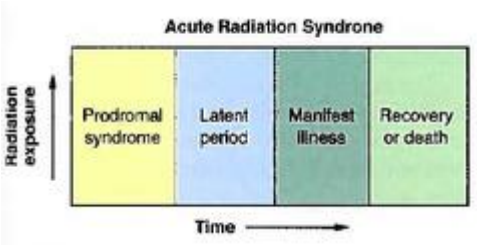
23.01.2017, Prof. Matthias Port,

Institute of Radiobiology of the German Armed Forces

‘Development of gene expression signatures as novel diagnostic tools for early prediction of the Acute Radiation Syndrome’

Head of the Institute of Radiobiology of the German Armed Forces affiliated to the University of Ulm, Matthias Port is appointed as an adjunct professor at the Hannover Medical School since 2017. He is an expert in the field of medical radiation protection and early and late effects of radiation damage. His institute is focused on radiation protection and diagnosis of acute radiation syndrome (ARS) that can be used for treatment after a radiobiological accident (e.g. Chernobyl, Goiania radiation accident) or criminal radio exposure (e.g. Dirty bomb).



During ARS, in the first 60 days after radiation exposure, the irradiated person enters in a prodromal phase followed by a latent phase without symptoms. After the latent phase either the patient shows a manifestation phase which often leads to death or shows chronic damage and then potentially full recovery.

The aim of Prof. Port’s research is to determine which final phase will be reached by the patient during the prodromal phase in which medicine/treatment can be applied. One solution to choose the right therapy could be the radiation dose that the patient received. Unfortunately, the effects created by the dose are heterogeneous and difficult to determine. Early stage patient samples are rare and challenging to obtain. Thanks to an international collaboration, Dr. Port and his team obtained baboon blood samples. A RNA screening was performed and 29 genes could be related to the dose received by the baboons, as well as a prediction of the late phase occurring during ARS. The future perspective of the team is to obtain human samples and validate the results. They aim to increase the cohort of samples and obtain samples from healthy individuals. Another objective of the Dr. Port team is to increase the number of screenings per day to be most efficient for diagnosis in the case of a radiation accident or another possible threat.

Alizée Steer and Julia Ketteler