

CORONASYS INNOVATION SHEET 40

PROGNOSTIC URINE TEST

Background

While covid cases continue to rise or are stable at high levels in many regions of the world¹, hospital capacity is strained in a lot of countries²³⁴⁵. This makes it all the more important to identify from the many infected people those who are most likely to experience a severe course or even require treatment in the intensive care unit. A urine test developed by Mosaiques⁶ and DiaPat GmbH⁷ aims to help clinicians identify patients at risk.

Features

The DiaPat-CoV-50 test uses Proteomanalyse- technique to identify patients with a higher risk for complications. Per urine sample, a special device analyses up to 14,000 proteins and detects changes⁸. The test has already been in use for early detection of chronic kidney disease, heart failure and diabetes mellitus⁹. It was adapted to the requirements of Covid-testing and has received a special use authorization by the German Federal Institute for Drugs and Medical Devices¹⁰ in December 2020 after the results of a study¹¹ conducted in summer 2020 were confirmed.

Potentials

The test has a specificity and a sensitivity of 83%. Compared to a purely clinical prognosis of the expected course of the disease, the test provides an increase in predictive accuracy of 20 %, according to the study leader¹². Early identification would enable adequate early treatment.

Points to consider

The test is only possible in seven German cities¹³ and with 850 Euros per sample, it is quite expensive. The German Ministry of Health is currently negotiating with the manufacturer about future pricing¹⁴.

Conclusion

The test could help to identify patients who might suffer a severe course of the disease. But the local possibilities for implementation would have to be expanded so that there is enough capacity to test the patients in need. Especially with regard to implementation in countries with fewer resources, the price of the test still seems quite high.

State of information: 01/12/2021

Authorization in Germany: December 2020

Country: Germany

Focus area: Detection and Diagnostics

Developers:

- DiaPat GmbH
- Mosaiques
- St. Georg Hospital Leipzig

Beneficiaries:

- Covid-19 patients
- Clinicians

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- ¹ WHO. “WHO Coronavirus Disease (COVID-19) Dashboard,” January 12, 2021. <https://covid19.who.int>.
- ² Bajak, Aleszu. “Which Hospitals in Your Community Are Getting Hit Hardest during COVID-19 Surge?” USA TODAY, 2021. <https://www.usatoday.com/story/news/2020/12/30/covid-19-hospitals-over-capacity-searchable-database/4066765001/>.
- ³ Dorn, Sara. “London Hospitals Forced to Prioritize Younger Patients amid COVID,” January 9, 2021. <https://nypost.com/2021/01/09/london-hospitals-forced-to-prioritize-younger-patients-amid-covid/>.
- ⁴ Ärzteblatt, Deutscher Ärzteverlag GmbH, Redaktion Deutsches. “Britische Kliniken wegen Corona zunehmend unter Druck.” Deutsches Ärzteblatt, January 7, 2021. <https://www.aerzteblatt.de/nachrichten/119929/Britische-Kliniken-wegen-Corona-zunehmend-unter-Druck>.
- ⁵ Timcke, Marie-Louise, André Pätzold, David Wendler, Angelo Zehr, Sebastian Vollnhals, and Christoffer Möller. “Corona: Wo schon Intensivbetten in Deutschland knapp sind.” Berliner Morgenpost, January 12, 2021. <https://interaktiv.morgenpost.de/corona-deutschland-intensiv-betten-monitor-krankenhaus-auslastung/>.
- ⁶ Mosaiques Diagnostics And Therapeutics AG. “Mosaiques Diagnostics And Therapeutics AG,” 2021. <https://mosaiques-diagnostics.de/mosaiques-diagnostics/>.
- ⁷ Diapat.de. “Über Den Diapat®-Test - Diapat DE,” 2020. <https://diapat.de/de/ueber-den-diapat-r-test>.
- ⁸ mdr.de. “Urin-Test sagt schweren Covid-19-Verlauf voraus | Das Erste,” January 7, 2021. <https://www.mdr.de/brisant/corona-urin-covid-test-100.html>.
- ⁹ Diapat.de. “Über Den Diapat®-Test - Diapat DE,” 2020. <https://diapat.de/de/ueber-den-diapat-r-test>.
- ¹⁰ BfArM. “BfArM - Homepage,” 2021. https://www.bfarm.de/EN/Home/home_node.html.
- ¹¹ St. Georg Unternehmensgruppe. “COVID-19 - Studie anhand Urin-Test.” St. Georg, 2020. <https://www.sanktgeorg.de/artikel/covid-19-studie-anhand-urin-test-488.html>.
- ¹² Deutsches Ärzteblatt. “Urintest zur Verlaufsprognose bei COVID-19 zugelassen.” Deutsches Ärzteblatt, January 11, 2021. <https://www.aerzteblatt.de/nachrichten/119977/Urintest-zur-Verlaufsprognose-bei-COVID-19-zugelassen>.
- ¹³ Diapat.de. “CoV-50-Test - Diapat DE.” Accessed January 12, 2021. <https://diapat.de/de/cov-50-test>.
- ¹⁴ Deutsches Ärzteblatt. “Urintest zur Verlaufsprognose bei COVID-19 zugelassen.” Deutsches Ärzteblatt, January 11, 2021. <https://www.aerzteblatt.de/nachrichten/119977/Urintest-zur-Verlaufsprognose-bei-COVID-19-zugelassen>.

Background on Innovation Sheet Series

As part of a real-time evaluation of the SARS CoV 2 pandemic (with focus on epidemiological, medical, economical, societal, technical, and cultural developments in Germany and Armenia) the CoronaSys research team, under the leadership of Prof. Dr. Martin Voss, is conducting a continuous monitoring of developments and medical, technical, and social innovations concerning Covid-19.

Multiple national and international media outlets, research platforms, and scientific and organizational guidelines, briefs, and updates are screened to feed into this outlet. The rationale behind this is to support the projects' network partners in Armenia and Germany with short summaries of key developments and promising innovations that are shaping the global, German, and Armenian outbreak response and recovery.

The aim of these short briefs is to give condensed and structured information on selected innovations emerging out of the conducted horizon scanning. This could be mainstream big-ticket items or fringe subjects that are easily overlooked in the global flood of information. Some innovations will be followed through their evolution in time while others may only appear once. While subjectively selected, the briefs are descriptive in nature and leave analysis and critical interpretation to the reader. Network partners in both countries are invited to provide feedback on their interest areas and suggest particularly relevant topics for the CoronaSys Workshop series.

The CoronaSys Innovation Sheet Series is published by the [Academy of the Disaster Research Unit](#), which is, as a non-profit limited liability company, a spin-off of the [Disaster Research Unit](#) at the Free University of Berlin. The series is part of the research project "[CoronaSys](#): Addressing the corona pandemic in Armenia through systemic risk management", sponsored by the German Federal Ministry of Education and Research.

If you have any questions, suggestions, or if you wish to be taken on (or off) the project mailing list for CoronaSys updates, innovation sheets, and workshop invitations, please send a message to Janina Schäfer (schaefer@a-kfs.de). For general project inquiries, you may contact the team lead Sara Merkes (merkes@a-kfs.de) or the project lead Martin Voss (voss@a-kfs.de).

Previous CoronaSys Innovation Sheets

- 1 "New" Antiviral Face Masks
- 2 "Dyphox" Surface Coating
- 3 MOVES SLC Portable ICU
- 4 Portable TRI- KLEEN 500UV
- 5 Convalescent Plasma Therapy
- 6 ASIC-App
- 7 BinaxNOW Antigen Test
- 8 Corona Traffic Light
- 9 Aproof at Home Antibody Test
- 10 IVAT Hygiene Tower
- 11 LY-CoV555 Antibody Treatment
- 12 4C Mortality Score
- 13 Regional Corona Prediction Model
- 14 Computer-designed Mini- Proteins
- 15 Covid-19 Simulator
- 16 Trimodulin
- 17 BNT162b2-Vaccine
- 18 SARS-COV-2 Rapidplex
- 19 European Corona- Map
- 20 FELUDA Paper Strip Test
- 21 Humanitarian Action Mapping Tool
- 22 IKKA Score
- 23 WHO Digital Implementation Investment Guide
- 24 RCCE Toolkit
- 25 Cough-Analyzing App
- 26 Follow Up on LY-CoV555 Antibody Treatment
- 27 Follow-up on BNT162b2-Vaccine
- 28 Lucira™ COVID-19 All-In-One Test Kit
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- 30 AI-Epidemiology-Model
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- 33 Rapid Hospital Readiness Checklist
- 34 School Reopening Checklist
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- 36 Prioritization Roadmap
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- 38 TV Schooling
- 39 Octea Test

All previous CoronaSys Innovation Sheets are available online:

<http://coronasys.a-kfs.de/category/innovation-stream/>

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