The aim of our study was to evaluate CCS results in patients suffering RPL considering maternal age, number of previous miscarriages and sperm concentration as key factors. Inclusion criteria were couples with two or more previous miscarriages, with normal karyotypes and negative infertility work-up to discard other potential causes of pregnancy loss.

Embryo biopsy was performed on day 3 and chromosomal analysis was carried out by array CGH. Single blastomeres were amplified, labelled and hybridized following the manufacturer’s instructions. BlueFuse Multi software was used for data processing (BlueGnome, Cambridge, UK). Properly developed euploid embryos were transferred on day 5.

Our group performed 631 CCS cycles in RPL patients, 240 in women ≥38 and 391 in women ≥38 years old. Implantation, pregnancy per transfer, and miscarriage rates were similar for both age groups (47.2, 58.9 and 15.1 vs. 52.9, 57.3 and 19.6, respectively comparing women 38 and ≥38 years). Significant differences were found for the percentage of abnormal embryos (68.3% vs. 84.2%, p<0.0001, respectively) that was translated into a significant decrease in the percentage of cycles with transfer in patients ≥38 years (75.0% vs. 45.5%; p<0.0001).

In the group ≥38 years, the number of previous miscarriages did not have a significant effect on clinical outcome, with a trend towards poorer implantation and pregnancy rates in patients ≥5 miscarriages, with lower incidence of abnormal embryos. When severe male factor was identified (5 mill sperm/mL), significantly higher implantation rates were observed compared to couples with higher sperm concentration (69.6 vs. 45.2; p=0.0429).