

TO: EDITOR OF RBMONLINE

Dear Editor

We wish to add a further comment on the criticisms of PGD published in the NEJM, and the resulting comment sent by Drs Jacques Cohen and Jamie Grifo (RBMONline this issue). It does not really need any further support but it would be useful to refer to our comment that Reproductive BioMedicine Online has just accepted for publication (Kuliev and Verlinsky, 2007). We wish to add the following statement in order to clarify our own attitude to the paper in the NEJM.

We believe that, except for a few smaller series, existing experience suggests that aneuploidy testing has had a significant impact on the reproductive outcome of poor prognosis IVF patients (Gianaroli et al, 1999; 2001; Munne et al, 1999; 2003; 2006). It has been applied to over twenty thousands IVF patients in an effort to preselect those embryos with highest chances of establishing pregnancy. PGD for chromosomal disorders has indeed demonstrated the positive clinical impact through the improved implantation and pregnancy rates, reduction of spontaneous abortions and improved take home baby rate in poor prognosis patients, including those of advanced reproductive age, repeated IVF failures and recurrent spontaneous abortions.

The lack of positive effect of aneuploidy testing in two smaller studies (Staessen et al, 2004; Platteau et al, 2005) may be due to potential detrimental effect of two blastomere removal, which definitely reduces the implantation potential of the biopsied embryos to the extent that could not be bridged even by the preselection of aneuploidy free embryos (Cohen et al, 2007). Without taking into consideration these technical details, the data could have been misinterpreted as the lack on PGD impact of the pregnancy outcome, although they may have actually suggested the beneficial effect of preselection of aneuploidy-free embryos, in terms of compensating a detrimental effect of two cell biopsy.

In the other more recent report that failed to detect the positive effect, despite single blastomere biopsy, the authors excluded from testing a few key chromosomes, and also were facing the overall very poor outcome of aneuploidy testing with as much as 20% failed results, that have affected the appropriate pre-selection of embryos for transfer from only 4.8 embryos, on the average, available for testing (Mastenbroek et al, 2007).

Although further randomized controlled studies will still be required to quantify in more detail the clinical impact of the pre-selection of aneuploidy free zygotes for embryo transfer, the positive impact of PGD is particularly obvious from the comparison of reproductive outcome in the same patients with and without PGD (Gianaroli et al, 2004; Verlinsky et al, 2005). Implantation, spontaneous abortions and take home baby rates were analyzed before and after PGD, which appeared to be significantly improved after PGD. For example, implantation rate prior to PGD was only 7.2 %, in contrast to 34.8% after PGD, suggesting an almost five-fold improvement. As expected, there was also significant reduction of spontaneous abortion rate, which was 72% before and 26.9% after PGD. Accordingly this contributed to the more than two-fold increase of take home baby rate after PGD, which was as high as 65.7% in PGD cycles compared to 27.9% without PGD.

We hope that the above comments are useful in revealing the actual benefits of PGD.

Anver Kuliev & Yury Verlinsky

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