

Original Article

Selected single blastocyst transfers maintained pregnancy outcome and eliminated multiple pregnancies

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Background: Transfer of more than one embryo following *in vitro* fertilization/intracytoplasmic sperm injection cycles have increased pregnancy rate at the cost of increasing the incidence of triplets and twins. It has been proposed that prolonged culture to the blastocyst stage would automatically result in the selection of good quality embryos for transfer and minimize the incidence of triplets and twins.

Methods and Results: The objectives of the present retrospective analysis were to examine the pregnancy outcome, multiple pregnancy and related data following: (i) single blastocyst transfer (BT) and double BT; (ii) single BT in patients belonging to different age groups; and (iii) good, fair or poor quality of BT. A total of 260 BT were carried out between August 1998 and July 2002 and they are included in the current study. Sixty of the 260 BT patients received a single BT, and 41 of them

received selected single good quality BT (SSBT). The implantation rate has no significant difference between following single BT (53.3%) and double BT (42.8%). No multiple pregnancy occurred following single BT, while significantly higher ($P < 0.05$) multiple pregnancy rate was observed following a double BT (45.8%). The clinical pregnancy and implantation rates following a single BT were similar ($P > 0.05$) in patients belonging to <30 years (62.5%), 30–34 years (57.9%) and 35–39 years old (35.8%).

Conclusion: Selected single good quality BT maintained pregnancy and avoided multiple pregnancies. It is recommended for patients with a risk for high-order multiple pregnancy. (Reprod Med Biol 2004; 3: 13–18)

Key words: blastocyst transfer, cleavage transfer, multiple pregnancy, selected single blastocyst transfer.

INTRODUCTION

TO OVERCOME LOW pregnancy and implantation rate from *in vitro* fertilization (IVF) and intracytoplasmic sperm injection (ICSI) cycles, fertility specialists have developed efficient ovarian stimulation protocols and laboratory techniques with the goal of obtaining multiple embryos for transfer. Pregnancy rate rose with transfer of multiple embryos; however, it also increased the incidence of multiple births, including twins, carrying extra risks of obstetric, and pre- and perinatal complications.¹ To minimize the risk of multiple pregnancy, many IVF clinics have reduced the number of embryos transferred from three to two embryos per transfer.^{2,3} However, research reports show that transferring two or

three embryos yielded similar results, reducing only the incidence of triplets but not twins, resulting again in increased health-care cost.^{4–6} In many clinics, more than three embryos are still transferred. This has led to the practice of embryo reduction in pregnancies with three or more fetuses. Embryo reduction still carries 10% risk of miscarriage even when carried out by experienced clinicians.⁷ It is extremely mentally stressful for the couples and many regard it as ethically problematic. Embryo reduction can be completely avoided by transferring only one embryo per transfer.

Early reports showed a low pregnancy rate after a single embryo transfer.^{8,9} These results originated from transfers with only one embryo available for transfer. Recently, the transfer of single selected day 2 or 3 embryos has been shown to result in acceptable pregnancy rate eliminating the risk of multiple pregnancy at birth.^{10,11} Identification of day 2 or 3 embryos with a very high implantation potential is critical for single embryo transfer and morphological characteristics at

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