hiv resistance response database initiative

HIV TRePS
HIV Treatment Response Prediction System

PRESS RELEASE

HIV-TRePS on the move

Latest version designed for mobile devices and super-fast speed

LONDON, UK; Thursday 13th March 2017. The RDI's free online HIV Treatment Response Prediction System (HIV-TRePS) has been re-designed to work on mobile devices such as mobile phones and tablets and at super-fast speed. Users simply log-in via their usual browser and the user interface automatically resizes for their particular mobile device.

HIV-TRePS uses machine learning from tens of thousands of HIV patients treated by hundreds of physicians around the world to predict how an individual patient will respond to any combination of HIV drugs. The new mobile version enables physicians to access this tool on the move, such as during ward rounds, home visits, clinical meetings and even while travelling – anywhere with at least a 3G phone signal available. The system has also been optimised for processing speed, with the average time to run a case (over broadband) reduced from up to a minute to around 10 seconds.

"This latest version of our system really puts a huge amount of treatment experience in the hands of the busy physician as they work", commented Dr Andrew Revell, Executive Director of the RDI. "Not only can the healthcare professional get a prediction of treatment response for their patient wherever they are but can also access previous predictions and reports on the move."

The new version of HIV-TRePS is also powered by the RDI's latest developments in machine learning. The random forest models, which do not require a viral genotype for their predictions, predicted responses with an accuracy of approximately 80% during independent testing. This is significantly more accurate than the use of genotypic resistance tests as a predictor of response – the most common test used to guide individualised drug selection.

"Once again the RDI models have substantially out-performed genotyping with rules-based interpretation as a means of predicting treatment outcomes" commented Dr Brendan Larder, Scientific Chair. "These latest models available on mobile devices in the field add to the substantial body of evidence suggesting that, where resources are scarce, individualized treatment is still possible using this free tool".

The permissible time period over which the baseline data used for the predictions can have been collected were also relaxed for the first time in these models, up to 24 weeks for CD4 counts and 12 weeks for viral loads. There was no loss of accuracy compared with models using more stringent, narrower time windows. This increases still further the potential utility of the system in less well-developed healthcare settings, where patients may not be monitored as frequently.

The RDI is an independent, not-for-profit research group set-up in 2002 with the mission to improve the clinical management of HIV infection through the application of bioinformatics to HIV drug resistance and treatment outcome data. Over the fifteen years since its inception, the RDI has worked with many of the leading clinicians and scientists in the world to develop the world's largest database of HIV drug resistance and treatment outcome data, containing information from approximately 180,000 patients in more than 30 countries.

Notes:

HIV-TRePS is an experimental system intended for research use only. The predictions of the system are not intended to replace professional medical care and attention by a qualified medical practitioner and consequently the RDI does not accept any responsibility for the selection of drugs, the patient's response to treatment or differences between the predictions and patients' responses.

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More information can be found at: www.hivrdi.org.

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The following are available for interview on request, arranged through Andrew Revell above:

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Dr Andrew Revell: Executive Director, RDI, London, UK.