50% fragmented cells, granulated cytoplasm and/or arrested cell division. More than 60% of their nuclei were fragmented or had an apoptotic appearance – from relatively dispersed joined parts to entirely separated small fragments. Some blastomeres with normal shape and size had two to four not very small nuclei with typical interphase chromatin. The total number of fluorescent signals per multinucleated blastomere varied. It is an important fundamental question whether this fragmentation is a sign of beginning apoptosis, whether the abnormal chromosomal status causes eventual apoptosis or whether this abnormal chromosomal number is a consequence of fragmentation due to other reasons (Warner et al., 1998; Antczak and Van Blerkom, 1999; Iwarsson et al., 1999; Pampfer and Donnay, 1999). It is recommended to perform biopsy of mononucleated blastomeres only (Munne et al., 1994).

Although we analysed a rather small group of embryos, our data for FISH – success and chromosomal mosaicism – are close to these in other studies. The mosaicism is the major methodology limit of preimplantation ploidy diagnosis because it introduces an inherent possibility of errors (Coonen et al., 1994; Handyside, 1996; Verlinsky et al., 1997; Evsikov and Verlinsky, 1998). Misdiagnosis or doubt diagnosis due to mosaicism could be reduced by analysing two blastomeres biopsied from an eight-cell embryo – this is the approach in the centers which report on live-born healthy children after IVF-PGD procedures (Delhanty et al., 1993; Handyside, 1996; Verlinsky et al., 1996).

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