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Summary

From Indigo naturalis to colon-targeted AhR activation: A translational strategy for ulcerative colitis

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A presentation on indigo naturalis for ulcerative colitis describes a randomized trial showing higher remission and mucosal healing versus placebo, mechanistic studies demonstrating aryl hydrocarbon receptor-mediated colonic regulatory T-cell accumulation, and development of a colon-targeted formulation to mitigate pulmonary arterial hypertension risk associated with long-term use.

KEY POINTS

- The speaker reported a placebo-controlled randomized trial in which indigo naturalis achieved higher rates of remission and mucosal healing compared with placebo and could be safely administered within eight weeks.
- Mouse studies and human rectal biopsies showed that the treatment increases colonic regulatory T cells with specific markers including CD103, Granzyme A, and Helios through aryl hydrocarbon receptor signaling in epithelial cells.
- A fact-finding survey identified most pulmonary arterial hypertension cases in patients treated for more than six months, prompting the speaker's team to develop a colon-targeted delivery system.
- The new formulation released indigo specifically in the large intestine, attenuated murine colitis at lower doses than indigo powder, upregulated CYP1A1 only in the colon, and caused less liver dysfunction.
- In discussion, the speaker recommended the therapy for patients reluctant to use or not responding to immunomodulatory agents and stated the goal is to introduce it as standard therapy.

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