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Vascularization and endometrial volume changes after intrauterine treatment with G-CSF in recurrent implantation failure.

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Introduction: Until now, we know that G-CSF is an important factor in implantation, which can be useful in patients with a thin endometrium. After the hopeful results of obtained intrauterine G-CSF, we want to know the changes it produces in the endometrium that can justify the implantation of embryos

Methods: A prospective study of 9 patients was carried out between February and December 2012. All of the patients were diagnosed with recurrent implantation failure after at least 4 good quality embryos transferred in egg donations treatments. We performed two intrauterine infusions; the first 5 days before transfer (the day of egg retrieval) and the second 3 days before transfer. We perform a 3D capture these two days; before the first infusion and after these first infusion. We compared the results obtained between the gestational group and non-gestational group. After the 3D capture of the endometrial area, we obtained the following measures through VOCAL and angiopower Doppler: Volume; vascularization index, flow index and vascularization-flow index in endometrial and sub-endometrial zone.

Results We obtained a 33.34% success rate and 11.12% miscarriage rate. After comparing the vascularization index and endometrial volume, we noted that in all of the cases the endometrial volume was increased after intrauterine G-CSF (mean difference: 0.32 ml; SE 0.11 ml). Endometrial volume is higher in the gestational group (mean difference: 2.74 ml; SE: 1.31 ml). We observed that when we compare the gestational group and non-gestational group after the G-CSF infusion, the sub-endometrial parameters are higher in the gestational group, while the endometrial parameters are lower.

Discussion / Conclusion: We believe that the G-CSF infusion could be useful in patients with a thin endometrium and sub-endometrial vascularization defects as cause of recurrent implantation failure.