

**Treatment of Crohn's Complex Perianal Fistulas With Tissue Transplantation by Local Injection of Micro-fragmented Autologous Adipose Tissue. Multicenter Randomized Controlled Prospective Study
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Complex perianal fistulas represent one of the most challenging manifestations of Crohn's disease. Combined surgical and medical therapy with biologic drugs today represents the first-line treatment option, but its efficacy does not exceed 60%. Recently, new therapeutic approaches, such as autologous microfragmented adipose tissue (M-Fat) injection, have shown promising results. Indeed, a recent nonprofit prospective pilot study on 15 patients has demonstrated that the local injection of M-Fat is a safe and promising "rescue therapy" for patients with multiresistant complex fistulizing Crohn's disease (PCD), with a 66.7% rate of combined remission in such difficult patients.

The primary aim of this multicentre randomized controlled trial is to evaluate the efficacy of the infiltration of M-Fat in the healing of perianal fistulas not-responding to treatment with biologics. Consecutive patients referring to the investigation centers for surgical treatment of persistent complex fistulizing PCD refractory to biosurgical approach are assessed for eligibility. After baseline pelvic magnetic resonance imaging, those who are included are randomized to receive a surgical drainage with "cone-like" fistulectomy, followed by a single-local administration of M-Fat prepared with an enzyme-free technology at the internal orifice level and along fistula tract(treatment group) or followed by a single-local infiltration of saline solution and suture placement positioning at the internal orifice (control group).

Up to now, 71 patients have been enrolled. Clinical follow-up are conducted at 2, 4, 8, 12, and 24 weeks; at 24 weeks after surgery, pelvic magnetic resonance imaging is obtained to assess the combined remission.

This multicentre prospective randomized controlled trial aims to demonstrate that the intraoperative injection of M-Fat is safe and effective in healing complex perianal fistulas, while improving the quality of life and significantly reducing the risk of definitive oostomy.