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The Effect of G-CSF on Infertile Women Undergoing IVF Treatment

Jie Li^{1*} and Yang Chen²

¹The Guangxi Zhuang Autonomous Region Family Planning Research Center, China

²Department of Urology and Nephrology, First Affiliated Hospital of Guangxi Medical University, Nanning, China

*Corresponding author: Jie Li, The Guangxi Zhuang Autonomous Region Family Planning Research Center, China, Tel: 13977124311; E-mail: lijie2012@126.com

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Short Communication

We read with interest the research by Xu et al. [1] exploring the efficacy of intrauterine instillation granulocyte colony-stimulating factor (G-CSF) for thin endometrium. Compared with the control group, significantly higher embryo implantation and clinical pregnancy rates were observed in the G-CSF group (31.5% vs. 13.9%; 48.1% vs. 25.0%; respectively). Around the same time, reported similar pregnancy outcomes [2]. However, Li et al. failed to demonstrate that G-CSF had the potency to improve the pregnancy outcomes of the infertile women with thin endometrium [3]. In spite of these different results, the increases of endometrial thickness were not significantly different in all of the above researches.

We applaud those authors for exploring the efficacy of intrauterine instillation G-CSF for infertile women with thin endometrium, which currently was the key factor in affecting the success of assisted reproduction. At the same time, we think that more detailed analysis is needed in order to explore the mechanisms. Schjenken et al. and Sharkey et al. suggested the levels of G-CSF increased during the interaction of seminal fluid and epithelial cells, further contributing to the conception [4,5]. Meanwhile, as for the patients undergoing assisted reproduction treatment, the better clinical pregnancy outcomes could be observed by adding the G-CSF to embryo culture medium in some extent [6]. However, for patients with thin endometrium, the production of G-CSF was influenced by abnormal function of endometrium and the mechanism for affecting the implantation should be further explored. For endometrial thickness, the studies by Xu et al. and Li et al. did not perform subgroup analyses according to pregnancy outcome, even though none of them detected the difference [1,3].

On the basis of the similar results of Xu et al., our latest meta-analysis was conducted to investigate the effect of G-CSF on pregnant outcomes with six studies and 607 participants involved [1,7]. These results indicated that G-CSF might have the capacity to improve pregnancy outcomes, especially for patients with the thin endometrium or repeated IVF failure.

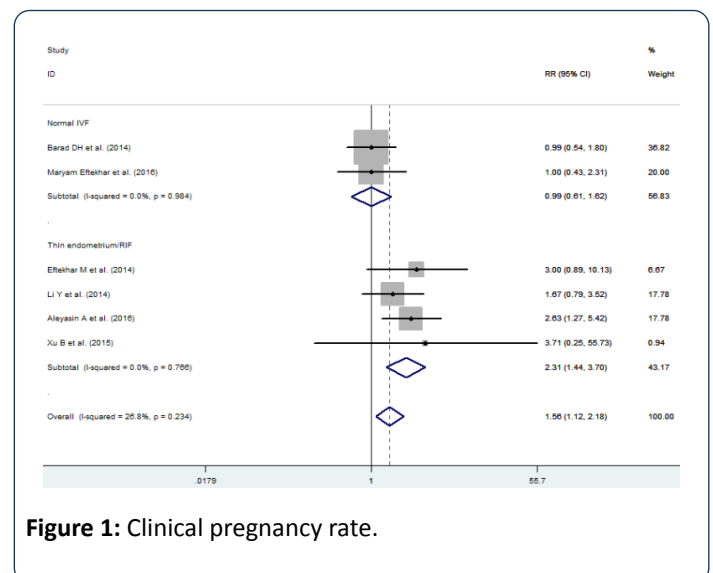


Figure 1: Clinical pregnancy rate.

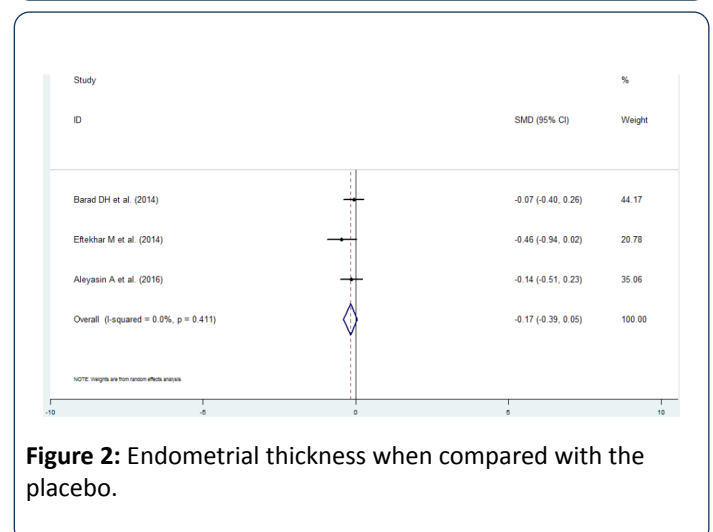


Figure 2: Endometrial thickness when compared with the placebo.

In details, the significant higher clinical pregnancy rate was associated with the use of G-CSF (RR: 1.56, 95% CI: 1.12, 2.18) (Figure 1). However, no statistical significance was detected in increasing endometrial thickness when compared with the placebo (RR: -0.17, 95% CI: -0.39, 0.05) (Figure 2). Additionally, we also suggested that clinicians should consider more about

the efficacy of G-CSF through balancing of cytokines and immune cells, not only focus on the endometrial thickness.

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