Effect of Amlodipine Treatment in Enhancing Uterine Receptivity. A Retrospective Study

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Abstract

Purpose: Increasing uterine artery blood flow was suggested to be critical for pregnancy success. Amlodipine reduces calcium ion influx across cell membranes, thereby hypothesized to help in managing the uterine blood flow. This study aimed to compare the uterine (right and left) Pulsatility Index (PI) before and after Amlodipine treatment among patients with high uterine PI at the at the first ultrasound.

Methods: This was a retrospective cohort study of 59 women who were scheduled for frozen embryo transfer (FET) while on hormone replacement treatment (HRT). Clinical data and ultrasound measurements were retrieved from hospital records (2018 – 2023). The PI was measured before (1st ultrasound) and after (2nd ultrasound) Amlodipine treatment. Following the 2nd ultrasound, the patients were then separated into two groups: normalized uterine PI group and persistent pathological uterine PI groups. PIs were compared among groups and the effect of Amlodipine treatment was assessed.

Results: Out of 59 patients, comparison of ultrasound records on left, right, and average uterine PIs showed significant decrease in all these parameters in 2nd ultrasound than 1st ultrasound (p value < 0.001). Majority of patients (84.75%, $n = 50$) achieved PI normalization of uterine PI via amlodipine treatment.

Conclusion: Amlodipine administration significantly helped in reducing left, right, and average uterine PI, reaching normalization among majority the of patients. This highlights the capability of Amlodipine administration in managing pathological PI which consequently contributes to enhancement of uterine receptivity.

Keywords

Amlodipine, Embryo transfer, Pulsatility index, Uterine artery.