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Impact of Hyperbaric Oxygen Therapy on Perianal Fistulas in Crohn's Disease: Clinical Outcomes and Remission Rates

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Background: Crohn's disease (CD) is a chronic inflammatory bowel disorder with debilitating complications such as perianal fistulas, affecting 14-38% of patients (1). Conventional treatments often achieve limited success, necessitating adjunctive approaches (2,3). Hyperbaric Oxygen Therapy (HBOT), known for its wound-healing and anti-inflammatory properties, has emerged as a potential therapy for complex CD cases (4,5). This study evaluates the efficacy of HBOT in combination with standard treatments for reducing perianal fistula activity and achieving clinical remission in patients with CD.

Methods: A cohort of 11 patients with CD-associated perianal fistulas underwent surgical preparation followed by 30 sessions of HBOT (2.5 ATA, 90 minutes per session). Disease activity was assessed using the Crohn's Disease Activity Index (CDAI), Simple Endoscopic Score for Crohn's Disease (SES-CD), Perianal Disease Activity Index (PDAI), and laboratory markers (CRP, fecal calprotectin, hemoglobin, and serum iron). Outcomes were evaluated at baseline, post-treatment (6 weeks), and follow-up (9 months).

Results: Clinical Improvement: 81.8% of patients demonstrated a significant reduction in CDAI scores. Remission Rates: 54.5% achieved remission (SES-CD, PDAI). 72.8% exhibited normalized fecal calprotectin levels (≤ 250 $\mu\text{g/g}$). Improvements were maintained 9 months post-treatment. Minimal side effects, including transient hearing impairment and headaches, were reported.

Conclusion: HBOT as an adjunctive therapy significantly improves clinical outcomes in CD patients with perianal fistulas. It enhances remission rates, reduces inflammation, and sustains benefits over long-term follow-up. This study highlights the potential of HBOT as a therapeutic option for refractory CD cases. Further randomized controlled trials are warranted to validate these findings.

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