EXPERIENCE OF USING KARYOLITE-TMBOBS FOR PGT-A ON 5,258 EMBRYOS FROM 737 STARTED CYCLES

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Sivadatch Chooduang, Pawonrat Patipipat, Surapong Chowichian, Wararat Kanhakit, Sakon Petchtananon, Suthirat Chumpiya, Khwan Tangskulpakdee, Usanee Jetsawangsri, Jongjate Aojanepong, Pornwaratt Niyomrattanakit*Department of Genetics Laboratory, Jetanin Institute for Assisted Reproduction, Bangkok, Thailand*Corresponding Author: pornwaratt@jetanin.com KaryoLiteTM BACs-on-BeadsTM (KL BoBsTM) is a hybridization-based, high throughput application designed to detect chromosomal aneuploidy suitable for screening on human preimplantation embryos with enable cost management and fast turn-around time. The PGT-A technologies are increasingly being used in reproductive medicine with the aim to improve IVF outcome by identifying euploid embryo suitable for transfer. In this report, we present the PGT-A analyzed results and overall IVF outcome data of the 5,258 embryos obtained from women aged 35 – 40 years old analyzed with KL BoBsTM. Over a past three years since 2015, we have been having a positive experience of using KL BoBsTM as a routine assay for PGT-A. In terms of lab management, the advantage of KL BoBsTM is the flexible sample per run, with a result in 20 hours, allowing a cost-effective assay with up to 92 samples per run. Feasibility study and cross-platform validation were performed on 132 abnormal embryos with SNP array and NGS, and we had first introduced KL BoBsTM to the patients in March 2015. A healthy baby was born to the first patient who had KL BoBsTM-ICSI cycle in our institute same year. The overall success rate of KL BoBsTM assay was 97.6 %. Rates of euploidy and abnormalities (including whole chromosome and sub-chromosomal aneuploidy) were 45.1 % and 54.9 %, respectively. The clinical pregnancy rates and miscarriage rates were 56.9 % and 5 %, respectively. Since then, over two hundred babies have been born with no misdiagnosis reported. Test limitations and unique advantage of KL BoBsTM will be discussed.