Abstract

Background: This 21st report represents the results of ART procedures performed during 2010 by 140 centers from 13 countries in Latin America. Furthermore, this is the first time, a multinational registry is performed on a case-by-case bases. Methods: All centers reported their ART procedures electronically and their data was accepted after consistency checks were performed and the institution, certified by an accreditation team. A total of 37,853 initiated ART cycles included 3,731 IVF cycles; 22,637 ICSI cycles; 5,157 FET and 6,320 OD embryo transfers, plus 8 cases of GIFT, which are not described in this report. Results: The majority (39%) of ET in IVF/ICSI cycles were performed in women age 35-39 years. The delivery rate (DR) per OPU in ICSI and IVF cycles were 28.8% and 30.9%, respectively. The multiple delivery rates in IVF/ICSI cycles were 23.9% (22.1% twins and 1.8% triples). When ≥ 2 embryos were transferred, neither the CPR nor the proportion of twins increased significantly. However, the proportion of triplet increased significantly when ≥3 embryos were transferred. In OD cycles, twin and triplet deliveries were 25.4% and 2.2%, respectively. In FET cycles, twin and triplet deliveries were 17.6% and 1.5%, respectively. Multiple deliveries were associated with a significant increase in preterm delivery and perinatal mortality. The CPR was 18% with eSET and 43% with eDET. In women aged ≤34 years, CPR with eSET was 30% and 52% with eDET. In OD cycles, the CPR with eSET was 29%, and 52% with eDET. Conclusions: Overall, delivery rates are comparable to most developed countries in the world. However, REDLARA has to enforce the reduction in the number of embryos transferred in IVF/ICSI and OD cycles, in order to prevent multiple births and decrease the corresponding perinatal complications.
INTRODUCTION

This report corresponds to the twenty first edition of the Latin American Registry of Assisted Reproductive Technology (RLA). Reports from 1990 through 1998 are available as printed copies; from 1999 through 2009 are available as PDF files to be downloaded from the web page of Red Latino Americana de Reproducción Asistida (REDLARA) at www.redlara.com.

The main objectives of RLA include: to register the number and characteristics of assisted reproductive techniques (ART) procedures performed in Latin America (LA); to register their outcomes, including controlled ovarian hyperstimulation, pregnancies and perinatal outcomes; to register the complications associated with ART procedures and the frequency and characteristics of congenital malformations; and to evaluate trends in multiple pregnancy and delivery, preterm birth, perinatal mortality and others.

MATERIAL AND METHODS

Data collection

One hundred and forty centers from thirteen countries reported data involving ART procedures performed from January to December 2010. ART procedures included in vitro fertilization (IVF), intracytoplasmic sperm injection (ICSI), gamete intrafallopian transfer and similar techniques (GIFT), oocyte donation (OD), frozen/thawed embryo transfer (FET), prenatal genetic diagnosis and screening (PGD), and assisted hatching (AH).

The main methodological characteristic of the current report is that for the first time the data of each treatment cycle was recorded independently, instead of a summary of cases, as it was reported until now, thus, this is the first multinational case by case registry. This way of collecting data has two main advantages. First, it reduced the work of those responsible for reporting data from each center, and second, a case-by-case multinational register, allows for more sophisticated biostatistics and epidemiological analysis.

As in the past, each center provided their data on voluntary bases. Furthermore, before the data is accepted, each center has to undergo periodical accreditation visits, where a clinician and an embryologist from a different country, evaluate the professionals, the infrastructure and equipment of the center, together with their quality control programs and their consent forms. Furthermore, the data provided by the center to the RLA is carefully and thoroughly analyzed.

Each center has an individual password in order to access the RLA-server, where the center can upload the data of each cycle. The data can be uploaded either by filling a specially designed page each time a new case is performed, or by uploading an Excel file whenever possible.

The central office of RLA gains immediately access to the data, and checks for inconsistencies and resolve any further question with the center.

Data validation

The data provided by each centers is checked for inconsistency by the program; and any error is discussed with the center, and the data is rectified if necessary. The truthfulness of the data reported by each institution is checked as part of the periodic accreditation process conducted by a biologist and a clinician from different countries.

Limitations of data collection

Some centers do not have complete follow-up of each pregnancy. This is especially so in institutions not associated with obstetric units. Our calculations are that missing data is in the order of 5% of pregnancies.
From a different perspective, not all centers performing ART belong to REDLARA. We estimate that the RLA registers more than 80% of ART procedures performed in Latin America.

**Statistical analysis**
Chi square test was used to analyze independence of categorical variables. When multiple variable analyses were performed, i.e. logistic regression or lineal regression, the dependent variables were considered significant if the confidence interval of the odd ratio (OR), or regression coefficient did not cross the non-significant value. A p-value <0.05 was considered as statistically significant. When comparing two outcomes, the risk ratio (RR), and its corresponding 95% confidence interval (95%CI) are presented.

**RESULTS**

**Participating centers**
One hundred and forty (140) centers belonging to 13 countries reported their ART procedures performed during 2010 (Annex I). These represent five more centers than those reporting in 2009. The new institutions belong to Argentina, Brazil, Ecuador and Mexico.

**Size of participating institutions**
The number of initiated cycles corresponds to the sum of initiated cycles of IVF/ICSI/GIFT, and embryo transfers, both FET and OD. The average number of initiated cycles registered by the clinics was 268. More than half of the centers registered less than 150 cycles, whereas only three centers registered more than one thousand cycles. The distribution of the clinics according to the number of cycles registered is as follows: 27%, ≤ 100 cycles; 36% between 100 and 250 cycles; 24% between 251 and 500 cycles; 11% between 500 and 1,000 cycles; and only 2%, ≥ 1,000 cycles.

**ART procedure and access**
The total number of ART procedures registered by the RLA was 37,853. Of these, 47% (n=17,673) were reported by Brazil; 22% (n=8,336) by Argentina; and 12% (n=4,433) by Mexico (table 1).

Out of 26,3736 initiated autologous-cycles, 3,731 (14%) corresponded to IVF, and 22,637 (86%) to ICSI cycles. One hundred and twenty six clinics registered 5,157 FET cycles. And one 127 clinics reported 6,320 OD cycles. In 56% of these cycles, the eggs were donated from pure donors, i.e. women that underwent controlled ovarian hyperstimulation (COS) and oocyte pick up with the only purpose of donating their oocytes; and 44% were egg-sharing, i.e. patients undergoing COS and oocyte pick-up, for an autologous treatment and simultaneously donated a proportion of their gametes.

Table 1 also shows access to ART procedures in LA, expressed as the total number of initiated cycles per million women aged 15 to 45 years.

**Pregnancies and deliveries**
Tables 2a and 2b show the clinical pregnancy rate (CPR) and delivery rate (DR) of ART procedures performed in 2010. In the case of ICSI cycles, the overall CPR and DR per oocyte pick-up were 28.8% and 22.1%, respectively. These rates were marginally better in the case of IVF cycles: 30.97% and 25.63%, respectively (table 2a) In both instances, the difference reached statistical significance, however the lack of random distribution of subject in each treatment category, does not allow for conclusions to be obtained. The RR for clinical pregnancy per OPU was 1.07 (95% CI 1.01-1.13); and for delivery rate per OPU was 1.10 (95% CI 1.03-1.17).
In OD cycles, the clinical pregnancy rate and delivery rate were 47.0% and 38.6%, respectively. In FET cycles, the clinical pregnancy rate and delivery rate were 29.3% and 22.5%, respectively. These rates were higher in FET with OD: 32.4% and 24.7%, respectively (table 2b).

**Age of women undergoing ART procedures**
The mean age of women undergoing IVF/ICSI/GIFT was 36 years (SD 4.7). Figure 1 shows the age distribution of women undergoing IVF/ICSI/GIFT. 37% of initiated cycles were in women aged ≤34 years; 39% in women aged 35 through 39 years; 16% in women aged 40 through 42 years; and 7% in women aged ≥43 years. This accounts for 23% of women ≥40 years.

As expected, the delivery rate per embryo transfer was significantly influenced by the age of the female partner. We analyzed DR/ET in the following age categories: women aged ≤34 years; women aged 35 through 39 years; women aged 40 through 42 years; and women aged ≥43 years. DR decreased in all age groups, from 35.5% in the younger women to 8.5% in the oldest group (p<0.001). The eldest women that deliver a baby with autologous oocytes was 49 years at the time of the procedure (Fig. 2a and 2b).

In cases of OD, DR/ET in oocyte recipients aged ≤34 years (n=523 ET) was 40.2%. In women aged 35 through 42 (n=2,155 ET), was 40.0%; and 37.1% (ET=2672), in women ≥43 years. These differences did not reach mathematical significance.

In cases of FET with OD, women aged ≤34 years had a delivery rate per ET of 28.8%; compared with 23.8% in women aged 35 to 39, and 22.4% in women ≥43 years (p=0.321).

**Number of embryos transferred and multiple deliveries**

Table 3 shows the outcome of 21,526 IVF/ICSI embryo transfers. The mean number of embryos transferred was 2.4, identical to the previous report. In 45.2% of cases, two embryos were transferred, and the transfer of 3 and ≥4 embryos represented 34.6% and 7.2% respectively. The overall frequency of multiple delivery was 23.9%, of which, 22.1% were twins and 1.8% triplets and higher, compared with 21.5% and 2.1% respectively in 2009.

The risk of twin delivery increased with the transfer of ≥2 embryos. The risk of twin deliveries was 21.8% when two embryos were transferred, and the transfer of three embryos increased the risk to 1.1 (95%CI 1.0-1.3). The transfer of ≥ four embryos also increased the risk to 1.1 (95% CI 0.9-1.3). The risk of triplet-and-higher delivery also increased significantly with the number of embryos transferred.

When only one embryo was transferred, there were no triplets or higher order deliveries; when two embryos were transferred the rate of triplets-and-higher delivery was 0.5%; when three embryos were transferred, the rate of triplets-and-higher delivery increased to 3.3%; with a further increase to 3.9% (p<0.001), when ≥ 4 embryos were transferred.

**Heterologous reproduction (OD)**

Table 4 shows the outcome of 4,763 OD cycles. The mean number of embryos transferred was 2.4, identical to the previous report. In the majority of cases, two embryos were transferred (58%), and the transfer of ≥3-embryos represented 38% of the cases. The overall frequency of multiple birth was 27.6%; 25.4% were twin delivery, and 2.2% triplets and higher, compared with 23% and 2% respectively in 2009.

When compared with the transfer of two embryos, the transfer of three or four embryos increased the
relative risk for twins by 1.2 (95%CI 1.00-1.40); and by 1.1 (95%CI 0.8-1.6) respectively.

However, the risk of triplet and higher order delivery increased significantly with the transfer of more than two embryos. The rate of triplets increased from nil when one embryo was transferred to 0.5%, 4.8% y 6.8% (p<0.001), when 2, 3 and ≥4 embryos were transferred.

**Frozen/thawed embryo transfers (FET)**

Table 5 shows 5,157 cases of FET. The mean number of embryos transferred was also 2.4. Two embryos were transferred in 46% of cases. The rate of multiple births was 19.5%; 17.6% were twin delivery (13.1% in 2009); and 1.5% triplets-and-higher delivery (2.7% in 2009). The increase in the rate of multiple-delivery was less profound than in the previous techniques. The rate of triplets-and-higher delivery when one, two, three and ≥four embryos were transferred was 0.0%, 1.3%, 1.9% and 2.3% respectively (p<0.001).

Table 6 shows 1,557 cases of FET with donated oocytes. The mean number of embryos transferred was 2.4. Multiple-delivery rate was 23.2%: 21.8% twins and 1.4% triplets. The risk of multiple-pregnancy also increased with the number of transferred embryos, however, this was less accentuated than in the case of fresh transfers (p=0.557).

**Elective singe and dual embryo transfer (eSET & eDET)**

Elective single embryo transfer (eSET) and elective dual embryo transfer (eDET) accounted for 3.8% (n=810) and 23.6% (n=5,081) respectively, of embryo transfers performed in 2010. This represents an important increase to the previous register, when they represented only 1.0% and 14.2% respectively.

The CPR/ET was 18% with eSET and 43% with eDET. Elective SET and DET had higher CPR than non-elective transfers (table 3). The CPR/ET was higher in younger women. In women aged ≤34 years the CPR of eSET and eDET were 30% and 52%, respectively.

In OD cycles, the CPR/ET, with eSET was 29% (OR 0.95 95%CI 0.5-1.8), and 52% with eDET (OR 1.2 95%CI 1.0-1.4).

**Perinatal outcome**

The duration of gestation was reported in 7,126 deliveries (5,281 singletons, 1,704 twins, and 141 ≥triplets). Among singletons, the mean gestational age at delivery was 38 weeks amenorrhea (WA); among twin it was 35 WA; and among ≥triplets it was 32 WA.

The risk of preterm birth, (before completing 37 WA), among singletons was 17% (n=898). The relative risk of preterm birth among twin deliveries was 3.9 (95% CI 3.7-4.2), and among triplets-and-higher was 5.7 (95% CI 5.3-6.1). The risk of very-preterm birth among singletons was 3.6% (n=190); among twins it was 13.2 % (n=225) and among ≥triplets it was 51.8% (n=73) (p<0.0001).

We explored whether embryo cryopreservation affected neonatal weight. For this, we compared the neonatal weight between singletons born after IVF/ICSI with those born after FET, both with autologous oocytes. The mean gestational age of singletons after FET differs considerably from that of fresh embryo transfers, 37.9 and 37.6 WA respectively (p=0.001). Although the difference reached statistical significance, it has no clinical significance, since it only few days. We performed a multivariate lineal regression to determine the effect on neonatal weight. After correcting for gestational age, neonatal weight
was not affected by the type of embryo (FET or fresh IVF/ICSI)
(coef. -38.8; 95% CI -130.9-53.2, p=0.408).

Table 7 shows that perinatal mortality increased significantly with gestational order. Singletons had a perinatal mortality of 6.7 per thousand, compared with 18.5 per thousand in twins and 19.1 per thousands in ≥ triplets (p<0.0001). The RR of perinatal mortality among twins was 2.8 (95% CI 1.9-4.0), and among triplets-and-higher was 2.9 (95% CI 1.4-6.1).

Pre implantation Genetic Diagnosis (PGD)
Clinics located in Argentina, Brazil, Chile, Colombia, Ecuador, México, Panama, Peru, Uruguay and Venezuela reported cycles where PGD and genetic screening (PGS) were performed. Overall, 740 cycles were initiated, and only 480 embryo transfer cycles.

The major contributors to 480 transfer cycles were Brazil (55%), Peru (27%) and Argentina (11%).

The mean age of women undergoing embryo transfer after PGD was 37 years (21 to 47 years). A mean of six embryos were analyzed in each cycle, and a mean of two of each were reported as normal. 152 clinical pregnancies were registered and 117 deliveries (25.1%). Of these, 668 were reported as singletons, 216 twins and 8 triplets. The mean age of the women undergoing assisted hatching was 35 years. After correcting for age, the OR for delivery rate after embryo transfer for AH compared with regular ICSI (no AH), was 1.1 (95% CI 0.98-1.16).

Assisted hatching (AH)
Clinics in Argentina, Brazil, Mexico, Panama, Peru and Uruguay reported AH in 3,556 embryo transfer cycles, generating 1,162 clinical pregnancies and 892 deliveries (25.1%). Of these, 668 were reported as singletons, 216 twins and 8 triplets. The mean age of the women undergoing assisted hatching was 35 years. After correcting for age, the OR for delivery rate after embryo transfer for AH compared with regular ICSI (no AH), was 1.1 (95% CI 0.98-1.16).

Intrauterine insemination
Table 8 shows the results of IUI cycles, either with semen of the husband (IIU-H) or donor (IIU-D), reported by clinics located in eight different countries.

Forty nine clinics reported 4,874 cycles of IIU-H. The delivery rate per cycles was 15%. The multiple-
delivery rate was 14%: 12% twin and 2% triplets-and-higher.

Thirty seven clinics reported 876 cycles of IIU-D. The delivery rate per cycles was higher, 20%. The multiple-delivery rate was 13%: 11% twin and 2% triplets-and-higher.

**Cumulative/total delivery rate**

The cumulative delivery rate corresponds to the number of deliveries resulting from one initiated or aspirated ART cycle including the cycle when fresh embryos are transferred, and subsequent frozen/thawed ART cycles. This rate is used when less than the total numbers of embryos fresh and/or frozen/thawed have been utilized from one ART cycles. If all embryos are used, it is referred to as total delivery rate. Because this is the first year of a case-by-case registry, cumulative deliveries are calculated by adding deliveries derived from fresh plus frozen transfers. In future years, it will be possible to calculate cumulative events by each person. So far, cumulative delivery rates in Latin America is 28% (Table9)

**Complications**

Clinics reported 90 cases of ovarian hyper stimulation syndrome, corresponding to a rate of 0.4%. Other less frequent complications included six cases of hemorrhage and one case of infection. It is likely that there is a sub-registry of complications.

**Discussion**

This is the twenty-first version of the Latin American registry of ART. The RLA has published continuously since 1990, covering ART procedures reported by institutions in Latin America since 1990. Over the years, the RLA has evolved, including the recollection and analysis of more complex information, and allowing the readers to download the resultant in PDF file from our web page (www.redlara.com).

This is the first time we implement a case-by-case register and is the only multinational case-by-case registry. The software used was developed by personnel from the RLA and field-tested in several institutions in the region. In order to implement this new method, workshops were carried out in different countries, and we believe, that the program is still in a developmental phase and continuous check-in systems are being incorporated as problems arise during its implementation. This modification in the reporting system has represented huge demands to all clinics and to personnel working in RLA.

The case-by-case register allowed to simplify the recollection of data, and also, to perform more precise and sophisticated analysis.

Another strength of this register is the uniformity of terminology. All clinics reporting to RLA, use the glossary defined in 2009 by the International Committee for Monitoring Assisted Reproductive Technologies (ICMART) and the World Health Organization (WHO) (1; 2).

In 2010, 140 clinics from thirteen countries reported the data of 37,853 ART cycles. This represents a small drop of 0.5 % compared to 2009. In 2010 the mean number of cycles registered by each clinic reached 268 cycles, whereas in 2009 it was 281. This drop in the mean number of cycles performed by each clinic can in part result from the lack of public support for infertile couples and therefore, low access to ART procedures (3). Only one center from Argentina, which reported 500 cycles in 2009 and one center from Venezuela, which reported 700 cycles in 2009, did not report this year. The rest of centers, which having reported in 2009, did not report in 2010 had only 30 and 150 initiated in 2009.
Therefore, it is likely that the number of procedures per center is not increasing as much as new centers reporting.

The use of ICSI instead of conventional IVF continues to increase. In 2010 represented 86% of oocyte pick-ups, while in 2009 and 2008, ICSI represented 85%; and in 2007 the 83% (www.redlara.com). This tendency is also seen in Europe, where in the last report, 69% of autologous cycles were ICSI (4).

The age of women undergoing IVF/ICSI cycles continues to increase. In 2009, the proportion of IVF/ICSI cycles performed in women aged 35 through 39, represented 40%; and 18% of women were ≥40 years. In 2010, women age ≥40 years represent 23% of fresh IVF/ICSI cycles. Furthermore, 7% of IVF/ICSI cycles were performed in women aged ≥43 years. Since the age of the woman is one of the most important prognosis factors, this demographic reality is important to consider when analyzing regional outcomes.

The delivery rate per oocyte pick-up in IVF/ICSI reached 23.4%, and the cumulative delivery rate reached 28%. These results are higher than the data published by ESHRE, where cumulative delivery rate reached 22% (5). Part of this difference is explained by the higher mean number of embryos transferred in Latin America compared with the majority of Europe.

The mean number of transferred embryos in IVF/ICSI did not decrease in comparison with previous years. However, the frequency of eSET and eDET did increase significantly. This might be due to a more accurate and thorough register of cases. In spite of this encouraging news, it is worrisome that in 42% of embryo transfers more than three embryos were transferred, and in 7% of cases, more than four embryos were transferred. According to ESHRE’s last report, only 24% of their embryo transfers corresponded to three and more embryos (5).

Both in IVF/ICSI and OD cycles, the transfer of more embryos resulted in an increase in the risk of triplets-and-higher order deliveries. Interestingly, the increase in the risk of twin deliveries was marginal, and barely reached statistical significance. Thus, 24% of deliveries in IVF/ICSI cycles were multiple (2% triplets-and-higher), and 28% deliveries in OD cycles were multiple (2% triplets and higher). Increasing the number of ET above two, does not significantly impact delivery rates nor twin rates. What it does, is increase the high order multiples which are so detrimental for perinatal mortality and morbidity.

As shown in this as well as previous reports, even twin deliveries increase the risk of preterm birth and perinatal mortality. And as discussed previously, the transfer of ≥two embryos is associated to an increase in the risk of multiple delivery. Probably, the main reason to transfer more embryos is the desire of both clinicians and patients to improve the outcome of each ART cycle, without considering the risk of multiple deliveries and associated prematurity. The data showed in this report is quite reassuring, since the results associated with eSET and eDET, especially in younger patients undergoing IVF/ICSI, and OD cycles- are higher than reported in previous reports.

Since the present report correspond to the analysis of observational data, and not the results of randomized controlled trials, the results cannot be considered as a evidence or support for a decreased benefit in some procedures. For example, PGD was not associated with neither a significant increase in the delivery rate nor a reduction in the miscarriage rate. This might be explained by the fact, that the number of procedures
is still low and RLA does not register differently pre-natal genetic diagnosis and pre-natal screening. Furthermore, the selection of women having PGD can be very different to the rest of the population, even when stratified by age. On the other hand, assisted hatching does not increase delivery rate, since no statistical significance was reached, however, caution must be expressed when analyzing this data.

The frequency of complications associated to ART procedures was rather low, only 90 cases of OHSS were reported, which represented a risk of 0.3% of initiated cycles. Furthermore, only 6 cases of genital hemorrhage and 1 case of infections were reported. This might represent a recollection bias, that needs to be improved.

This is the fourth report of IUI cycles. Clinics reported 4,874 IUI with husband’s semen, and 876 cycles with donor’s semen. This represent a clear drop compared to 2009, when 13,410 IIU-H and 2,430 IIU-D cycles were reported. This might be explained by the labor-consuming work that represented the change into a case-by-case register.

In summary, this is the first case-by-case register published by the RLA. It is reassuring for patients and clinics that the results of ART procedures performed in the region are similar or even better than in most European and Asian countries (6) (5). However, REDLARA has to enforce the reduction in the number of embryos transferred in IVF/ICSI and OD cycles, in order to prevent multiple births, or at least, high order multiples and decrease the corresponding perinatal complications.

References


Table 1 - ART procedures and access in 2010.

<table>
<thead>
<tr>
<th>Country</th>
<th>Number of clinics</th>
<th>IVF(*)</th>
<th>ICSI(*)</th>
<th>FET</th>
<th>OD(**)</th>
<th>Total Access (***): number of cycles/million of women 15-45 years</th>
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Note: (*) initiated cycles; (**) includes the transfer of fresh and frozen embryos; (***) number of cycles/million of women 15-45 years.

include 7 cycles of GIFT/TOMI in Chile and 1 in Argentina.
<table>
<thead>
<tr>
<th>ART Procedure</th>
<th>Clinical Pregnancy Rate per ET</th>
<th>Delivery Rate per ET</th>
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<tr>
<td><strong>OD</strong></td>
<td>47.0%</td>
<td>38.6%</td>
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<tr>
<td><strong>FET</strong></td>
<td>29.3%</td>
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<td><strong>OD (FET)</strong></td>
<td>32.4%</td>
<td>24.7%</td>
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Table 2a. Clinical pregnancy rate and delivery rate for IVF/ICSI, 2010

<table>
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<th>ART Procedure</th>
<th>Clinical Pregnancy Rate per OPU</th>
<th>Oocyte pick up (OPU)</th>
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<tr>
<td><strong>ID</strong></td>
<td>30.9%</td>
<td>24.2%</td>
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<tr>
<td><strong>ICSI</strong></td>
<td>47.0%</td>
<td>38.6%</td>
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Table 2b. Clinical pregnancy rate and delivery rate for OD, FET, OD (FET), 2010
<table>
<thead>
<tr>
<th>Number of transferred embryos</th>
<th>CPR/ET Total (number)</th>
<th>Deliveries</th>
<th>CTR/ET</th>
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<th>Deliveries</th>
<th>CTR/ET</th>
<th>Deliveries</th>
<th>CTR/ET</th>
<th>Deliveries</th>
<th>CTR/ET</th>
<th>Deliveries</th>
<th>CTR/ET</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>≥4</td>
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</tr>
<tr>
<td>Total</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

CPR = clinical pregnancy rate  
ET = embryo transfers
<table>
<thead>
<tr>
<th>Number of transferred embryos</th>
<th>Total ET</th>
<th>CPR/ET</th>
<th>Deliveries</th>
</tr>
</thead>
<tbody>
<tr>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
</tr>
<tr>
<td>2</td>
<td>2.2%</td>
<td>27.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>2.5%</td>
<td>27.4%</td>
<td>0.0%</td>
<td>74</td>
</tr>
<tr>
<td>3%</td>
<td>28.5%</td>
<td>0.0%</td>
<td>620</td>
</tr>
<tr>
<td>4%</td>
<td>28.9%</td>
<td>0.8%</td>
<td>1,113</td>
</tr>
<tr>
<td>5%</td>
<td>33.7%</td>
<td>4.3%</td>
<td>3,383</td>
</tr>
<tr>
<td>0.0%</td>
<td>100.0%</td>
<td>0.0%</td>
<td>18,479</td>
</tr>
</tbody>
</table>

ET = embryo transfers
CPR = clinical pregnancy rate

Table 4: Clinical pregnancy rate, delivery rate and gestational order according to the number of embryos transferred, OD 2010.
<table>
<thead>
<tr>
<th>Number of transferred embryos</th>
<th>Number of ET</th>
<th>CPR/ET</th>
<th>Deliveries</th>
<th>Total ET</th>
<th>CPR/ET</th>
<th>Deliveries</th>
<th>Total ET</th>
</tr>
</thead>
<tbody>
<tr>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td></td>
</tr>
<tr>
<td>1.3%</td>
<td>2.3%</td>
<td>76.7%</td>
<td>76.7%</td>
<td>33.3%</td>
<td>322</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>1.9%</td>
<td>2.8%</td>
<td>77.4%</td>
<td>77.4%</td>
<td>30.3%</td>
<td>1,775</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>1.3%</td>
<td>1.7%</td>
<td>81.2%</td>
<td>81.2%</td>
<td>31.4%</td>
<td>2,368</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>0.0%</td>
<td>0.0%</td>
<td>100.0%</td>
<td>100.0%</td>
<td>17.6%</td>
<td>692</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>≥3 Triples</td>
<td>Twin</td>
<td>Singleton</td>
<td>Total (number)</td>
<td>CPR/ET</td>
<td>Total ET</td>
<td>Number of embryos transferred</td>
<td></td>
</tr>
</tbody>
</table>

Table 5. Clinical pregnancy rate, delivery rate and gestational order according to the number of embryos transferred, FET 2010.
<table>
<thead>
<tr>
<th>Delivers</th>
<th>Triplet</th>
<th>Twin</th>
<th>Singleton</th>
<th>Total (number)</th>
<th>CPR/ET</th>
<th>%</th>
<th>Number</th>
<th>ET transferred</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>&lt;4</td>
<td>3</td>
<td>2</td>
<td>96</td>
<td>4%</td>
<td>96</td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>% 14%</td>
<td>1%</td>
<td>2%</td>
<td>96.3%</td>
<td>160</td>
<td>4%</td>
<td>160</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>% 11%</td>
<td>1.3%</td>
<td>23.4%</td>
<td>73.2%</td>
<td>158</td>
<td>8%</td>
<td>158</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>% 0.9%</td>
<td>4.5%</td>
<td>93.5%</td>
<td>2%</td>
<td>22</td>
<td>1.1%</td>
<td>22</td>
<td></td>
<td>1</td>
</tr>
</tbody>
</table>

Table 6. Clinical pregnancy rate, delivery rate and gestational order according to the number of embryos transferred, FET (OD) (2010)
<table>
<thead>
<tr>
<th>Gestational Order</th>
<th>Singleton</th>
<th>Twin</th>
<th>≥ Triplets</th>
<th>19.1' per thousand</th>
<th>18.5' per thousand</th>
<th>6.7' per thousand</th>
<th>Total</th>
<th>6.7' per thousand</th>
</tr>
</thead>
<tbody>
<tr>
<td>OD</td>
<td>2,375</td>
<td>9</td>
<td>38</td>
<td>3.877</td>
<td>14</td>
<td>15</td>
<td>225</td>
<td>14</td>
</tr>
<tr>
<td>FET</td>
<td>815</td>
<td>2</td>
<td>1</td>
<td>3.687</td>
<td>13</td>
<td>14</td>
<td>159</td>
<td>14</td>
</tr>
<tr>
<td>FET(OD)</td>
<td>1,072</td>
<td>5</td>
<td>17</td>
<td>3.877</td>
<td>15</td>
<td>16</td>
<td>215</td>
<td>15</td>
</tr>
<tr>
<td>IVF/ICSI</td>
<td>274</td>
<td>4</td>
<td>1</td>
<td>3.687</td>
<td>14</td>
<td>15</td>
<td>24</td>
<td>15</td>
</tr>
<tr>
<td>LB</td>
<td>1,072</td>
<td>5</td>
<td>17</td>
<td>3.877</td>
<td>15</td>
<td>16</td>
<td>215</td>
<td>15</td>
</tr>
<tr>
<td>SB</td>
<td>412</td>
<td>0</td>
<td>1</td>
<td>3.687</td>
<td>14</td>
<td>15</td>
<td>24</td>
<td>15</td>
</tr>
<tr>
<td>ND</td>
<td>40,815</td>
<td>1</td>
<td>8</td>
<td>3.877</td>
<td>14</td>
<td>15</td>
<td>24</td>
<td>15</td>
</tr>
</tbody>
</table>

LB = live borns; SB = still borns; ND = neonatal death

Table 7: Perinatal mortality according to gestational order, 2010
<table>
<thead>
<tr>
<th>Gestational order</th>
<th>Deliveries/Cycles</th>
<th>Cycles</th>
<th>IUI</th>
<th>Donor</th>
<th>Husband</th>
</tr>
</thead>
<tbody>
<tr>
<td>Singleton</td>
<td>4,874</td>
<td>87.6</td>
<td>2%</td>
<td>87%</td>
<td>15%</td>
</tr>
<tr>
<td>Twin</td>
<td>876</td>
<td>20%</td>
<td>2%</td>
<td>88%</td>
<td>12%</td>
</tr>
<tr>
<td>Triplets</td>
<td></td>
<td></td>
<td>2%</td>
<td>77%</td>
<td>11%</td>
</tr>
</tbody>
</table>

Table 8 - Intrauterine insemination 2010
<table>
<thead>
<tr>
<th>Delivery rate per OPU</th>
<th>Cumulative delivery</th>
<th>Delivers FET</th>
<th>Deliveries IVP/ICSI</th>
<th>Total OPU</th>
</tr>
</thead>
<tbody>
<tr>
<td>28.0%</td>
<td>7,093</td>
<td>1,159</td>
<td>3,934</td>
<td>25,289</td>
</tr>
<tr>
<td>4.6%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>23.3%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NA</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(n)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 9: Cumulative delivery rate IVF/ICSI, 2010
Figure 1 - Age distribution of women undergoing IVF/ICSI, 2010.
Figure 2a: Delivery rate per embryo transfer in different age categories of women undergoing IVF/ICSI, 2010.
Figure 2b: Delivery rate per embryo transfer according to age of woman, 2010
Participating Institutions

ARGENTINA

Buenos Aires
1.- Centro de estudios en Ginecología y Reproducción (CEGYR)
2.- Centro de Salud Reproductiva (CER)
3.- Centro de Investigaciones en Medicina Reproductiva –CIMER
4.- FECUNDITAS
5.- Centro especializado en tratamientos para la mujer-GENS
6.- Hospital de Clínicas
7.- Centro de Reproducción-Servicio de Ginecología-Hospital Italiano
8.- HALITUS, Instituto Médico
9.- PREGNA, Medicina reproductiva
10.- Procrearte
11.- Fertilidad San Isidro
12.- SEREMAS
13.- FERTILAB

Córdova
1.- Centro Integral de Ginecología, Obstetricia y Reproducción (CIGOR)
2.- FECUNDART

La Plata
1.- Centro de Reproducción

Mar del Plata
1.- Centro de estudios en Reproducción y Procedimientos de Fertilización Asistida (CRECER)

Mendoza
1.- Centro de estudios en Reproducción Humana (CERH)
2.- Instituto de Medicina Reproductiva

Salta
1.- MATER Medicina Reproductiva
2.- SARESA, Salud Reproductiva Salta

Bahía blanca
1.- AMERIS, Centro de Fertilidad, Ginecología y Urología

BRASIL

Belo Horizonte
1.- Instituto de Saúde Mulher
2.- Clínica ORIGEN
3.- Clínica Pro-criar/Mater Dei

Brasilia
1.- Instituto Verhum - Vídeo Endoscopia e Reprodução Humana
2.- GÊNESIS – Centro de Assistência em Reprodução Humana Ltda.
3.- Centro de Ensino e Pesquisa em Reprodução Assistida
Campo Grande-Mato Grosso
1.- Fertility Centro de Fertilização Humana Assistida de Campo Grande
Campinas-SP
1.- Centro de Reprodução Humana de Campinas
2.- Clínica Androfert
Cuiabá-Mato Grosso
1.- Instituto Pérola de Reprodução Humana
2.- LIFE Reproducción Humana
Curitiba
1.- ANDROLAB – Clínica e Laboratório de Andrologia
2.- CONCEBER, Centro de Medicina Reprodutiva
3.- Clínica FERTWAY
Florianópolis
1.- CLINIFERT – Centro de Reprodução Humana
Fortaleza
1.- BIOS - Centro de Medicina Reprodutiva
2.- FERTVIDA (anteriormente "CRIAR - Centro de Reprodução Humana")
3.- CONCEPTUS – Centro de Reprodução Humana do Ceará
Goiania Goiás
1.- Fértil Diagnósticos - Reprodução Humana
Juiz de Fora-Minas Gerais
1.- Pro-criar, Monte Sinai, Clinica de Reprodução Humana
Londrina-Paraná
1.- CEDILON Serviços Médicos S.C. Ltda.
Paso Fundo
1.- GÊNESIS – Clínica de Reprodução Humana
Porto Alegre
1.- Centro de Reprodução Humana Nilo Frantz
2.- FERTILITAT – Centro de Medicina Reprodutiva
3.- INSEMINE - Centro de Reprodução Humana
4.- Núcleo de Reprodução Humana do Hospital Moinhos de Vento GERAR
5.- PROGEST
6.- SEGIR – Servicio de Ecografia, Genética e Reprodução Humana
Recife-Pernambuco
1.- NASCER Medicina Reprodutiva
2.- Clínica de Fertilidade GERAR
Ribeirão Preto-SP
1.- Centro de Reprodução Humana Prof. Franco Junior
2.- Clinica Matrix
3.- Laboratorio de Reprodução Humana, Hospital das Clínicas de Ribeirao Preto
Rio de Janeiro
1.- Centro de Medicina da Reprodução Ltda.
2.- Centro de Fertilidade Rede D’Or
3.- Clínica Origen
4.- Clínica Pró Nascer
5.- G&O Ginecologia e Obstetricia da Barra (now Fertipraxis)
6.- HUNTINGTON – Centro de Medicina Reproductiva (now Primordia)
Salvador Bahia
1.- Centro de Reprodução Humana, Endoscopia e Medicina Fetal
Sao José Dos Campos-SP
1.- Clínica REPROFERTY
2.- Embryolife-Instituto de Medicina Reprodutiva
Sao José do Rio Preto
1.- IMR - Centro Instituto de Medicina Reprodutiva e Fetal
Sao Paulo-SP
1.- Centro de Reprodução Humana FERTIVITRO Ltda.
2.-ORIGINARE, Centro de Investigação em Reprodução Humana
3.- Centro de Reprodução Humana Monteleone
4.- CEERH – Centro Especializado em Reprodução Humana
5.- FERTILITY – Centro de Fertilização Assistida
6.- FERTICLIN – Clínica de Fertilidade Humana
7.- Chedid Grieco Medicina Reprodutiva
8.- HUNTINGTON – Centro de Medicina Reproductiva
9.- Serviço de Reprodução Humana, Hospital e Maternidade Santa Joana
Uberlandia –Minas Gerais
1.- FECUNDA - Instituto de Reprodução Humana
Vitória
1.- Jules White Medicina Reproductiva (anteriormente, "HUNTINGTON - Centro de Medicina Reproductiva")
Santos
1.-Clínica PRO GENESIS (new)
Presidente Prudente
1.- REPRODUCTION, Clínica Urológica e Centro de Reproducao Humana LTDA. (new)
CHILE

Santiago
1.- Centro de estudios Reproductivos (CER)
2.- Unidad de Medicina reproductiva, Clinica Alemana
3.- Unidad de Medicina Reproductiva, Clinica las Condes
4.- Unidad de Medicina Reproductiva, Clinica las Nieves
5.- Programa de Fertilización Asistida I.D.I.M.I.
Viña del Mar
1.- Unidad de Medicina reproductiva, Clínica de la Mujer
Concepción
1.- Centro de Fertilidad y Medicina Reproductiva CONCEPCION S.A.

COLOMBIA

Cali
1.Centro FECUNDAR Cali
2.Centro Médico IMBANACO
Bogotá
1.- Unidad de Fertilidad del Couytry Ltda
2.- Asociados en Fertilidad Humana
3.- PROFAMILIA-Fertil
4.- Unidad de Fertilidad, Procreación Médicamente Asistida
Medellín
1.- IN SER, Instituto Antioqueño de ReproducciónBarranquilla
1.- PROCREAR

ECUADOR

Quito
1.- Centro Ecuatoriano de Reproducción Humana
2.- CONCEBIR, Unidad de Fertilidad y esterilidad
Guayaquil
1.- Instituto Nacional de Investigación de Fertilidad Esterilidad (INNAIFEST)
2.- Unidad de Fertilidad Hospital Alcivar
Cuenca
1.- Clinica de Medicina Reproductiva BIOGEPAGUATEMALA

1.- Centro de Reproducción humana S.A.
MEXICO

Ciudad de Juarez-Chihuahua
1.- Unidad de Reproducción Humana y Genética
Guadalajara-Jalisco
1.- Centro de Reproducción Asistida del Occidente
2.- Instituto de Ciencias en Reproducción Humana – VIDA
3.- Instituto de Medicina Reproductiva del Bajío (IMER)
Hermosillo
1.- Clínica de Biología de la Reproducción, Hospital CIMA
León –Guanajuato
1.- Instituto de Ciencias en Reproducción Humana – VIDA
Matamoros
1.- Instituto de Ciencias en Reproducción Humana – VIDA
México DF
1.- Centro Especializado en Esterilidad y Reproducción Humana
2.- INGENES
3.- Centro Médico Nacional 20 de Noviembre
4.- Centro de Reproducción Asistida del Hospital Español
5.- Instituto Médico de la Mujer
6.- Instituto Mexicano de alta tecnología reproductiva S.C. (new)
7.- Centro especializado para la atención de la mujer
8.- Instituto Valenciano de Infertilidad (IVI) (new)
Monterrey
1.- Centro Universitario de Medicina Reproductiva, Universidad Autónoma de
Nuevo León
2.- Instituto para el Estudio de la Concepción Humana
Puebla
1.- Centro de Ginecología y Reproducción Asistida S.C. GYRA
Querétaro
1.- Médica Fértil
San Luis de Potosí
1.- Médica Fértil
2.- Filius (anteriormente, OBGIN S.C., SLP)
Tijuana Baja California
1.- Instituto de Medicina Reproductiva del Bajío – IMER
2.- Instituto para el Estudio de la Concepción Humana de Baja California (IECH & BC)
Veracruz
1.- Centro de Diagnóstico Ginecológico
Saltillo
1.-Centro de Reproducción asistida de Saltillo (new)
NICARAGUA
Managua
1.- Centro de Fertilidad de Nicaragua, NICFERT

PANAMA
1.- IVI, Panamá S.A.
2.- Women’s Health in IVF

PERÚ
Lima
1.- Clínica CEFRA, Centro de fertilidad y Reproducción Asistida
2.-Clínica Miraflores, Instituto de Ginecología y Fertilidad
3.-Grupo PRANOR, Clínica Concebir
4.- Grupo PRANOR, Instituto de Ginecología y reproducción.

REPUBLICA DOMINICANA
Santo Domingo
1.- PROFERT, Programa de Fertilización Asistida y Medicina Perinatal.

URUGUAY
Montevideo
1.- Centro de Esterilidad Montevideo (CEM)
2.-Centro de Reproducción Humana del Interior

VENEZUELA
Caracas
1.- FERTILAB, Clínica el Avila
2.- UNIFERTES, Clínica el Avila
3.- EMBRIOS, Centro de Fertilidad y Reproducción humana, Hospital de Clínicas Caracas
4.- GENESIS, Unidad de Fertilidad y Reproducción
Valencia
1.- Instituto Venezolano de Fertilidad Maracaibo
1.- Laboratorios In Vitro de Venezuela