SESSION III

WORKSHOPS – HOT TOPICS FROM BENCH TO POLICY

Precision Health in IBD: What's on the horizon?

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Objectives

- Discuss the use of biomarkers to select optimal therapies and predict response
- Consider how to differentiate targeted therapies from each other
- Discuss evidence supporting the use of cell-based therapy in IBD

There are a growing number of new therapeutics that target specific components of the immune response and offer new treatment options for patients with IBD. A major goal is to develop personalized approaches so therapies are selected on the basis of patient-specific disease etiology. Such an approach would improve the likelihood of efficacy, and minimize risk in those with little chance of benefit. Examples of therapies that could be used in a more targeted fashion include small molecules, biologics, and cell-based therapies. For small molecules and biologics, it has been hypothesized that biomarker-based measurement of targeted pathway activity could be useful for selecting patients. For example, mucosal TNF expression has been successfully correlated with response to anti-TNF antibody treatment in patients with Crohn's disease.[1] However, a challenge is that most of these biomarker studies have a small sample size and lack external validation, so more work is required prior to integration into clinical practice. Another challenge with small molecules and biologics is that these agents are often not disease modifying, so do not lead to inflammation resolution. An alternate approach is the use of cell-based therapies which have the potential to re-set immune responses. As "living drugs", cell-based therapies harness natural biological processes and cellular networks, giving them the potential to re-set immune responses in the long-term. Evidence from animal models suggests that regulatory T-cell therapy has the potential to prevent and treat IBD, with small studies in humans planned and ongoing.[2,3] Drawing from work in other disease settings, it can be foreseen that such regulatory T-cell therapies will be further improved by using strategies to optimize their specificity and mechanisms of action.[4]

References

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3. Treg Immunotherapy in Crohn's Disease (TRIBUTE) https://clinicaltrials.gov/ct2/show/NCT03185000
4. Boardman D, Levings M. Emerging strategies for treating autoimmune disorders with genetically modified Treg cells. *J Allergy Clin Immunol*. 2022 Jan;149(1):1–11.