



DISCOVERY

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Big Data Shows Big Promise in Lupus

The feature [“Can Big Data Tell Us What Clinical Trials Don’t?”](#) in yesterday’s *New York Times* highlights how doctors are beginning to apply big data to guide patient treatment. The article starts with the story of a girl with acute lupus kidney disease. Her rheumatologist, Dr. Jennifer Frankovich at Stanford’s Packard Children’s Hospital, was uncertain whether the girl was at risk for blood clots, but could not find answers in the medical literature. So Dr. Frankovich ran her own analysis of the hospital’s database of lupus patients and found that yes, patients with similar symptoms tended to develop life-threatening clots.

The article poses the questions whether such data-mining approaches could become a standard part of patient care and in some cases substitute for expensive clinical studies and trials.

In fact, the [Lupus Research Institute \(LRI\)](#) believes it is the combination of big data and research in patients that gives us the most powerful approach and greatest hope for improving treatment of those living with lupus.

The LRI together with the Alliance for Lupus Research are founding partners in the [Accelerating Medicines Partnership \(AMP\)](#) of the National Institutes of Health (NIH). This large-scale collaboration between industry, the NIH, and non-profits is creating a new research network to collect and analyze big data from hundreds of lupus patients. The vast datasets will contain every bit of patient information that can be gleaned, from their genes and medical history, right down to behaviors of their cells and even the patterns of molecular signals within individual cells. This data will help provide new targets for drug development, new biomarkers and new understanding of how to match the right treatment to the right patient.

Later this month, LRI investigators and scientific advisors, several of whom are leaders in the AMP network of research sites, will meet to share their latest findings at our annual research conference “Forum for Discovery.” Our special focus this year is big data and how it is revolutionizing the understanding of human autoimmune disease and accelerating the development of new treatments.

Featured guest speakers, leaders in this field are Dr. Mark Davis of Stanford School of

Medicine and Dr. Bali Pulendran of Emory University School of Medicine. In addition, a forum of industry experts will explore the role of big data in the discovery and development of new therapeutics and diagnostics. This panel includes genetics and pharmacogenomics innovator Dr. Robert M. Plenge, Merck, and biomarkers expert Dr. Mark Curran, Janssen Pharmaceutical Research & Development.

LRI Advisory Board member and AMP RA/Lupus Network research site leader Dr. Mike Holers, University of Colorado notes, “Innovative early stage research supported by the Lupus Research Institute has strongly suggested that new 'big data' approaches will be very fruitful endeavors in our quest to discover better treatments. Therefore, we certainly expect that the opportunities provided by new disease mechanism-focused analyses of large data sets will help to identify new targets for therapeutic development in lupus.”

About the Lupus Research Institute

The world’s leading private supporter of innovative research in lupus, the LRI champions scientific risk-taking in the hunt for solutions to this complex and dangerous autoimmune disease.

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