Medical Hypotheses 127 (2019) 90

Contents lists available at ScienceDirect

Medical Hypotheses

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

Letter to Editors

"3M": Migraine, Microbiota and Melatonin

ABSTRACT

We read with deep interest the recent article published on "Medical Hypotheses" about migraine and associated gastrointestinal disorders.

Beyond the exhaustive pathophysiological explanations, we would address some relevant points to the role of melatonin as well as the high potential of intestinal microbiota in such conditions.

Dear Editors,

We read with interest the article published in Medical Hypotheses about migraine and associated gastrointestinal disorders [1].

Beyond the exhaustive pathophysiological explanations detailed by the authors, we would address some relevant points to the high potential effects of both: melatonin and gastrointestinal microbiota.

The human gut contains at least 400 times more melatonin than the pineal gland, while melatonin receptors in the gut are involved in the regulation of motility, inflammation and pain [2].

Clinically, melatonin levels are significantly lower among migraineurs; specifically in those who had nausea during the migraine attacks and who reported bouts relevant to certain food consumption [3].

In the other hand, evidence regarding the evolving role of the gastrointestinal microbiota in the gut-brain axis suggests that an unbalanced gut flora (i.e. dysbiosis) is associated with neurological diseases like migraine [4], inflammatory immune responses with dysbiosis and increased intestinal permeability are well described in migraineurs [5], and alterations in gut microbiota could be a potent mediator in migraine [6].

Finally, researchers found recently that human gut bacteria is sensitive to the gut melatonin and expresses circadian patterns [7].

The tripod "3M": Migraine, Microbiota and Melatonin is intimately intricated; and beyond the use of melatonin, acting on gastrointestinal microbiota may open a new window of opportunity.

Sources of support in the form of grants

None.

Conflict of interest statement

Nothing to disclose.

Acknowledgement

None.

Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.mehy.2019.04.001.

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https://doi.org/10.1016/j.mehy.2019.04.001
Received 2 April 2019; Accepted 7 April 2019