and is part of the diagnostic criteria for this

condition. However, headaches occurring only after or during physical exertion or sexual activity may be a sign of a secondary headache due to aneurysm, arteriovenous malformation, cerebral venous thrombosis or reversible cerebral vasoconstriction syndrome (RCVS). Headache associated with fainting or seizure can be secondary to brain tumors, infections or stroke.

6. Vomiting
Headaches associated with vomiting only need ED attention if oral fluid intake is not possible. Antiemetics should be considered in the early phase of a migraine attack with nausea. Vomiting is an associated feature of migraine, but may also be a symptom of intracranial hypertension.
7. New-onset headaches starting after 50 years of age
If this is an ongoing problem, telemedicine is appropriate for initial evaluation. A visit to the ER should be made if an early onset acute headache is present.
8. Sudden-onset, abrupt headaches (Thunderclap Headache)
Sudden-onset severe headaches that reach their peak in seconds demand immediate evaluation. They can be due to a SAH, cerebral venous thrombosis, carotid or vertebral dissection, meningitis, pituitary apoplexy, or RCVS. Recurrent thunderclap headache is a hallmark of RCVS until proven otherwise.
9. Headaches in chronic non-communicable disorders or immunodeficiency
A new-onset headache in patients with ongoing infection, HIV or cancer, or in those taking immunosuppressants, needs urgent attention. If headaches started gradually but are worsening, medical attention is also needed.

MANAGEMENT OF PRIMARY HEADACHES DURING THE COVID-19 PANDEMIC

Primary headache patients will need special attention during the COVID-19 pandemic, particularly if social isolation measures have been imposed by health authorities.

Mental health management. Mental health can be severely impaired, leading to anxiety, panic or depression. Suicide rates increased in China during confinement ⁶. Primary headache patients may be more susceptible to mental health issues and/or may have more attacks under these conditions. Lifestyle measures should be reinforced, since food intake, mood and physical activity may be affected during the pandemic. Self help tools are often available on the internet.

Acute headache management. Primary headaches may be exacerbated during the pandemic. Headaches typically account for 1-3% of ER visits ⁷. In order to avoid delays in the ED, over taxing urgent care, hospitalization, acute treatment may need optimization. This may include



addition of non-parenteral options such as subcutaneous injections ([i.e. sumatriptan or dihydroergotamine (DHE)] or nasal spray formulations (sumatriptan or zolmitriptan). Patients are suggested to increase acute treatment toolbox to better self-manage their headache attacks. This includes the use of prochlorperazine suppositories. Patients may be at risk of worsening of their headache in isolation, consider new preventive methods to mitigate the risk.

Avoiding corticosteroids. Cluster headache and other primary headaches are commonly treated with corticosteroids. If possible, this should be avoided, because immunosuppression is considered to be a risk factor for negative health outcomes among individuals infected with COVID-19.

CONCLUSION

Headache patients will need special management during the COVID-19 pandemic. New-onset acute headaches will still need medical care. Delays in treating other life-threatening conditions caused by diversion of resources to treat cases of the novel coronavirus may lead to additional morbidity burdens, or mortality. Primary headache patients may be at risk of worsening headache control due to the limited healthcare resources available and because of changes to lifestyle due to social-distancing confinement.

REFERENCES

1. MacIntyre CR. On a knife's edge of a COVID-19 pandemic: is containment still possible? *Public Health Res Pract.* 2020; 301: 3012000. doi: 10.17061/phrp3012000
2. Panati, K., Narala, V.R. COVID-19 Outbreak: an Update on Therapeutic Options. *SN Compr. Clin. Med.* 2020. <https://doi.org/10.1007/s42399-020-00264-6>
3. Huang C, Wang Y, Li X, et al. Clinical features of patients infected with 2019 novel coronavirus in Wuhan, China. *Lancet.* 2020; 39510223: 497-506. doi: 10.1016/S0140-67362030183-5.
4. Xu XW, Wu XX, Jiang XG, et al. Clinical findings in a group of patients infected with the 2019 novel coronavirus (SARSCov-2) outside of Wuhan, China: retrospective case series. *BMJ.* 2020; 368: m606. doi: 10.1136/bmj.m606.
5. Do TP, Remmers A, Schytz HW, et al. Red and orange flags for secondary Neurology. 2019; 923: 134-144. doi: 10.1212/WNL.0000000000006697.
6. Qiu J, Shen B, Zhao M, et al. A nationwide survey of psychological distress among Chinese people in the COVID-19 epidemic: implications and policy recommendations. *Gen Psychiatr.* 2020; 332: e100213. doi: 10.1136/gpsych-2020-100213.
7. Munoz-Ceron J, Marin-Careaga V, Peña L, et al. Headache at the emergency room: Etiologies, diagnostic usefulness of the ICHD 3 criteria, red and green flags. *PLoS One.* 2019; 141: e0208728. doi: 10.1371/journal.pone.0208728.