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Personalized Use of GnRH Agonists for Uterine Fibroids and Hormonal Regulation

Xiaoyu Geng

985 Hospital Of PLA Army, China

Objective: As a common gynecological disorder, uterine fibroids significantly impact the health of a large population of women. The personalized application of Gonadotropin-Releasing Hormone (GnRH) agonists holds significant importance in the treatment of uterine fibroids, as it effectively reduces fibroid volume and associated symptoms through hormone balancing strategies. This review aims to explore the personalized application of GnRH agonists in the treatment of uterine fibroids and its impact on hormone balance. **Methods and Materials:** A retrospective cohort study was conducted using health insurance data from Pubmed from 2010 to 2023. Data from 17,207 patients undergoing GnRH agonist treatment for uterine fibroids were collected. The study compared the incidence rates of severe liver disease, mild liver disease, and liver transplantation between patients treated with GnRH agonists and Ulipristal Acetate (UPA). In-depth analysis was performed on matched data of 11,445 patients in each group after 1:1 propensity score matching. **Results:** The study found no cases of liver transplantation in either the UPA or GnRH agonist groups. In the GnRH agonist group, there were 90 cases of chronic hepatitis, while the UPA group had 377 cases. The overall incidence rate of liver disease (RR 1.111; 95% CI: 1.015-1.216) and mild liver disease (RR 1.094; 95% CI: 1-1.196) during treatment was higher in the UPA group compared to the GnRH agonist group. There were no significant differences in the incidence rates of severe liver disease (RR 0.07; 95% CI: 0.001-4.412) and toxic

liver disease (RR 1.256; 95% CI: 0.845-1.867) between the two groups. **Conclusion:** Although the UPA treatment group exhibited a higher incidence of mild liver disease compared to the GnRH agonist treatment group, there was no significant difference in the incidence rates of severe liver disease and toxic liver disease between the two treatment modalities. This suggests that GnRH agonists are a safe choice for personalized treatment of uterine fibroids and carry a lower risk of liver disease compared to UPA. However, considering UPA's ability to rapidly alleviate symptoms of uterine fibroids related to severe bleeding without suppressing estrogen levels, clinicians should comprehensively assess individual patient conditions and liver function when selecting a treatment regimen. Future research should strive for more objective evidence and data-driven perspectives to provide patients with safer and more effective personalized treatment strategies

Biography

Xiaoyu Geng is a leading specialist at 985 Hospital of PLA Army, China, with a focus on the personalized application of GnRH agonists in treating uterine fibroids. Geng's expertise lies in advancing hormonal balance strategies tailored to individual patient needs, contributing significantly to research and clinical approaches in gynecology and women's health. As a recognized expert, Geng is actively involved in scientific discussions and presentations on innovative therapies for uterine fibroids and related reproductive health issues.