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Keyword 1: Bone marrow derived stem cell ovarian auto-transplantation
Keyword 2: Pregnancy
Keyword 3: Ovarian rejuvenation

1. Abstract Categories: 11.3. Ovarian Biology, Reproductive Aging

2. Previously Presented:
Has this abstract been previously presented as it is written? No
Has this abstract been partially presented? No
Presentation Date:
Where was this abstract presented:

3. Data Requirement Questions

My submitted abstract(s) contains original data, written in standard scientific form, complete with numeric values and statistical analyses when appropriate: Yes

If my abstract contains microarray data, all analyses must be accompanied by confirmation of expression changes with either transcript or protein data: Not Applicable

All data derived using the same paradigm (set of patients or experiments) will not be separated into multiple abstracts: Yes

I understand that failure to comply with said requirements will result in abstract dismissal: Yes

4. I will comply with the SRI Abstract Withdrawal Policy: Yes

Title: Two Live Birth After Stem Cell Ovarian Auto-Transplantation In PR Women.

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Valencia, Spain; [4]Radiology, Hospital La Fe, Valencia, Spain; [5]OB/GYN, IVI Valencia, Valencia, Spain and [6]OB/GYN, IVI Roma, Roma, Italy.

Introduction: Advanced maternal age is the main cause of infertility nowadays; in fact both oocyte quantity and quality are seriously impaired in aged patients. These women are known as poor responders (PR) to controlled ovarian stimulation (COS) and oocyte donation is their only realistic option. Previous studies suggest regenerative effects of bone marrow transplant in ovarian niche of damaged ovaries and raise the possibility that dormant follicles or somatic cells may benefit from the influence of BM-derived cells or soluble factors.
Objective: To assess bone marrow derived stem cell ovarian autologous transplantation (SCOT) competence to optimize ovarian reserve in PR.

Methods: A prospective pilot study with 12 PR women (Age:38yr[37-39] with 4yr[3-5] infertility) was developed at Hospital La Fe(NCT02240342). Patients were considered as their own control as cellswere injected in just one ovary. BM-derived stem cells were mobilized to peripheral blood with G-CSF and isolated by aphaeresis. A volume of aphaeresis containing $50x10^6$ non-selected CD133+ cells was delivered into one utero-ovarian artery by catheterism. Serum AMH and AFC were monitored up to 5 months and compared to basal levels. COS was induced when AFC rose following standard procedures.

Results: Ovarian reserve markers improved in 67% of the PR patients and 42% increased both AFC (≥3foll) and AMH (>2SD). Higher AFCs were seen 15-21 days after SCOT as compared to the basal AFCs($p=0.04$).
Two of the recruited patients *were withdrawn from the study after SCOT*. A total of 30 COS were initiated in 10 patients, starting 80 [32,141] days after SCOT (20% cancellation). Oocyte pick-up was successfully performed in 76.6% initiated COS and 3.4% were empty-follicles. A total of 49MII and 28 embryos were obtained. Eighteen embryos underwent CGH analysis, 2 of them were euploid and therefore transferred in single ET. A total of 3 pregnancies were achieved (2 after ET and one spontaneous) during the follow-up period and 2 healthy babies have been born (1 miscarriage).

Conclusions:
SCOT improved ovarian function and oocyte quantity allowing pregnancy in PR women whose only clinical option was oocyte donation.

Survey

1. **How long have you been a member of the society?** I am not a member
2. **Please tell us what kind of society membership you currently hold** In-Training member
3. **What is your primary reason for joining the SRI?**
   Research Program: Yes
   Mentoring:
   Networking:
   To present my own data:
4. **Gender?** Female
5. **Age Range** 36-45

6. **Race/Ethnicity**
   White/Caucasian: Yes
   Black/African American:
   Mexican American:
   Latin American:
   Hispanic or Latino:
   Asian American or Pacific Islander:
   Asian:
   American Indian or Alaskan Native:
   Other (please specify):
7. **Under-Represented Minority:** No
8. **Degree**
   M.D.:
   Ph.D.: Yes
   D.Phil.:
   M.Sc.:
   D.Sc.:
   BA/BS:
   Other (please specify):
9. **Career Sector:** No information available
10. **Moderating a concurrent session** No
11. **Academic Status** Postdoctoral Fellow
12. **What percent of time do you spend giving Clinical Care?** 10
13. **Department/ Division** Basic Science Department
14. **Please list your sub-specialty** Basic Reproductive Sciences
15. **How would you best represent your primary research?** Translational research