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GI learning, personalised

Summary

UEG Research Prize Award: Stem cell ecosystem in gastrointestinal cancer initiation – reciprocal interplay between stem cells and niche

Michael Sigal

UEG Week Barcelona 2026 | Presentation

Endoscopy | Mechanisms & Personalised Medicine | Digestive Oncology

October 18, 2026

The speaker presented research on targeting the cellular microenvironment to prevent gastrointestinal cancers at early premalignant stages, proposing a molecular cancer prevention approach.

KEY POINTS

- The speaker stated that despite advances in treating advanced GI cancers, these malignancies still account for one-quarter to one-third of all cancer deaths worldwide, highlighting the need to intervene earlier in the carcinogenic process.
- The research shows that premalignant lesions in the stomach and colon develop through signal cascades between multiple cell types—epithelial cells, immune cells, and stromal myofibroblasts—rather than through cell-intrinsic mutations alone, and these cascades can be interrupted.
- Experimental data presented by the speaker demonstrated that blocking stromal IL-1 signalling prevented gastric pathology development after Helicobacter pylori infection, and that targeting mesenchymal prostaglandin signalling completely blocked activation of regenerative pathways.
- The team developed culture systems called assembloids that allow study of epithelial-stromal interactions and formation of crypt structures resembling human tissue within days.
- The project will integrate mechanistic studies using single-cell spatial transcriptomics and assembloid technology with a Cancer Prevention Clinic at the Charité to design trials aimed at stopping or reversing carcinogenesis in at-risk patients.

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