AURICULAR TRANSCUTANEOUS STIMULATION AS AN EXPLORATORY PREOPERATIVE SCREENING TEST FOR CLINICAL RESPONSE TO VAGUS NERVE STIMULATION IN DRUG-RESISTANT CROHN'S DISEASE

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Transcutaneous auricular vagus nerve stimulation did not predict clinical response to implanted vagus nerve stimulation in patients with therapy-refractory Crohn's disease.

KEY POINTS

- In 13 patients with moderately to highly active Crohn's disease who had failed biological therapies, changes in ex vivo cytokine levels (TNF, IL-1b, IL-6) following transcutaneous auricular vagus nerve stimulation showed no significant difference between patients who later responded to implanted vagus nerve stimulation at week 16 and those who did not respond ($p>0.4$).
- Of 8 responders to implanted vagus nerve stimulation therapy, approximately half showed decreased or no change in bioassay cytokines at 1 and 4 hours post transcutaneous stimulation, while approximately half showed increased or minimal change; a similar pattern was observed in the 5 non-responders.
- The authors suggest possible explanations include inconsistent activation of correct nerve fibers by the transcutaneous device, a disconnect between transcutaneous and implanted stimulation effects on the inflammatory reflex, or the relatively high endotoxin concentration used in the bioassay.
- The authors conclude that transcutaneous auricular vagus nerve stimulation has not yet been validated as a clinically useful screening approach to predict response to implanted vagus nerve stimulation.

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