# P-50 Comparison of Human Embryo Development in G1.2/G2.2 and G1.3/G2.3 Sequential Media

**Kang MJ[1,2], Kim SA[1,2], Sung KC[1,2], Kim HS[1,2], Oh SK[1,2], Ji BC[1], Ku SY[1,2], Suh CS[1], Kim SH[1,2], Choi YM[1,2], Kim JG[1], Moon SY[1,2]**

*[1]Department of Obstetrics & Gynecology, College of Medicine, Seoul National University,*
*[2]Institute of Reproductive Medicine and Population, Medical Research Center, Seoul National University*

**Background & Objectives:** As of last year, Vitrolife has updated their previous sequential media for embryo culture with G1 version 3 (G1.3)/G2 version 3 (G2.3). Prior to embryo transfer for IVF, we compared developmental stages and qualities of day 2, 3, 5 embryos in both commercially available media (G1.2/G2.2 and G1.3/G2.3).

**Method:** The day 2, 3, and 5 embryos were cultured in both sequential media (G1.2/G2.2 and G1.3/G2.3) and the embryos' developmental stages and qualities were assessed. 192 patients, who underwent IVF and ICSI treatment during June 2002 to July 2004, were included in this study. The results were analyzed by student's t-test and were considered to be statistically significant when p value was less than 0.05.

**Results:** Since there was the possibility that the patients' age, number of collected oocytes and pronuclear embryos could skew our data, we randomly grouped the embryos into two groups. The two groups' averages showed no significant differences. Overall, the embryos cultured in the newer version of media (G1.3/G2.3) had higher number of embryos progressing to or beyond their expected developmental stages. Day 2 embryos in G1.3 had 31.1% of the embryos at four-cell stage or beyond whereas the embryos in G1.2 had only 23.2% at that stage or beyond. Day 3 embryos (8-cell stage or beyond) in G1.3 or G1.2 were measured at 50.5% and 44.5% respectively. Significantly higher number of pronuclear embryos reached blastocyst stage by day 5 in G1.3/G2.3 (29.6%) than in G1.2/G2.2 (25.0%). All results were statistically significant with p values less than 0.05. Although a greater number of embryos was marked with the superior embryo grade (grade 1) when cultured in G1.3/G2.3 than in G1.2/G2.2 (17.2% vs. 11.3% for day 2, and 13.7% vs. 11.0% for day 3), the results were not statistically significant.

**Conclusions:** These results demonstrate that G1.3/G2.3 media is better suited than G1.2/2.2 for embryo development. We were able to verify that the updated media is an improvement for culturing human embryos in our lab and for our embryo transfer program.