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Summary

COLONIC MAST CELL ACTIVATION IS LINKED TO MENTAL AND SOMATIC SYMPTOM SEVERITY IN IRRITABLE BOWEL SYNDROME: RESULTS FROM THE DISCOVERIE PROJECT (EU-FUNDED PROJECT Nº: 848228)

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In IBS patients with mental and somatic comorbidities, colonic mast cell activation (increased tryptase-stained area and ultrastructural degranulation) is elevated compared to IBS alone and correlates with symptom severity, despite similar mast cell counts across groups.

KEY POINTS

- IBS patients with mental comorbidity (IBS-Co) and those with both mental and somatic comorbidities (IBS-Mco) exhibited significantly higher percentage of tryptase-stained area in colonic lamina propria compared to IBS alone (IBS-A) (p=0.038 and p=0.021, respectively), despite similar mast cell infiltration across all groups.
- IBS-Mco patients showed higher percentage of mast cells with very high activation profile (vesicles fusion and piecemeal degranulation) compared to healthy volunteers (p=0.009) and IBS-A (p=0.031) on transmission electron microscopy.
- IBS-Co and IBS-Mco groups had higher percentage of mast cells in close proximity (less than 5 micrometers) to nerve fibres compared to healthy volunteers (p=0.013).
- Percentage of tryptase-stained area correlated with somatic symptom severity (PHQ-15, r=0.352, p=0.04), mental fatigue (MFI Mental, r=0.438, p=0.01), and physical fatigue (MFI physical, r=0.376, p=0.03).
- Percentage of mast cells in close proximity to nerve fibres correlated with IBS symptom severity score (IBS-SSS, r=0.56, p=0.03).
- Study included 10 healthy volunteers, 9 IBS-A, 10 IBS-Co, and 10 IBS-Mco patients recruited across five European hospitals; all IBS patients met Rome IV criteria.

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