Why do couples discontinue in vitro fertilization treatment? A cohort study

Catharina Olivius, B.Sc.,a Barbro Friden, M.D., Ph.D.,b Gunilla Borg, R.N., B.S.,a and Christina Bergh, M.D., Ph.D. a

Sahlgrenska University Hospital, Göteborg, and Varberg Hospital, Varberg, Sweden

Objective: To investigate reasons for discontinuation of IVF treatment.

Design: Prospective, cohort study.

Setting: Center for reproductive medicine at a large university hospital.

Patient(s): The 450 couples of a cohort of 974 couples who started IVF treatment between January 1996 and December 1997 and did not achieve childbirth.

Intervention(s): The reasons for ceasing treatment were evaluated by scrutinizing the medical records for all couples (n = 288) who did not achieve live birth and who did not complete three stimulated IVF cycles. A questionnaire was sent to all patients for whom the reason for discontinuation was not obvious from the medical records (n = 211).

Main Outcome Measure(s): Reasons for discontinuing IVF.

Result(s): Of 450 couples not achieving live birth, 208 completed their subsidized cycles, whereas 242 discontinued IVF. In 192 (79%) of the 242 cases, the reasons for ceasing treatment could be identified from records or questionnaires. The reason for discontinuation was psychological burden in 26%, a poor prognosis in 25%, spontaneous pregnancy in 19%, physical burden in 6%, serious disease in 2%, and other reasons in 7%.

Conclusion(s): An unexpectedly high percentage of couples who performed IVF discontinued the treatment before the three cycles that were offered to a majority of the couples. A majority of these discontinuations were due to psychological stress. This information is of importance when counseling patients during treatment. (Fertil Steril 2004;81:258–61. ©2004 by American Society for Reproductive Medicine.)

Key Words: In vitro fertilization, live birth, discontinuation

Several studies have been published concerning the success rate after IVF, both per cycle and for cumulative data. At Sahlgrenska IVF Unit, we have found that 55.5% of a cohort of 974 couples who initiated IVF treatment between January 1996 and December 1997 achieved a live birth within three subsidized cycles (1). Despite our knowledge that many couples starting IVF treatment will not have children, few studies deal with these couples. In our previous study, we unexpectedly found that 54% of the patients not achieving live birth discontinued the IVF program, despite the treatment being free of charge.

The objective of the present study was to investigate the reasons that these couples did not continue treatment.

MATERIALS AND METHODS

Patients

A cohort of 974 couples started their first IVF cycle between January 1996 and December 1997 at Sahlgrenska University Hospital, Göteborg, Sweden. Most couples were offered three completed IVF cycles without charge. We showed in a study published elsewhere (1) that in this cohort, 55.5% (524) of the couples achieved live birth as a result of treatment. The present study focuses on the 450 couples who did not achieve live birth and particularly on the 242 couples who discontinued treatment before completing three (in some cases two) subsidized cycles (Fig. 1). The mean age of the women who discontinued treatment was 33.0 years and did not differ from that of those who
continued treatment. The reasons for infertility in those who discontinued treatment were male infertility in 65 (27%) patients, tubal pathology in 57 (24%) patients, unexplained infertility in 52 (21%) patients, other female factors in 35 (14%) patients, and multifactorial in 65 (14%) patients. These figures were similar for those who continued treatment.

Methods
The reasons for discontinuing treatment were evaluated by scrutinizing the medical records of all couples (n = 288) who did not achieve live birth and who did not complete three stimulated IVF cycles. In 77 cases, the main reason for ceasing treatment was apparent from the patient’s medical records. A questionnaire was sent to all other patients (n = 211 couples) asking the main reason for their discontinuation of treatment. Only one reason per couple was registered. The questions were divided into three categories, with preselected answers for patients to check. The three categories were as follows: [1] economic reasons (for instance, the patient only received two subsidized cycles and this was not apparent from the patient’s records), [2] medical reasons (for instance, the couple was recommended by their physician to stop treatment because of a poor prognosis; other medical reasons were physical burden, psychological burden, or serious disease in one partner), and [3] social reasons (for instance, divorce or marital problems, change of residence).

The second part of the questionnaire included questions about the care given at the IVF center. Preselected alternatives were “good,” “less good,” and “poor” quality of care. Finally, the couples were invited to share spontaneous comments on why they discontinued treatment and on the care that they had received at the center as well as suggestions for improvement.

The questionnaires were, in all, sent out three times if there was no response. The study was approved by the Ethics Committee of Göteborg University.

Descriptive statistics are given as number (n) and %. Statistical comparison between groups was performed by Fisher’s exact test or Student’s t test when appropriate. A P value of <.05 was considered significant.

RESULTS
Of the couples who did not achieve live birth, 162 couples completed three stimulated cycles, 46 couples completed two stimulated cycles, and 242 couples discontinued subsidized treatment of their own will. Of the 211 couples who received the questionnaire, 162 (77%) responded. In 192 (79%) of the 242 cases, the reason for discontinuing treatment could therefore be identified from records or questionnaires. The reasons for discontinuing treatment are shown in Table 1. In that table, the 46 couples who received only two subsidized cycles are excluded.
No statistically significant differences were found between responders and nonresponders concerning age of the women and reason(s) for infertility (data not shown).

The most common reason for discontinuing treatment before having received two or three free cycles was psychological burden (26%). Psychological burden included, for example, several earlier failed treatments for infertility, late miscarriage, or legal abortion due to fetal chromosomal abnormalities in previous IVF, seeing different doctors each visit, and feeling pressure to succeed in the treatment. A poor prognosis was the reason in 25%. It is noteworthy that 19% declined treatment because of spontaneous pregnancy, and 15%, because of divorce or marital problems. Physical burden, which was the main reason in 6%, included, for example, severe gynecological or abdominal infection, ovarian hyperstimulation syndrome, and pain from injections (Table 1).

One hundred fifty-two patients made comments on the care given at the center. Altogether, 100 (66%) of these patients were satisfied, 35 (23%) were less satisfied, and 17 (11%) were not satisfied.

The answers about the care were compared between those who discontinued treatment of their own accord and those who only received two stimulated cycles free of charge. Surprisingly, couples who discontinued treatment were as satisfied with the care at the IVF center as those who completed their treatment. Of the 152 couples who made comments on the care, 108 couples discontinued treatment, and 44 received only two treatments free of charge. In the first group, 68% (74) described the care as good, 19% (20) as less good, and 13% (14) as poor. The corresponding numbers for the group receiving only two cycles were 60% (27) good, 33% (15) less good, and 7% (3) poor. These numbers did not differ significantly.

One hundred forty-three couples shared one or more spontaneous comments, falling into five major categories, as presented in Table 2.

### TABLE 1

<table>
<thead>
<tr>
<th>Reason</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Psychological burden</td>
<td>50</td>
<td>26</td>
</tr>
<tr>
<td>Poor prognosis</td>
<td>48</td>
<td>25</td>
</tr>
<tr>
<td>Spontaneous pregnancy</td>
<td>37</td>
<td>19</td>
</tr>
<tr>
<td>Divorce</td>
<td>28</td>
<td>15</td>
</tr>
<tr>
<td>Physical burden</td>
<td>11</td>
<td>6</td>
</tr>
<tr>
<td>Serious disease</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Others (adoption, moved, etc.)</td>
<td>15</td>
<td>7</td>
</tr>
<tr>
<td>Total</td>
<td>192</td>
<td>100</td>
</tr>
</tbody>
</table>


### TABLE 2

<table>
<thead>
<tr>
<th>Type of comment</th>
<th>Example</th>
<th>n°</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emotional and stressful reaction to infertility situation</td>
<td>“We needed to talk to a psychologist”</td>
<td>22</td>
</tr>
<tr>
<td></td>
<td>“Couldn’t cope with more treatment”</td>
<td>3</td>
</tr>
<tr>
<td>Organizational problems</td>
<td>“Poor organization at the clinic”</td>
<td>23</td>
</tr>
<tr>
<td></td>
<td>“Insufficient care of the man”</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>“Never the same people from time to time”</td>
<td>9</td>
</tr>
<tr>
<td>Poor ability to handle patients in psychological distress</td>
<td>“The doctors and nurses didn’t listen to me”</td>
<td>18</td>
</tr>
<tr>
<td></td>
<td>“I wasn’t met with empathy”</td>
<td>21</td>
</tr>
<tr>
<td></td>
<td>“The doctors/nurses didn’t treat me nicely”</td>
<td>4</td>
</tr>
<tr>
<td>Lack of autonomy during treatment</td>
<td>“Stressful, assembly-line treatment”</td>
<td>29</td>
</tr>
<tr>
<td></td>
<td>“Needed more information concerning the treatment and alternatives”</td>
<td>31</td>
</tr>
<tr>
<td>Good care</td>
<td>“Great commitment and professionalism despite high stress level, very well cared for”</td>
<td>23</td>
</tr>
</tbody>
</table>

Some patients made more than one comment.


### DISCUSSION

A majority of the couples (54%) who did not achieve a live birth in our study chose not to proceed through the full treatment program consisting of three (in a few cases, two) completed IVF cycles. This was an unexpected finding. The reasons for discontinuing efficient treatment for infertility, free of charge, have not previously been studied in detail. In a recent publication from the Netherlands (2), where the cost of treatment for up to three cycles is also covered by society, the dropout rate was approximately 60% after three cycles, and those investigators concluded that economic reasons were of major importance. In our study, in which economic reasons for discontinuing treatment could be ruled out, we found that the main reason for ceasing treatment was psychological stress, followed by a poor prognosis.

The questionnaires were sent to all patients for whom the main reason for not continuing treatment was not obvious from the medical records. For patients for whom the reason for discontinuing treatment was obtained from the medical records, the records made the reason quite obvious. Only one reason per couple was recorded. There might have been other reasons as well, but it was not the aim of the study to register that.

Many of the patients reported the need for psychological counseling during treatment. The correlation between stress and poor outcome of fertility treatment has yet to be demonstrated, however, and the picture is contradictory. Apart
from the obvious ambition to offer high-quality care, some studies have reported psychological stress to be an unfavorable factor influencing the success of IVF (3, 4). Young et al. (5) concluded that psychological counseling should be provided during the period after embryo transfer up to the pregnancy test, as this period was demonstrated to be the most stressful. Other studies have failed to demonstrate the relationship between the emotional status of women and the outcome of assisted reproduction treatment (6, 7).

Surprisingly, some of the patients in our study suggested in their spontaneous comments that the initial information should include adoption and alternative treatments for infertility. These are findings with implications for most providers offering state-subsidized care but may also be important for privately funded centers with high ambitions for offering customized care.

In Sweden, increasing concern about the adverse effects (8, 9) for the children from multiple pregnancies has led to a reduction in the number of embryos transferred per cycle in recent years. So far, single embryo transfers (SET) in studies with a limited number of patients have resulted in satisfactory pregnancy rates (10–13). However, SET has not been practiced on a large scale. It is reasonable to assume that a general SET policy would lead to a decreased success rate, both per cycle and cumulatively for three cycles. A general SET policy has been debated and suggested in Sweden. In the proposed policy, the decreased chances of pregnancy after three cycles may be compensated for by a higher number of subsidized cycles per patient.

The results from this study indicate that the majority of couples who do not make it through three cycles could compromise the results, leading to fewer live births after SET than the current two-embryo transfer policy. Similar results as in our study have been reported in a recent study from Australia (14), where it was found that despite six subsidized cycles, the mean number of started cycles per couple was 3.1, regardless of whether the couple achieved a live birth or not. The most common reason for discontinuing treatment in that study was emotional burden. A prospective, randomized study demonstrating the exact differences in pregnancy and birth-rates between one- and two-embryo transfers per cycle is much needed to elucidate these matters before decisions are made.

In conclusion, a large portion of patients undergoing IVF treatment at our center and not achieving live birth had difficulties managing three IVF cycles. The most common reason for discontinuing treatment was psychological stress. It is important to consider these findings when suggesting a change of policy regarding the number of embryos per transfer.

References


