

Paving the Way towards Personalized Prevention and Care of Severe Norovirus Gastroenteritis (PRESENT)

Initiative: Niedersächsisches Vorab (nur ausgewählte Ausschreibungen)

Ausschreibung: Big Data in den Lebenswissenschaften der Zukunft

Bewilligung: 27.05.2019

Laufzeit:

Noroviruses are a major cause of gastroenteritis and this leads to a significant economic burden. Acute outbreaks on cruise ships and in elderly care facilities as well as chronic norovirus infections in immunocompromised individuals, such as transplant patients, cause a severe health risk. To date, no vaccine or specific treatment options exist and we have limited knowledge about the inter-individual differences that influence the outcome of a norovirus infection. Determining the parameters that render a person more or less prone to norovirus infection and that determine the severity of infection is therefore important in order to devise strategies to prevent and treat norovirus gastroenteritis. The consortium PRESENT ('Paving the Way towards Personalized Prevention and Care of Severe Norovirus Gastroenteritis') brings together scientists from Hanover Medical School, TWINCORE Institute of Clinical and Experimental Infection Research in Hanover, L3S Research Center in Hanover and Helmholtz Institute of Infection Research in Braunschweig at the newly established Centre for Individualised Infection Medicine, CiiM, in Hanover. The goal of the consortium is to investigate the role of individual parameters such as age, gender, gastrointestinal microbiota and the virus associated human biomolecules in norovirus infection. The PRESENT team will evaluate these parameters in a retrospective and prospective clinical study. Furthermore, differences in disinfectant efficacy for a broad range of norovirus patient isolates will be determined using state of the art in vitro infection models (so called organoids). 'Machine learning' methods and data intensive technology will identify predictive signatures for severe norovirus infection. The knowledge gained will ultimately guide the development of personalized strategies to individually predict, prevent and treat severe norovirus gastroenteritis.

Projektbeteiligte

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