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Title:

EFFICACY OF PATIENT SELF-ADMINISTERED RECOMBINANT HUMAN CHORIONIC GONADOTROPIN (RHCG) IS COMPARABLE TO NURSE ADMINISTRED RHCG IN OVULATION INDUCTION CYCLES

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Objective:

Infertility treatment requires patients to overcome a variety of physical, emotional, and financial obstacles. Often, patients express anxiety over self-administration of medications, including subcutaneous recombinant hCG (rHCG). Midluteal rise in progesterone (P₄) levels to $\geq 3\text{ng/dL}$ suggest evidence of ovulation, and of $\geq 9\text{ng/dL}$ of adequate luteinization. Many patients express concern over whether they will adequately be able to self-administer medication. The study sought to determine if the rate and adequacy of ovulatory response is comparable whether a patient or a nurse administers the medication.

Design:

Retrospective cohort study

Materials and Methods:

The study included patients who underwent ovulation induction cycles using either Letrozole or Clomiphene Citrate who had midluteal P₄ levels measured on day +3 to day +10 following rhCG injection from March 2002 to March 2017. The primary outcome was rise in P₄ ($\geq 9\text{ng/dL}$).



Patients were segregated into two groups based on who administered rhCG (Nurse-administered (RN); Self-administration (PT)). Secondary outcomes were clinical and biochemical pregnancy rates between the study groups and between patients with a $P_4 < \text{or} \geq 9\text{ng/dL}$. Chi-square test, t-test, and regression analysis were performed using SAS. Significance was confirmed with $p < 0.05$.

Results:

A total of 672 cycles met the inclusion criteria. All patient demographic, follicle size and count, and drug administration characteristics were included in the analysis. Regardless of whether a nurse or the patient herself administered rhCG, no significant difference was observed between midluteal P_4 levels in patients ($p=0.16$). A post hoc power analysis revealed adequate sample size for RN vs PT administration group comparison. No differences were observed between pregnancy outcomes in RN vs PT administration groups. Midluteal P_4 levels did significantly differ among cycles that resulted in pregnancy ($p < 0.0001$) (both chemical and clinical), dominant follicle size ($p=0.002$), and number of follicles $>18\text{mm}$ on day of trigger ($p < 0.0001$). Ovulation rates following rhCG were greater than 95% across both groups.

Conclusions:

The rise in midluteal P_4 is not diminished by self-administration of rhCG following ovulation induction with either Clomiphene Citrate or Letrozole. Due to the frequency of office visits, balancing work and family obligations is often difficult for patients undergoing fertility treatments. Patients can be reassured of their ability to properly administer medication at home; a finding that could reduce the amount of office visits and anxiety regarding self-administration.

Support:

None