

Pressemitteilung**Goethe-Universität Frankfurt am Main****Markus Bernards**

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Medizin
überregional**New drug combination may provide better cold sore treatment**

FRANKFURT. Researchers from Goethe University Frankfurt am Main, Germany, and the University of Kent in Canterbury, UK, have found a drug combination with the potential to provide better treatment for diseases caused by herpes simplex viruses such as cold sores, genital herpes, and keratitis. The researchers tested different drugs in cell cultures and found that omeprazole and other proton pump inhibitors improve the efficacy of the anti-viral acyclovir, the most commonly used drug for the treatment of herpes simplex virus-associated diseases.

Cold sores and genital herpes can be associated with significant discomfort. Herpes simplex keratitis is a major cause of blindness in developed countries. In individuals with a suppressed immune system, such as organ recipients, herpes simplex viruses can cause life-threatening conditions. Hence, improved therapies are needed.

An international team led by Professor Jindrich Cinatl (Institute of Medical Virology, Goethe-University) and Professor Martin Michaelis (School of Biosciences, University of Kent) tested different proton pump inhibitors in combination with two anti-virals, acyclovir and ribavirin.

Proton pump inhibitors are the most commonly taken drugs for heartburn, because they greatly reduce stomach acid production. However, proton pump inhibitors may also enhance the activity of certain anti-cancer drugs known as nucleoside analogues. The antivirals acyclovir and ribavirin are nucleoside analogues as well, and therefore the German/British research team investigated whether proton pump inhibitors would also be able to increase the efficacy of these two antivirals.

Whereas the proton pump inhibitors had little effect on herpes simplex virus replication when combined with ribavirin, they significantly decreased viral shedding when given together with acyclovir. Out of several proton inhibitors tested, omeprazole showed the highest efficacy.

Professor Jindrich Cinatl, last author of the study, said: 'What is exciting about this research is that proton pump inhibitors are well-characterised and well-tolerated drugs that can immediately be tested in combination with antivirals in patients with severe herpes simplex virus diseases. If we see the same effects in patients, we will be able to help many individuals for whom we currently have limited treatment options'.

wissenschaftliche Ansprechpartner:

Professor Dr. rer. nat. Jindrich Cinatl
Head of Research Group Cinatl
Institute of Medical Virology
University Hospital Frankfurt am Main, Germany
Phone +49 (0)69 / 6301-6409
E-Mail: cinatl@em.uni-frankfurt.de

Homepage: <https://www.kgu.de/einrichtungen/institute/zentrum-der-hygiene/medizinische-virologie/forschung/research-group-cinatl/>

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Omeprazole increases the efficacy of acyclovir against herpes simplex virus type 1 and 2. Malte Kleinschmidt, Denisa Bojkova, Holger Rabenau, Jindrich Cinatl – Goethe-University Frankfurt; Martin Michaelis, Mark Wass – University of Kent, in: Frontiers in Microbiology <https://doi.org/10.3389/fmicb.2019.02790>