Headache
© 2014 American Headache Society
ISSN 0017-8748
doi: 10.1111/head.12322
Published by Wiley Periodicals, Inc.

Comment Observation and Rebuttals

The Vasodilatory Activity of CGRP

In the September 2013 edition of *Headache*, the article by Bigal, Walter, and Rapoport entitled "Calcitonin Gene-Related Peptide (CGRP) and Migraine Current Understanding and State of Development" contains incorrect information regarding CGRP in the cerebral circulation. They stated, "The vasodilatory activity of CGRP is particularly potent in the cerebral circulation."

The reference they quoted in support of this statement is a paper entitled "Release of vasoactive peptides in the extracerebral circulation of humans and the cat during activation of the trigeminovascular system."[1] Goadsby et al measured the levels of CGRP in the extracerebral circulation – their paper had nothing to do with the cerebral circulation.

The only studies that have demonstrated high levels of CGRP in the cerebral vasculature are studies on laboratory animals. While studies on laboratory animals have provided medical science with much valuable information, care should be taken not to extrapolate the results of animal studies too freely to humans because often there are marked variations between species. While the cerebral arteries of some laboratory animals do indeed receive a dense supply of CGRP fibers, human cerebral vessels contain only a sparse network.[2] Note that it was Edvinsson, one of the same researchers that reported the high levels in cats, who also showed that the opposite is in fact true in humans.

The published information available is unambiguous – humans do not have high levels of CGRP in the cerebral circulation. This is particularly relevant in any discussion on the role of CGRP in migraine.

Elliot Shevel, BDS, DipMFOS, MB, BCh
Research and Development, The Headache Clinic,
Houghton, South Africa

REFERENCES

1. Goadsby PJ, Edvinsson L, Ekman R. Release of vasoactive peptides in the extracerebral circulation of humans and the cat during activation of the trigeminovascular system. *Ann Neurol*. 1988;23: 193-196.
2. Edvinsson L, Ekman R, Jansen I, McCulloch J, Uddman R. Calcitonin gene-related peptide and cerebral blood vessels: Distribution and vasomotor effects. *J Cereb Blood Flow Metab*. 1987;7:720-728.