

Evaluating the Impact of Iron Chelation on Fibroid-Related Symptom Severity in Premenopausal Women with Elevated Serum Ferritin: A Double-Blind Randomized Trial

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ABSTRACT

Iron overload has been associated with uterine fibroids with available treatments options carry limitation whether hormonal or surgical. This study explored the role of using iron chelation intervention to improve fibroid-related symptoms and quality of life in premenopausal women with elevated ferritin levels. To evaluate the clinical impact of Deferasirox, an oral iron chelator, on symptom severity and inflammatory biomarkers in women with MRI-confirmed fibroids and high serum ferritin. A double-blind, randomized, placebo-controlled trial was conducted with 100 women aged 30–45 years received Deferasirox (15mg/kg/day) or placebo for 8 weeks. Outcomes included UFS-QOL symptom severity scores, health-related quality of life (HRQoL), and levels of serum ferritin, IL-6, and estradiol. After week 8, the interventional therapy, there were significant reduction in symptom severity (28.94 ± 12.76 versus 45.46 ± 10.09 , $p < 0.001$) and higher HRQoL (77.94 ± 16.22 versus 54.28 ± 14.57 , $p < 0.001$) than controls. Ferritin and IL-6 levels declined significantly in the intervention group (ferritin: 191.18 ± 82.66 versus 270.04 ± 67.47 ng/mL, $p < 0.0001$; IL-6: 29.30 ± 9.96 versus 42.50 ± 10.44 pg/mL, $p < 0.0001$). Estradiol levels remained statistically unchanged ($p = 0.6232$). Multivariate regression confirmed that treatment group was the only significant predictor of both improved symptom severity and HRQoL. Iron chelation therapy reduced fibroid-related symptom and improved the quality of life via anti-inflammatory mechanisms, providing a promising non-hormonal treatment for symptomatic uterine fibroids.

Keywords: Iron chelation, Deferasirox, Ferritin, Iron overload, Uterine fibroids.

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