

Infectious diseases research group at Vestfold Hospital

Vestfold Hospital has many established and active research groups, fostering research talents within various disciplines. In recent years, research activity at the hospital has been increasing and the hospital participates in various national and international research networks and collaborations. An important priority for the hospital is to increase research activity by participating in more clinical trials.

About the infectious diseases research group

Contagious diseases have always been a threat to our health and welfare, which the recent pandemic clearly showed. In order to face a changing panorama of infectious diseases we need better treatment, improved methods to detect microorganisms, and more precise tools to identify disease.

The infectious diseases research group consists of clinicians/scientists from the infectious diseases department, but also professionals from other specialties such as microbiology, intensive care medicine and paediatrics. Two of the group members are based in Ethiopia, which gives us a unique perspective and opportunities for mobility and exchange.



Senior physician Asgeir Johannessen leads the group.

The group has selected three main priorities for 2021-2024:

1. *Hepatitis B*
2. *Correct use of antibiotics*
3. *COVID-19*

1. Hepatitis B

Hepatitis B is a viral disease that attacks the liver and claims 1 million lives each year. A simple oral treatment prevents the development of liver disease, but treatment is usually lifelong with its risks of long-term toxicity and drug resistance.

Vestfold Hospital has a leading role in hepatitis B research in Norway. In the Nuc-Stop study, which is led by Asgeir Johannessen at Vestfold Hospital, the investigators study whether stopping treatment can initiate a favorable immune response and clear the hepatitis B virus for good. A total of 11 hospitals in Norway, Sweden, Denmark and Ethiopia participate in the study. In collaboration with scientists in Sweden, the investigators will analyse patient samples with state-of-the-art immunological methods, aiming to elucidate the immunological mechanisms of cure in chronic hepatitis B.

In close collaboration with local partners, Asgeir Johannessen also leads several large hepatitis B studies in Ethiopia. The aim is to identify risk factors for disease progression, gain insight into treatment effect, and identify the best treatment models for hepatitis B treatment in sub-Saharan Africa. More recently, this led to the establishment of HEPSANET (hepatitis B in Africa collaborative network), a large network of hepatitis B cohorts across Africa (www.hepsanet.org), aiming to collect local data to inform African hepatitis B guidelines.

2. Correct use of antibiotics

Urinary tract infections are among the most common infections leading to prescription of antibiotics. Thus, there is a great potential gain if doctors prescribe the least resistance-driving types of antibiotics.

In the MePUR study, led by Tore Stenstad, the investigators have examined the effect of the narrow-spectrum drug mecillinam in hospitalized patients with upper urinary tract infection and E.coli in blood cultures. The patients received standard intravenous antibiotics for 3 days before switching to mecillinam tablets. The researchers also mapped how high-dose mecillinam affects the concentration of carnitine in the blood. In addition, biological material has been harvested to analyze the bacteria's genetic profile as well as map the patients' inflammatory response.

3. COVID-19

The hospital participated in several externally initiated treatment studies on COVID-19. In 2020, Vestfold Hospital recruited patients to the international SOLIDARITY trial, which found that neither hydroxychloroquine nor remdesivir improves survival in COVID-19. In 2021, patients were recruited to the SolidAct study, a randomized controlled multicenter study on the effect of baricitinib in severe COVID-19. Moreover, in a regional multicenter study, patients who were on ventilator in the period March -20 to February -21 were included to study differences in bacterial infections before and after steroids were introduced as standard treatment.