Characterization of JAK/STAT Pathway Activation in Ulcerative Colitis: A Methodology for Identifying Activation Patterns Towards Personalized Treatment Approaches.

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Ulcerative colitis (UC) is a disease characterized by continuous inflammation and colon ulcer formation, with a characteristic pattern of recurrence and recovery. UC is associated with alterations in intestinal homeostasis, leading to overstimulation of the immune system and chronic inflammation. Despite progress in the treatment, a large proportion of patients remain unresponsive, resulting in relatively high failure rates. This failure is thought to be due to the heterogeneity of the activation of the inflammatory pathways involved in UC, pathophysiology, such as JAK/STAT pathways.

This study aims to establish a methodology for characterizing the activation of the JAK/STAT pathway in UC patients and to evaluate its variability among individuals. Phosphorylation levels of key proteins in this pathway were assessed in colon tissue samples from patients using Western Blot analysis.

The analysis results indicate a significant increase in phosphorylation levels of all the JAK and STAT pathways studied, with variation between specific proteins and activation intensity observed between different patients. These findings pave the way for the differential stratification of patients in the selection of UC treatments.