

POSTER PRESENTATION

Open Access

The effect of sodium nitroprusside on cerebral haemodynamic and headache in healthy subjects

S Guo^{1*}, J Olesen², M Ashina², S Birk³

From The European Headache and Migraine Trust International Congress
London, UK. 20-23 September 2012

Sodium nitroprusside (SNP) is a powerful vasodilatory agent, which similar to GTN releases nitric oxide (NO) but in contrast does not pass blood-brain barrier. Nevertheless it has already been used in animal models without any knowledge of its headache inducing potential. We hypothesized that SNP would induce headache and vasodilation of cephalic and radial but not cerebral arteries. Five healthy volunteers received intravenous infusion of SNP in a non-randomized dose-titration (1-5 µg/kg/min) study. We recorded headache intensity (verbal rating scale from 0-10), velocity in the middle cerebral artery (VMCA), and diameters of the superficial temporal artery (STA) and radial artery (RA). All participants reported a dose related headache (median peak = 2.5, range 0-3). SNP dilated the STA and RA, caused a marked increase of heart rate and a decrease of mean arterial pressure (MAP) and PetCO₂. We found that SNP decreased the velocity of the MCA, but this was cancelled by a decrease of CBF due to hypocapnia. In conclusion, the present study shows that SNP is a headache inducing agent with close similarities to headaches induced by GTN and possibly without effect on intracerebral arteries.

Author details

¹Danish Headache Center, Department of Neurology, Glostrup Hospital, Denmark. ²Headache Center and Department of Neurology, Glostrup Hospital, Faculty of Health Sciences, University of Copenhagen, Denmark. ³Department of Clinical Neurophysiology, Rigshospitalet, Faculty of Health Sciences, University of Copenhagen, Denmark.

Published: 21 February 2013

¹Danish Headache Center, Department of Neurology, Glostrup Hospital, Denmark
Full list of author information is available at the end of the article

doi:10.1186/1129-2377-14-S1-P232

Cite this article as: Guo et al.: The effect of sodium nitroprusside on cerebral haemodynamic and headache in healthy subjects. *The Journal of Headache and Pain* 2013 **14**(Suppl 1):P232.

Submit your manuscript to a SpringerOpen[®] journal and benefit from:

- Convenient online submission
- Rigorous peer review
- Immediate publication on acceptance
- Open access: articles freely available online
- High visibility within the field
- Retaining the copyright to your article

Submit your next manuscript at ► springeropen.com