

Media release

Bern, 31 May 2017 / sba

A Promising Combination: Biobank and HIV Cohort Study

The first Swiss automated liquid biobank has been in operation for exactly one year. Just in time for its first birthday, local biological samples of the renowned Swiss HIV Cohort Study (SHCS) have been integrated into the Liquid Biobank Bern (LBB). The combination of the newest technology and of a proven scientific database represents a stroke of luck for research.

The Swiss HIV cohort study has existed since the end of the 80s, and comprises the data of over 19,000 HIV patients. More than 1,000 scientific publications and important findings related to a successful HIV therapy have developed from it. All the Swiss university hospitals, cantonal hospitals and most specialised physicians are involved in the cohort study. At Inselspital, Bern University Hospital, biological samples are processed and microbiologically analysed at the Institute for Infectious Diseases of Bern University, and so far they have also been stored there. More than 150,000 biological samples have been collected to the highest biobanking standard so far. In the future, the HIV cohort study will be able to benefit from the modern infrastructure of the Liquid Biobank Bern LBB and thus from the newest technological developments in biobanking.

Excellent sample quality thanks to the most modern technology

Prof. Dr. med. Andri Rauch is Deputy Physician-in-Chief of Infectious Diseases at Inselspital and Chairman of the SHCS Scientific Advisory Board. According to him, the Biobank combines three crucial advantages: automation, the newest software and centralisation. It guarantees top-quality storage of the samples and, over time, supplies a real wealth of biological samples. "This type of biobank is growing, it is becoming larger and larger. The patients are supported by specialists and the course of the illness is recorded in detail. At the same time, biological samples are needed. Together they create a very rich database which generates knowledge through research."

Far-sighted and careful collection of data

The successful principle of the HIV cohort study - very good clinical and microbiological long-term data combined with biological samples you can refer to at any time - forms the basis of the collaboration with the Biobank. "A crucial element is that the samples are collected prospectively, over years and decades. Research questions change constantly. At the moment we cannot say when and which samples will be essential in the future. It is crucial that researchers can constantly take a step back and analyse the samples again." This creates a complete data record. The scientific findings are based on a wider and more representative database and are more valuable. Andri Rauch refers to a study in the field of hepatitis as an example. "We saw that certain parameters were missing in older consultations. But we could refer to the plasma samples and recover the analysis. This was decisive for the quality of the study."

Science 2.0

Andri Rauch sees another advantage in the correlation with other data available at a university hospital. The key word here is data warehouse. If you have access to all laboratory results, all clinical data and biological samples, this generates a unique platform for the future.

Biobanking will determine medical research in the next years and decades – Andri Rauch of Infectious Diseases is sure of it. He therefore considers the integration of the local HIV cohort into the Bern Biobank a logical and promising step.

Investment into the future

The Liquid Biobank Bern (LBB) is the first automated clinical liquid biobank in Switzerland. In December 2016, the pilot operation was closed, and at the end of May 2017 the LBB will have been in operation for exactly one year. In this year, 8,500 new samples were recorded. These also included samples of around 700 patients who agreed to a blood donation for the collection. The head of the Biobank Prof. Dr. phil. nat. Carlo Largiadèr describes the experiences of the first year of operation: “The Biobank processes were successfully integrated into the clinical routine operations of Inselspital. It was decisive that all the employees involved in the Departments, transport services and in the laboratory identified with the Biobank and supported us in the optimisation of the processes in the pilot (operation) phase. Most of the patients also placed their trust in us from the start and have consented to the use of their samples for scientific purposes.” In the collection, bodily fluids (especially blood samples) are stored at -80 to -150 degrees Celsius. As long as they have consented to it, the patients’ biological samples are available for several research projects approved by the ethics committee. A large circle of researchers can thus gain access to suitable study material, which in turn paves the way for the desired progress in individualised therapy. Alongside the institutional collection of patient samples, the LBB also offers access to its modern infrastructure and services for other studies.

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Schweizerische HIV-Kohortenstudie, Swiss HIV Cohort Study: www.shcs.ch

Mentioned study: Béguelin C. et al, Hepatitis delta-associated mortality in HIV/HBV-coinfected patients. J Hepatol 2017;66:297-303.

Videos: [Biobank Inselspital Bern \(English\)](#), [Biobank Inselspital Bern \(Deutsch\)](#)