

Commentary

Concerns regarding the follow-up of children conceived after assisted reproduction in Latin America

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Abstract

Children born through assisted reproduction are not usually followed up in Latin America. However, in spite of all the social-economic and cultural complexity of this part of the world, professionals involved in assisted reproduction should not relinquish the responsibility of following up these children. In May 2002, the Centre for Human Reproduction Sinhá Junqueira, started a specific project for evaluation and follow-up of its children. It is the first centre in Brazil, and probably in Latin America, with this aim, and this paper reports initial results concerning the intellectual development of these children.

Keywords: assisted reproduction, children, follow-up, intellectual development

The Latin American Network of Assisted Reproduction, comprising 120 clinics from 11 countries (Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, Guatemala, Mexico, Peru, Uruguay and Venezuela), in 2001 reported a total of 18,598 cycles applying artificial reproduction technologies in an estimated population of 460 million habitants (Registro Latinoamericano de Reproducción Asistida, 2001); this equates to approximately 40 cycles per million inhabitants in Latin America. These data are 20 times lower than the numbers found in Europe, even considering that not all Latin American Reproduction Centres (even from the mentioned countries) send their data to the Latin American Network. Various hypotheses may be advanced to explain this reduced number of cycles, but the social-economical conditions of the region are likely to have a fundamental influence.

Unfortunately, the low number of cycles is not the only problem. Children born through assisted reproduction are not generally followed up in Latin America in a systematic way. Only sporadic evaluations, for example the presence or absence of malformations at birth, have been carried out, and even then in only 28.3% of children born through assisted reproduction in the year 2001 (according to the Registro Latinoamericano de Reproducción Asistida, 2001).

In May 2002, the Centre for Human Reproduction Sinhá Junqueira started a specific programme for evaluation and follow-up of its children (NADI: Nucleus of Children Development Follow-up), the first centre in Brazil and probably in Latin America with this aim. Despite all the difficulties due to the continental extension of Brazilian territory (The Centre cares for patients from the whole of Brazil, a country covering 8.5

million km² in territory), up to the present time (April 2004) it has been possible to catalogue more than 450 children from a cohort of approximately 3000 children born after the use of assisted reproduction techniques in the Centre.

Since the beginning, the NADI, as all similar centres, has attempted to register and analyse all the traditional variables: congenital malformations, growth and development, chromosome and epigenetic anomalies. However, to provide accurate answers to questions of safety in assisted reproduction procedures, the data obtained should be confirmed through comparisons with similar papers or the observation of larger samples. These can generally be obtained from large multicentre studies, allowing low frequency or more subtle differences to appear.

Among several points analysed, the intellectual development of these children has been particularly highlighted. In the literature, there are few controlled studies on this issue, and usually they report conflicting results (Cederblad *et al.*, 1996; Bonduelle *et al.*, 1998; Bowen *et al.*, 1998; te Velde *et al.*, 1998; Sutcliffe *et al.*, 1999; Leslie *et al.*, 2003; Place and Englert, 2003).

The intelligence quotient (IQ) of a cohort of 60 children aged ≥ 6 years (33 boys and 27 girls) was analysed using the Wechsler Intelligence Scale for Children (WISC-III, adapted to Brazilian children), and compared the results with those found in the Brazilian control population. At the time of the test, the mean age of the children was 7.8 ± 1.8 years (range 6–12). In the evaluation, 19 children (31.7%) had test results over the mean ($IQ \geq 120$) and only one child (1.7%) was under

Table 1. Results of IQ in a Brazilian children population conceived by assisted reproduction.

<i>Full scale IQ</i>	n	% population studied	% Brazilian population (control) ^a	ICSI	IVF	Artificial insemination	Oocyte implantation
Very superior ≥130	12	20.0	2.2	8	2	–	2
Superior 120–129	7	11.7	6.7	1	2	1	3
High average 110–119	8	13.3	16.1	3	3	1	1
Average 90–109	27	45	50	10	12	4	1
Low average 80–89	5	8.3	16.1	2	2	1	–
Borderline 70–79	1	1.7	6.7	1	–	–	–
Mentally impaired ≤69	0	–	2.2	–	–	–	–
Total	60	100	100	25	21	7	7

^aThe Wechsler Intelligence Scale for Children (WISC-III), São Paulo, Brazil.

the mean (IQ < 80) for full scale IQ (FSIQ). For this comparison, children with 'mean' IQ have FSIQ ratings in the average range 80–119. The data are shown in **Table 1**.

It will be necessary to control the bias and to extend the size of the sample for a definitive conclusion. However, the results are encouraging in that no children were mentally impaired and a number had higher than expected IQs. Support for these observations was found in papers reporting similar results (Bonduelle *et al.*, 1998; Sutcliffe *et al.*, 1999; Leslie *et al.*, 2003; Place and Englert, 2003). However, the present evaluation represents a further step, as the age range was higher than in the other studies.

This study is just a sample. The fundamental question is to understand the importance and to create, in each service, conditions to follow up children. The results obtained, compatible with those reputed by other services or produced in collaborative studies (among different centres of a country or of different countries), will provide consistent data to help in understanding the consequences of assisted reproduction techniques in a fundamental way, and to provide reassurance to parents about the development of their children.

Finally, in Latin America, despite all the social, economic and cultural complexity, professionals involved in assisted reproduction should not relinquish their responsibility to follow up children conceived in this way.

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