

## Supplementary Information

### Supplementary Figure Legends

Figure S1 (*Related to Table 1*). MIS-C disease course and sample collection. (A) Timeline of admission, treatment, sample collection and discharge. (B) Laboratory markers of inflammation, coagulopathy and cardiac dysfunction in response to IVIG and/or TCZ treatment. Dotted lines represent normal limits.

Figure S2 (*Related to Table 1*). White blood cell count and differential in response to TCZ and IVIG treatment. (Left) Percentage values of immune cell types during treatment course to TCZ and IVIG across all MIS-C patients. (Right) Absolute counts of immune cell types during treatment course to TCZ and IVIG across all MIS-C patients. Dotted lines represent normal limits.

Figure S3 (*Related to Figure 3*). Mass cytometry of peripheral blood immune cells. (A) Immune cell frequencies expressed as the log<sub>2</sub> fold change over the mean of healthy controls. (B). B-cell frequency as percent of single cells. (C). Expression of CD169, an interferon-stimulated gene, in monocytes. (E) Relative STAT1 phosphorylation.

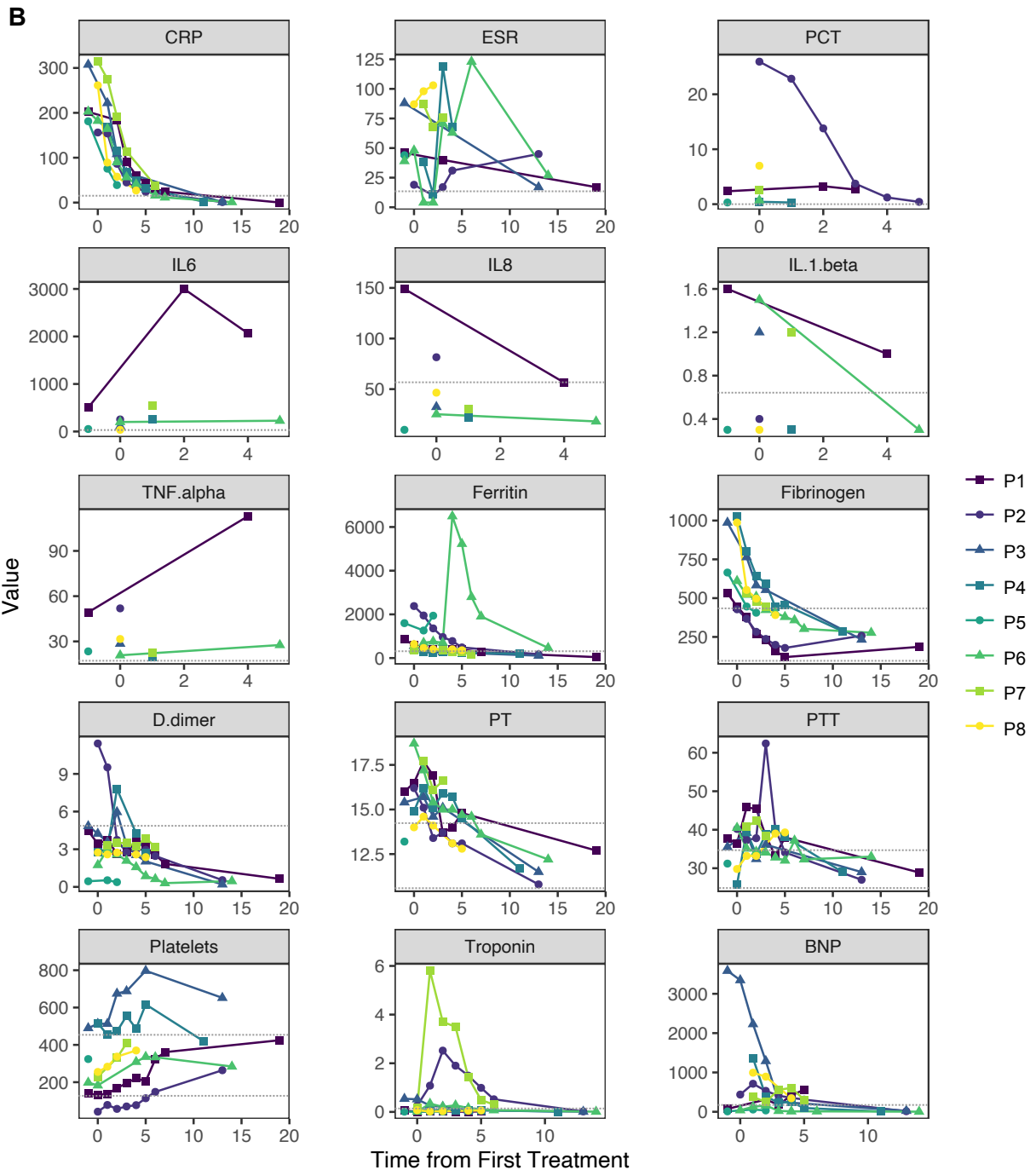
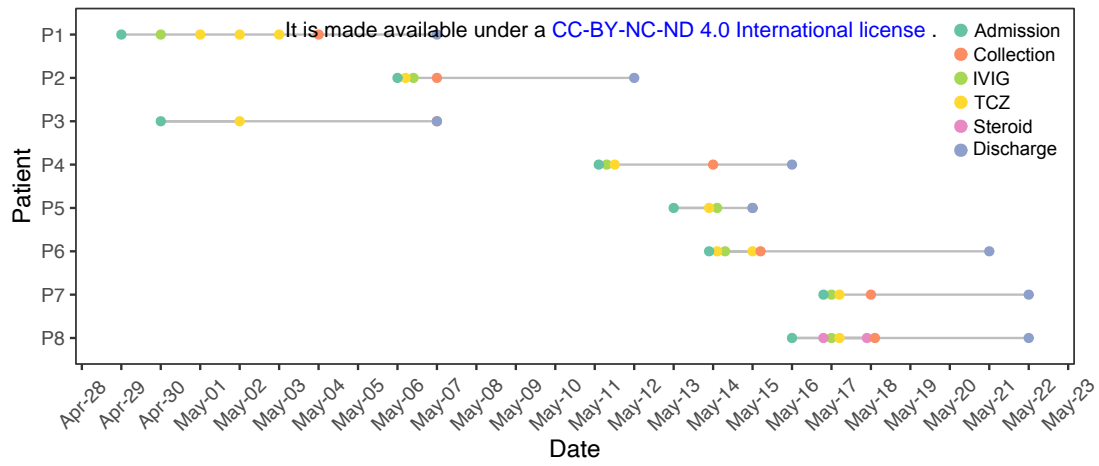


Figure S1

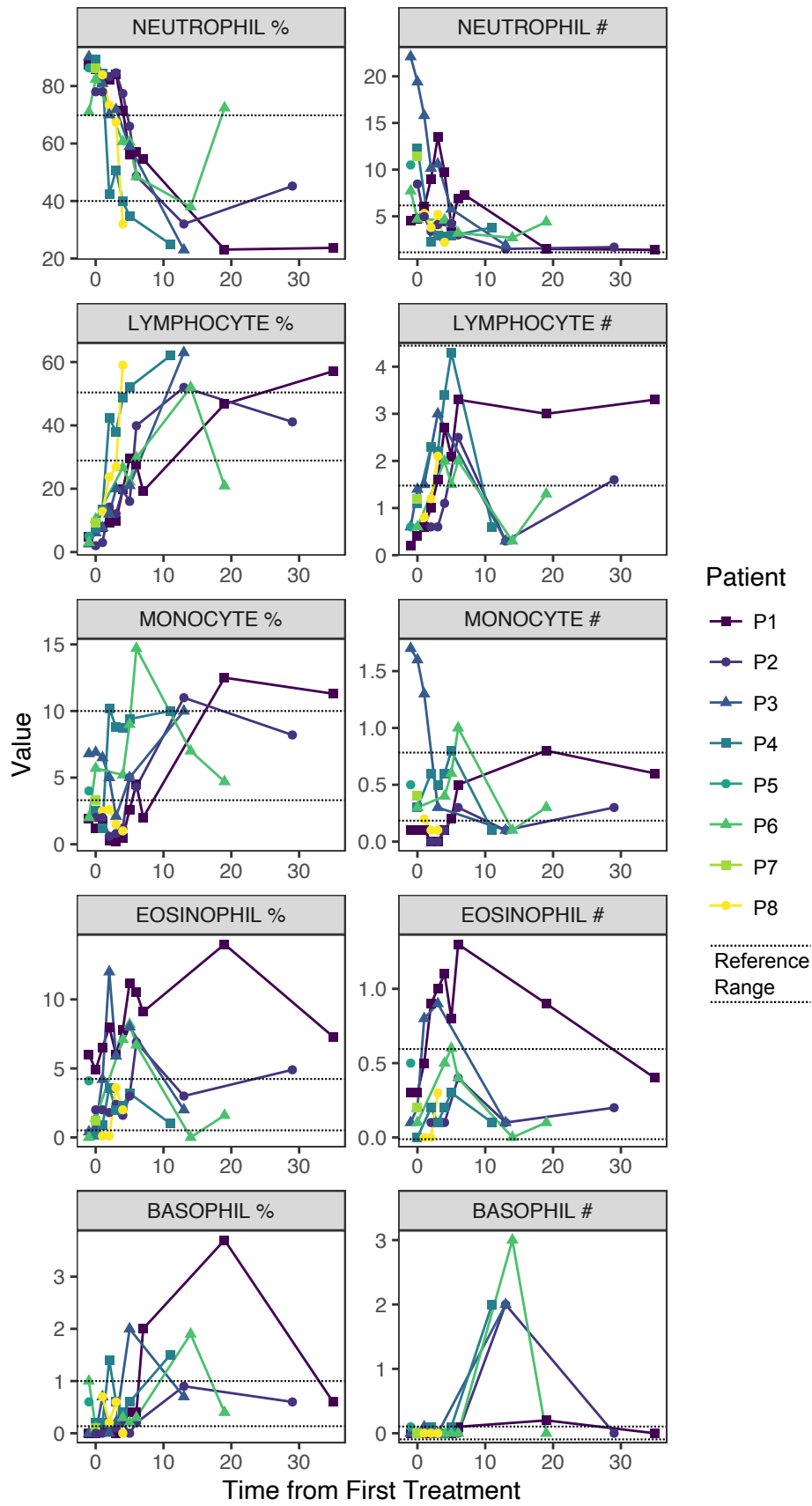


Figure S2

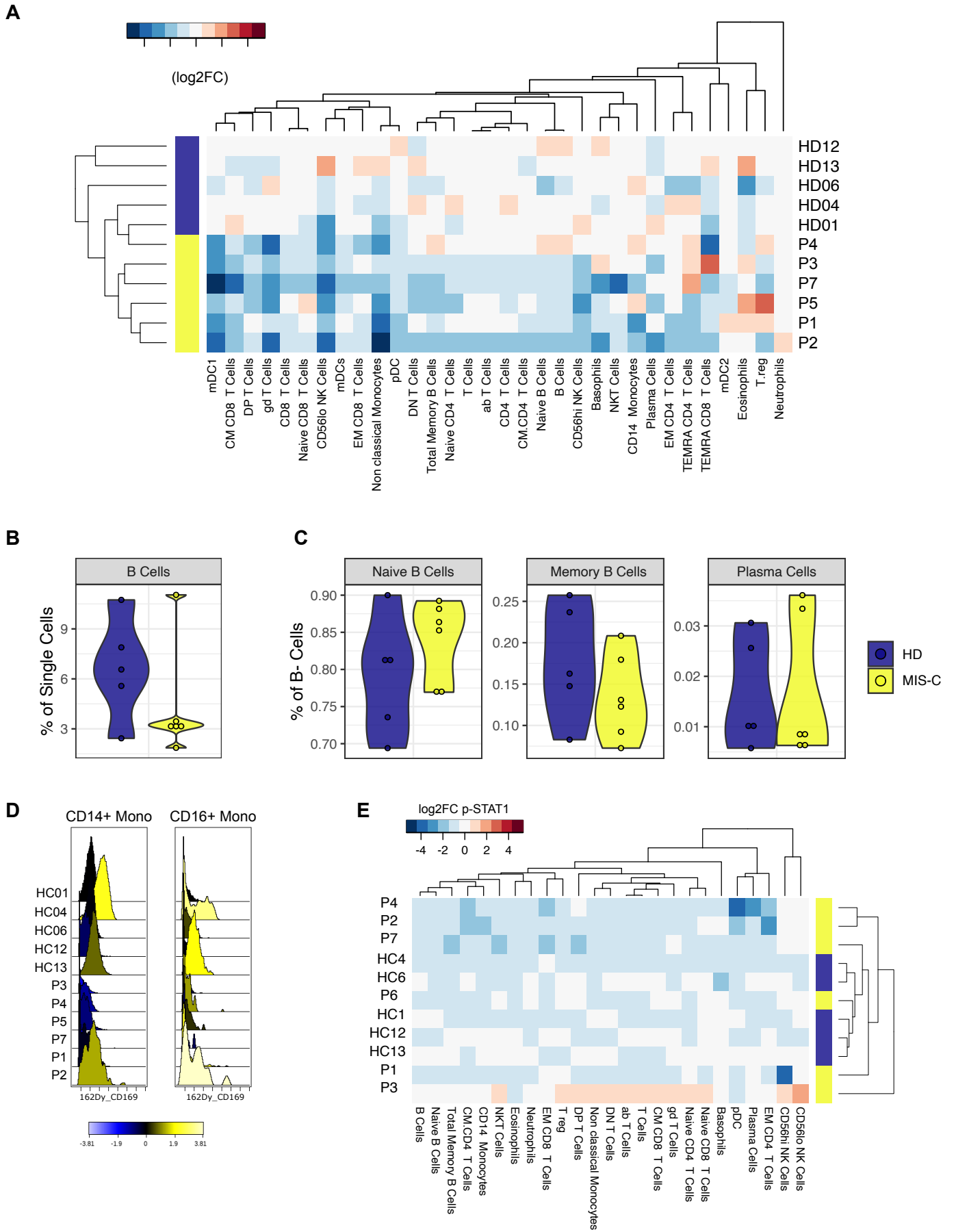


Figure S3