Objectives: To develop criteria for selection of patients who are good candidates for single embryo transfer. Patients were included if they had undergone at least one embryo transfer and had an implantation rate of at least 35%, with a defect-free preimplantation genetic analysis. The criteria included: a) good IVF success rate, b) cycle with the fewest embryos transferred, c) patients with two or more embryos of similar quality, d) patients who requested single embryo transfer, and e) patients with only one embryo available for transfer. When criteria were met, single embryo transfer was offered. In the absence of criteria, whether to transfer one or two embryos was left to the patient's decision. RESULTS: Of the 132 patients (mean maternal age 37.3 years) with developmentally normal embryos, 94 (71.2%) produced euploid blastocysts eligible for transfer. Following a FET with only warmed euploid blastocysts, the biochemical pregnancy rate (+ hCG) was recorded at 89% (88/99). Five patients received a second FET after failure from the first transfer. The clinical pregnancy rate for this series of patients was 77.8% (79/99). Of the 175 embryos transferred, 118 (67%) implanted (sac) and 111 (63%) are ongoing (fetal cardiac activity) or have resulted in live births. To date, 28 healthy babies have been delivered to 16 patients.

Conclusion: This SNP microarray based 24hr-AS technology has many advantages as a comprehensive chromosome screening platform, including high throughput capacity, automation, objective interpretation and thorough validation. The combination of trophectoderm biopsy, blastocyst vitrification, and SNP microarray based 24hr-AS technology, results in excellent clinical outcomes with higher implantation rates that could contribute to the practical application of single embryo transfer.