Conclusion
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- Our study clearly identifies a signature set of biomarkers that serves to indicate filarial infection-driven morbidity associated with a persistent and progressive inflammatory milieu. While requiring validation in future studies, these results point to potential prognostic indicators of severe filarial disease.

- Our study clearly identifies a novel role for MMPs and TIMPs as well as Type 2 cytokines in filarial infection-driven morbidity associated with a persistent and progressive tissue fibrosis. While requiring validation in future studies, these results point to MMPs/TIMPs in Filariasis potential therapeutic interventional targets in ameliorating filarial lymphedema and possibly even elephantiasis.

- Our findings suggest that both IL-5+ and IL-5−Th2 cells play an important role in the regulation of immune responses in filarial infection and that these two Th2 subpopulations may be regulated by different cytokine-receptor mediated processes.

- We report an important association of Th9 cells with pathology in filarial infections and demonstrate a role for IL-4, TGF-β, and IL-1 in the regulation of this CD4+ T cell subset.

- Our findings suggest that alterations in the frequencies of CD4+ Th1 cytokines are a characteristic feature underlying the pathogenesis of filarial lymphedema. CD4+ Th1 subsets in the regulation of immune response and the upstream drivers would hold capacity in ameliorating pathological disease manifestations in filarial infections and other pathologies of similar etiology.
Our study therefore, highlights an important role for CD4\(^+\) T cell subsets in the regulation of immune responses in filarial infections and reveals an unexpected elevation in the circulating frequencies of Th17 and Th22 cells. Since fibrotic pathology is the final, common outcome of many chronic inflammatory diseases, our study of Th17 and Th22 cells in filarial disease holds important implications for other inflammatory diseases as well. Our data suggest that targeting the IL-17/IL-22 pathway or its upstream inducers would hold promise in ameliorating pathological disease manifestations in filarial infections and other pathologies of similar etiology.

We have investigated the role of the IL-10 family of cytokines in filarial infection and disease. While we have not performed decades long longitudinal studies to define the development of pathology in filarial infection, our strategy of contrasting immune responses in individuals with subclinical disease and those with chronic clinical manifestations has yielded important information on the role of IL-10, IL-19, IL-24 and IL-26 in pathogenesis.