ERRATUM

Non-invasive measurement of glucose and pyruvate uptake by individual human oocytes and preimplantation embryos


The abstract to the above paper was incorrectly printed. It should read as follows:

Pyruvate and glucose uptake by 73 individual human oocytes and preimplantation embryos was measured non-invasively, using an ultramicrofluorescence assay to analyse changes in substrate levels in microdroplets of culture medium. The uptake of both substrates was measured over successive daily incubations between days 1 (unfertilized oocytes) or 2 (‘spare’ embryos which were not transferred) and day 6 (day 0 = day of insemination). Under these conditions, 58% (25/43) of fertilized embryos with two pronuclei on day 1 developed to the blastocyst stage by day 6. The pyruvate uptake of these embryos increased from ~28 to a maximum of 40 pmol/embryo/h between days 2.5 and 4.5. Similarly, glucose uptake increased from ~8 to 14 pmol/embryo/h between days 2.5 and 4.5, but then increased further to 24 pmol/embryo/h on day 5 at the blastocyst stage. The pyruvate uptake of fertilized embryos which arrested at cleavage stages was significantly lower than for those which developed to the blastocyst stage. Polyspermic and parthenogenetic embryos, and unfertilized oocytes also had lower pyruvate uptakes at later stages. The glucose uptake of unfertilized oocytes and abnormal embryos never reached the level of fertilized embryos at the blastocyst stage on day 5.5. Non-invasive measurement of pyruvate uptake before embryo transfer may provide a valuable functional criterion for the selection of viable embryos capable of developing to the blastocyst stage.

Key words: human preimplantation embryo/metabolism/human IVF/LHRH agonist