Papaverine, a vasodilator with antiviral activity

We read with interest the excellent case report of Speich et al. concerning a 37-year-old patient with pulmonary arterial hypertension and HIV infection [1]. The patient's pulmonary hypertension improved clinically after treatment with a combination of a nucleoside analogue and a protease inhibitor, and no vasodilatory therapy was necessary. However, if a vasodilator is considered of potential use in HIV patients with pulmonary arterial hypertension, papaverine may be a suitable therapeutic approach.

Papaverine, a potent non-selective phosphodiesterase inhibitor, has shown itself to be effective in pulmonary arterial hypertension [2, 3]. The compound has additional antiviral activity against respiratory syncytial virus, cytomegalovirus or measles [4, 5]. Moreover, HIV replication is significantly inhibited by papaverine [5, 6], a finding consistent with the clinical observation that papaverine may improve immunological cutaneous responsiveness in acquired immunodeficiency syndrome [7]. The antiviral effect of papaverine is obviously independent of the increase in intracellular C-AMP and affects neither II-2 production nor II-2 receptor expression. Although its biological antiviral mechanism is not completely elucidated, papaverine may offer an alternative warranting further investigation in HIV patients with pulmonary hypertension.

Horst J. Koch – Department of Psychiatry, University Hospital Regensburg, Germany
Christoph Raschka – Institute of Sports Medicine, Frankfurt, Germany

Correspondence:
Dr. med. Dr. rer. nat. Horst J. Koch
DCPSA MFPM
Psychiatric University Clinic
Dept’ of Gerontopsychiatry
Universitätsstrasse 84
D-93053 Regensburg
E-Mail: horst.koch@bkr-regensburg.de

Author’s reply

The effects of papaverine on HIV infection have mainly been observed in in-vitro experiments. The only clinical data derive from a letter concerning two patients whose CD4 cell counts improved on oral papaverine. These findings, however, have nowhere been reproduced to date, and papaverine is not used by any other HIV specialists. The same is true of pulmonary hypertension. Since papaverine, like theophylline, is only a non-specific phosphodiesterase inhibitor, problems with side effects are foreseeable. Moreover, there are no sound data on the pharmacokinetics of papaverine. On the other hand, a favourable acute response to oral administration of sildenafil, a specific inhibitor of phosphodiesterase isoform 5, has recently been demonstrated in two patients with HIV-related pulmonary arterial hypertension. One of them has been treated for more than 3 months with a persistent clinical improvement and decrease in pulmonary artery pressures.

Rudolf Speich, Rolf Jenni, Miloš Opravil, Réne Jaccard

Correspondence:
Dr Rudolf Speich
Department of Internal Medicine
Zurich University Hospital
Rämistrasse 100
CH-8091 Zurich
E-Mail: klinpr@usz.unizh.ch

References

What Swiss Medical Weekly has to offer:

- SMW’s impact factor has been steadily rising, to the current 1.537
- Open access to the publication via the Internet, therefore wide audience and impact
- Rapid listing in Medline
- LinkOut-button from PubMed with link to the full text website http://www.smw.ch (direct link from each SMW record in PubMed)
- No-nonsense submission – you submit a single copy of your manuscript by e-mail attachment
- Peer review based on a broad spectrum of international academic referees
- Assistance of our professional statistician for every article with statistical analyses
- Fast peer review, by e-mail exchange with the referees
- Prompt decisions based on weekly conferences of the Editorial Board
- Prompt notification on the status of your manuscript by e-mail
- Professional English copy editing
- No page charges and attractive colour offprints at no extra cost

Editorial Board
Prof. Jean-Michel Dayer, Geneva
Prof. Peter Gehr, Berne
Prof. André P. Perruchoud, Basel
Prof. Andreas Schaffner, Zurich
(Editor in chief)
Prof. Werner Straub, Berne
Prof. Ludwig von Segesser, Lausanne

International Advisory Committee
Prof. K. E. Juhani Airaksinen, Turku, Finland
Prof. Anthony Bayes de Luna, Barcelona, Spain
Prof. Hubert E. Blum, Freiburg, Germany
Prof. Walter E. Haefeli, Heidelberg, Germany
Prof. Nino Kuenzli, Los Angeles, USA
Prof. René Lutter, Amsterdam, The Netherlands
Prof. Claude Martin, Marseille, France
Prof. Josef Patsch, Innsbruck, Austria
Prof. Luigi Tavazzi, Pavia, Italy

We evaluate manuscripts of broad clinical interest from all specialities, including experimental medicine and clinical investigation.

We look forward to receiving your paper!

Guidelines for authors:
http://www.smw.ch/set_authors.html

Impact factor Swiss Medical Weekly

All manuscripts should be sent in electronic form, to:
EMH Swiss Medical Publishers Ltd.
SMW Editorial Secretariat
Farnburgerstrasse 8
CH-4132 Muttenz
Manuscripts: submission@smw.ch
Letters to the editor: letters@smw.ch
Editorial Board: red@smw.ch
Internet: http://www.smw.ch