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Evaluation of gabapentin efficacy in palliative care persistent hiccups management: case series

Abstract

We have noticed it's common to see hiccups in the palliative patients and in most cases need pharmacological intervention. As a part of patient's standard care and comfort, the presence of treatment guidelines for persistent hiccups is of paramount importance. In our cases the gabapentin appears to be effective for treating persistent hiccups.

Keywords: hiccups, gabapentin, chemotherapy, injuries, leukaemia

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Introduction

In this series we have reported three cases with persistent hiccough after a successful management with Gabapentin:

The first case: An elderly male known case of advanced glioblastoma multiforme (WHO Grade IV) of the right temporal lobe. Have intractable hiccups more than one month in duration.[1]

The second case: a male in his 7th decade has acute myeloblastic leukaemia (AML) complain of persistent hiccups for four nights.[2]

The third case: A middle age male with invasive prostate malignancy. Six hours after a robotic prostatectomy started to have continuous persistent hiccups exceeded three days.[3]

Hiccupping is a physiological reflex of the intercostal muscles and diaphragm which consist of phrenic, vagus nerves and a central (brainstem) component.[4] an episode can be few seconds up to days. hiccups are three categories: Acute hiccups continue for up to 48 hours, persistent hiccups persist more than 48 h and an intractable

hiccups with a duration more than a month and it is rare.[5] Main causes are: gastric stasis and distention, gastroesophageal reflux disease (GERD), metabolic disorders (sodium, potassium and calcium abnormalities), infection, irritation of the phrenic and vagus nerves(mediastinal, oesophageal or laryngeal mass), and central nervous system injuries(tumours, infections or trauma).[6]

The pathophysiology may be due to injury or irritation of the phrenic, vagus nerves or the medullary centres.[6] clinical history is the corner stone for long lasting hiccups which include: duration, indigestion, abdominal surgeries, medications like chemotherapy, and signs of central nervous abnormalities. Laboratories and imaging will guide treatment of treatable causes. Intractable hiccups in advanced cancer palliative patients are rare. Gabapentin may have valuable role in managing hiccups in palliative setting.[7–9] Here, we report a promising role of the use of gabapentin for the management of persistent hiccups in a palliative patients.

Discussion

It is not uncommon to see hiccup among population and in most cases benign and transient. Intractable hiccups may be due to organic cause that needs attention. The pathophysiological mechanism is still not clear. There is a reflex arc consist of: The afferent limb (the phrenic, vagus and sympathetic nerves) convey signals to the midbrain and the efferent part is the motor fibres of the phrenic nerves and accessory nerves to the diaphragm and intercostal muscles respectively.[10–12] The central processing of hiccups may contain medulla, and the area between the brainstem and cervical spine.[11] Treatable causes like mediastinal, and brain masses can be managed by surgery or radiotherapy. H pylori eradication can help some hicuups. Offending drugs should be discontinued if possible. Non pharmacological measures like breath holding, crushed ice, and gentle eyes rub and others may relief hiccups. Long lasting hiccups may interfere with daily activity. It can cause sleep disturbance, dehydration, affect appetite, mood disorder, wound healing problems and even death (rarely).[13] In this series we have noticed sleep deprivation, social issues, anxiety and low mood .We did our best to improve the symptoms , some investigative procedures has been done looking for treatable aetiology, in addition to lowering the possible side-effects of medication. Quality of life was our concern.

Patient's distress has been resolved and the hiccups disappear. They have been discharged home and were back to their normal activities. No side-effects were reported. Follow up has been offered in the clinic and over the cell phones.

Gabapentin, an anti-epileptic drug has many uses in palliative setting, one of them is to treat hiccups through increasing endogenous GABA-mediated inhibition of inspiratory muscle action,[13–15] reducing calcium influx or both of these mechanisms. In addition, it also increases the levels of serotonin in the nucleus raphe magnus of the medulla, which is the source of GABAergic inhibitory inputs to the hiccup reflex arc. In palliative care, especially when central causes are suspected, gabapentin is very effective for treating hiccups. Gabapentin considers safe with minimal side effects, low cost and has many formulations. Low dose of dexamethasone for short course will help treatment of some hiccup. But, large doses of steroids may be one of the hiccup causes.

Conclusion

These cases illustrated the efficacy of gabapentin for the treatment of diagnosed hiccups that does not respond to other drugs. Low dose of dexamethsone may help treating some hiccup. Hiccups related to brain tumors may respond well to gabapentin. Persistent hiccups treatment still is a good area for studies and warrants an extra work.

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Conflicts of interest

The authors declare that there are no conflicts of interest.

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