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Summary

DISSECTING THE ROLE OF OSM-OSMR AXIS IN INTESTINAL INFLAMMATION AND TISSUE REMODELING

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Histopathology | Surgery | Radiology & Imaging | Mechanisms & Personalised Medicine | Immunology | IBD

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OSM-associated inflammation identifies IBD with severe epithelial damage and neutrophil infiltration, but disrupting OSM-OSMR signaling does not improve acute injury and shows compartment-dependent effects in chronic inflammation.

KEY POINTS

- OSM Inflammatory module high patients displayed increased histopathological score, epithelial erosions and ulcerations, and increased lamina propria neutrophil infiltration compared with Inflammatory module low patients.
- Spatial analysis highlighted spatial proximity of OSMhi neutrophils to epithelial erosions and ulcerations.
- Disrupting OSM-OSMR signaling across multiple cellular compartments did not alter histopathological severity in the acute epithelial loss model.
- In chronic DSS, endothelial OSMR deletion altered collagen deposition without affecting histopathological inflammation or colon features after three cycles of DSS.
- OSMR deletion in stromal cells preserved colon length and reduced immune-cell infiltration, suggesting mesenchymal OSMR signaling contributes to chronic intestinal inflammation.
- The functional consequences of OSM-OSMR signaling depend on pathological features, disease stage and the responding cellular compartment, with endothelial OSMR linked to tissue remodeling and mesenchymal OSMR to immune infiltration.

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