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Looking behind the data curtain

A R T I C L E I N F O

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Every immunology researcher experiences the data tsunami effect, generating overwhelming volumes of data—to the point that the ratio of data fully analyzed and published to the amount of data produced in the lab is a strikingly small fraction. This is not to say that the under-analyzed and unpublished data isn't interesting or important. In many cases, however, once some of the primary data has been published, secondary messages are considered lower priority, lower impact, or just forgotten as people change laboratories and move on to other projects.

Yet, there are compelling arguments for assuring that these data are available to the scientific community. For one thing, the published analyses are not the only way to look at the data. And for reasons due to scientific focus, publishing limitations, or personal preference, authors make choices which may lead to presentation of only subgroup data, limited sets of data points, or preferential statistical analyses. Furthermore, when considering human immunology and clinical studies, there is an additional ethical imperative at work, an obligation to honor the human subject's donation of their biologic sample to science by assuring the dissemination of the knowledge gained from study of that sample.

A case-in-point is the literature on the use of anti-CD3 monoclonal antibodies in patients with autoimmune disease. Published data from clinical studies documents a treatment effect manifest as a reversal of the CD4/CD8 T cell ratio [1,2], and recent extensions of this work show an expansion of an interesting CD8 T cell subset associated with markers of activation and/or exhaustion [3]. But there is much more to be learned from these patients, and in this issue of Cellular Immunology, a report from the Immune Tolerance Network (ITN) presents a more comprehensive flow cytometry study that provides additional insights into immunomodulation via the CD3 axis [4]. But even with this publication, there is a large amount of data "not shown", and opportunities for many alternative analyses and interpretations of the extensive dataset. For this reason, links are embedded in the text and Figure legends that will take the online readers of this article directly to ITN TrialShare, a data display portal that encourages readers to access and reanalyze the original data from this study—all of it, not just the published subset—completely open and unrestricted.

TrialShare (www.itntrialshare.org) is an online resource provided by the ITN, displaying data from a large number of clinical studies in autoimmunity, transplantation, and allergy. Online tools incorporated in TrialShare allow users to analyze and display data using user-defined criteria, to select individual or groups of participants and samples for re-analysis, or alternatively to modify the published figures by choosing alternative samples for display. In addition, much like conventional data repositories, users can download raw data files for independent analyses using their own bioinformatics and computing resources.

As discussed elsewhere [5], TrialShare represents a commitment to open data sharing, both for clinical trial data but also for extensive immunologic and mechanistic data associated with the subjects in those trials. Sophisticated masking procedures are used to enable the use of participant-level data without compromising personal privacy or limiting access. Publications in Cellular Immunology that present data from ITN studies will embody this commitment to data sharing by encouraging readers to utilize the TrialShare platform, and thereby expand the dissemination and impact of information available from these studies. Together with the editors of Cellular Immunology, the ITN encourages you to explore the TrialShare resource and use these data for new ideas and research insights that expand our knowledge of immunologic disease and therapy.

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