

PATIENTS' PREFERENCE FOR NUMBER OF EMBRYOS TRANSFERRED DURING IVF/ICSI: A NIGERIAN EXPERIENCE

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ABSTRACT

Background: The Human Fertilization and Embryology Authority is considering limiting the number of embryos that can be transferred to single embryo per cycle as has been done in several European countries, with the aim of reducing the rate of multiple pregnancies and its attendant complications following in vitro fertilization (IVF) / Intracytoplasmic sperm injection (ICSI).

Objective: To determine the number of embryos patients' attending a fertility clinic in Nigeria, would prefer transferred during IVF/ICSI.

Materials and Methods: Fifty four consecutive female patients who underwent IVF/ICSI procedures between May 2006 and April 2007 at the Port Harcourt Fertility Centre, Rivers State were interviewed using structured questionnaires. They were informed of all the obstetric and perinatal complications of multiple pregnancies and the advantages and trend towards single embryo transfer and then asked to choose the number of embryos (one, two or three) they would prefer transferred assuming similar implantation rates. Each respondent was allowed to give reason(s) for their choice.

Design: Prospective, descriptive study.

Results: Fifty one (94.4%) of the respondents preferred the transfer of multiple (2 or 3) embryos. Only three (5.6%) patients opted for single embryo transfer. Majority of the patients (31 or 60.8%) preferred multiple embryo transfer because of their desire for twins while twenty (39.2%) cited cost of IVF as their reason. Fifteen (29.4%) patients saw multiple pregnancies as a compensation for their long periods of infertility.

Conclusion: With the desire for twins and high poverty level in Nigeria, a policy of single embryo transfer might be difficult to implement. Health economic studies would be required to determine if the accumulative cost of taking care of twins/triplets is less, equal or outweighs the cost of several single embryo transfers.

Key Words: Single, multiple, embryo transfer, IVF/ICSI

(Accepted 4 August 2009)

INTRODUCTION

Although Louis Brown was born to a natural cycle,¹ it was soon realized that the conception rate could be improved if more than one embryo was replaced in the uterus.² This however was associated with multiple pregnancies which in turn led to early pregnancy losses. For this reason, most centres restricted the number of embryos transferred to two or three.³ Despite this, a large scale Swedish retrospective cohort study reported a 20 fold increased risk of multiple pregnancy following Assisted Reproductive Technology (ART) compared with the general population.⁴ In the same vein, a world collaborative report on in vitro fertilization recorded a multiple birth rate of 29%, the majority of which were twins.⁵

It is an established fact that multiple gestation is associated with increased risk of preterm delivery;

low birth weight; congenital malformations; fetal and infant deaths and long term morbidity and mortality as survivors.⁶ Added to these are the obstetric complications which include pregnancy induced hypertension, polyhydramnios, placenta praevia, risk of operative delivery to mention but a few.⁷ Irrespective of the day of transfer, transferring two or three embryos yield similar results reducing only the incidence of triplets but not of twins.^{8,9} Also recent studies suggest that there is no statistically significant difference in pregnancy rate following single or double embryo transfer.^{10,11} Based on the above findings, an expert panel commissioned by the Human Fertilisation and Embryology Authority (HFEA) issued a report recommending that new guidelines should be introduced to limit the number of embryos which can be implanted in IVF cycles. The HFEA is therefore considering limiting transfers to single embryo per cycle as has been done in several European countries.¹²

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Nigeria, it is known has the highest twinning rate in the world with the Yorubas in south west Nigeria having rates as high as 50 per 1,000 maternities.¹³ Rehan and Tafida¹⁴ found a twinning rate of 39.7 per 1,000 births while Aisien et al¹⁵ recorded 28 per 1,000 births in Northcentral Nigeria. Indeed bearing twins in Nigeria is usually a thing of joy which comes often times with support from family members and the community.

It therefore becomes relevant to ask what the choice of this particular group of people would be, in terms of number of embryos to be transferred during IVF, if they were aware of the plethora of complications associated with multiple pregnancies, before embarking on an IVF programme.

MATERIALS AND METHODS

Fifty four consecutive female patients who underwent IVF/ICSI procedures between April 2006 and May 2007 at the Port Harcourt Fertility Centre, Rivers state were interviewed using structured questionnaires. They were informed of all the obstetric and perinatal complications of multiple pregnancies and the advantages and trend towards single embryo transfer and then asked to choose the number of embryos (one, two or three) they would prefer transferred assuming similar implantation rates. Each respondent was allowed to give reason(s) for their choice.

RESULTS

Table 1 shows the number of embryos preferred in relation to age. Majority of the patients were aged between 36 and 40 years. Fifty one (94.4%) of the respondents preferred the transfer of multiple (2 or 3) embryos. Majority of the patients, 36 or 66.6% preferred the transfer of 2 embryos. Only three (5.6%) patients opted for single embryo transfer. Figure 1 shows the reasons given by the respondents for choosing multiple embryos for transfer. While some of the respondents had more than one reason for their choices, majority of the patients (31 or 60.8%) preferred multiple embryo transfer because of their desire for twins. Twenty (39.2%) patients cited cost of IVF as their reason. Fifteen (29.4%) patients saw multiple pregnancies as a compensation for their long periods of infertility.

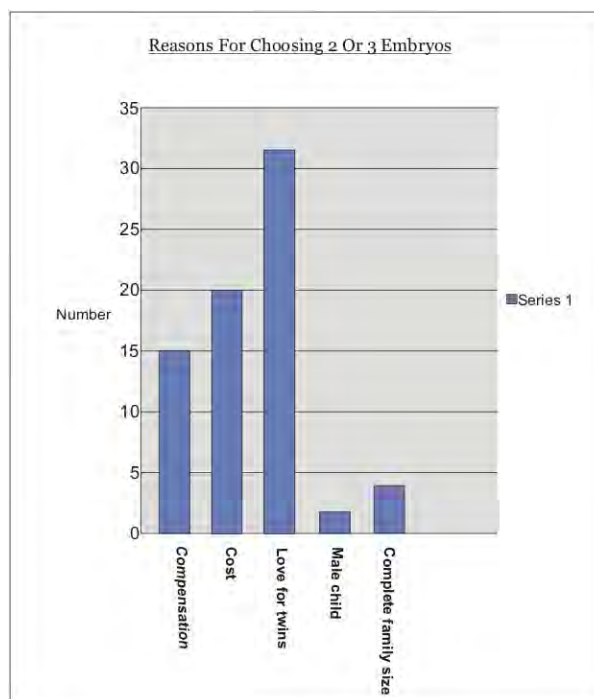
Four (7.8%) patients felt having twins or triplets would help them complete their family size. Two (3.9%) patients wanted multiple embryos transferred because they felt that would increase their chances of having a male child.

Duration of infertility ranged between 1 - 16 years (6.1 ± 3.99). Two patients had previous IVF treatment.

Table 1: Number of Embryos Preferred in Relation to Age.

Age (yrs)	Embryos Preferred		
	1 n (%)	2 n (%)	3 n (%)
21 – 25	0 (0)	2 (100)	0 (0)
26 – 30	1 (7.1)	11 (78.6)	2 (14.3)
31 – 35	0 (0)	11 (78.6)	3 (21.4)
36 – 40	2 (11.8)	9 (52.9)	6 (35.3)
>40	0 (0)	3 (42.9)	4 (57.1)
Total	3 (5.6)	36 (66.6)	15 (27.8)

Figure 1:



DISCUSSION

From the results, it can be seen that majority of the patients (51 or 94.4%) would rather have two or three embryos transferred despite the barrage of complications that could arise as a result of multiple gestation. Only 3 patients as shown in Table 1, representing 5.6% of the study population opted for one embryo transfer. Blennborn et al¹⁶ in 2005 had also shown that despite good information about the risk of complications with multiple pregnancy, many of the patients still preferred to have two rather than one embryo transferred.

This is in sharp contrast with the study by Neubourg et al¹⁷ in which patients below 38 years were given the option to choose between one or two embryos for transfer during IVF. Majority of the patients (156 or 64%) chose the transfer of a single top quality embryo if available and two non top quality embryos if not available, while 87 (36%) chose to have a double embryo transfer regardless of embryo quality.

In another prospective cohort study, 183 good prognosis patients were given the choice to receive either two or three embryos. Eighty (43.7%) agreed to have double embryo transfer while 103 (56.3%) preferred three embryos.⁸

Cost is probably a major factor in determining patients' choice of the number of embryos to be transferred. In this study, 39.2% of the respondents cited cost as a contributory factor in making a decision. In Nigeria, the average cost of a single IVF cycle is ₦400,000 - ₦900,000 (\$3,000 - \$7,000), (personal communication). While this might appear small compared to the several thousands of dollars paid for similar cycles in industrialized countries, it is still not within the reach of the average Nigerian where over 70% of the population still live below the poverty line.¹⁸

It could be argued that the accumulative cost of taking care of twins/triplets might outweigh or equal the cost of several single embryo transfers (SET) in the final analysis. However, health economic studies would need to be performed to resolve this. It was interesting to note that of the three patients who chose SET, one was a 28 year old full time housewife married in a polygamous setting of five wives and eighteen children to a full time politician. She cited the problem of coping with twins as her reason. The other two were both 38 years of age. While one had previous successful IVF treatment with twins (both females) and now wanted a male child to complete her family size, the other though nulliparous was worried about the possible complications of multiple pregnancy. The desire for multiple pregnancy especially twins by the average Nigerian patient was aptly captured in this study as majority of the patients (66.6%) preferred the transfer of 2 embryos. The desire for twins was the commonest reason for the choice of multiple embryos. Fifteen (29.4%) patients preferred more than one embryo because they viewed this as a compensation for their long periods of infertility.

In Nigeria as is obtainable in most countries in subSaharan Africa, there is no state regulation of ART.¹⁹ ART practitioners in the subregion voluntarily adhere to guidelines set by the American Society of Reproductive Medicine, the British HFEA or the equivalent body in France or Germany.¹⁹ However unlike in some of these countries (especially the Scandinavian countries) where majority of the cost of ART is covered by the public sector, the Nigerian patient bears the total cost of ART treatment. This coupled with the poverty level and a desire for twins as shown in this study might make a policy of SET difficult to implement in our practice, although the final decision on the number of embryos to be transferred must always be made in agreement between the

patient and the physician.

In conclusion, patients' desire or interest must be considered in ART, particularly in the era of patient centred IVF programme. Should a centre choose to embark on SET, blastocyst culture should be introduced as a necessary first step to improve implantation.²⁰

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