Patients’ preferences in deciding between intrauterine insemination and expectant management

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BACKGROUND: Intrauterine insemination (IUI) is a commonly used treatment in subfertile couples. We assessed patients’ preferences for IUI relative to expectant management. METHODS: Forty subfertile couples were offered scenarios in which the treatment-independent pregnancy chance was varied against a fixed pregnancy chance after IUI without or with controlled ovarian hyperstimulation (COH) of 8% and 12% per cycle, respectively. The treatment-independent pregnancy chance within 12 months was initially set at 100%, and subsequently reduced until couples switched preferences. We also investigated the impact of the risks of ovarian hyperstimulation syndrome (OHSS) and multiple pregnancy on couples’ preferences. RESULTS: When pregnancy was guaranteed within a year, all couples would opt for expectant management. Most couples switched to IUI without COH at a 60% chance of a treatment-independent pregnancy and to IUI with COH between a 40% and 60% chance. Where the risk of OHSS was set at 10%, a large majority of the couples preferred expectant management to IUI. At a multiple pregnancy risk of 100%, 77% of the couples would still prefer IUI. CONCLUSIONS: The majority of couples prefer IUI with or without COH when the treatment-independent pregnancy chance in the next 12 months is <50% and <40%, respectively. The risk of a multiple pregnancy does not affect their preference for IUI, whereas IUI is rejected when the risk of OHSS exceeds 10%.

Key words: intrauterine insemination/preference/subfertility

Introduction

Couples who have been trying to conceive for >1 year may be referred to a gynaecologist to undergo a basic fertility work-up. This work-up contains a medical history, cycle evaluation, semen analysis, post-coital test and assessment of the Fallopian tubes. The outcome of the basic fertility work-up guides the doctor in making a decision between expectant management or starting treatment. When fertility prospects are good the couple may be counselled to delay treatment by 6–12 months. In case of cervical factor subfertility or male subfertility, or when the prognosis for a treatment-independent pregnancy is low, intrauterine insemination (IUI) with or without controlled ovarian hyperstimulation (COH) is commonly used.

Although IUI is a relatively simple concept, there are some drawbacks of this treatment. Treatment itself might be a burden to the couple, it generates costs, and the additional use of COH bears the risks of ovarian hyperstimulation syndrome (OHSS) and multiple pregnancy (Levene et al., 1992).

Nowadays it is generally acknowledged that patients’ preferences should be incorporated into medical decision making (Kassirer, 1994). Several studies have shown that patients’ perspectives on the burden and benefits of therapy can differ from those of health professionals (Devereaux et al., 2001). Physicians should therefore explicitly and actively seek patients’ preferences (Montgomery and Fahey, 2001).

We performed a study to document patients’ preferences for IUI versus expectant management, and their evaluation of the risks associated with IUI.

Materials and methods

Couples were invited to participate in the study at their first visit to the gynaecologist at the Academic Medical Centre Amsterdam, the Onze Lieve Vrouwe Gasthuis Amsterdam, the Vrije Universiteit Medical Centre Amsterdam and the Twee Steden Ziekenhuis Tilburg, for an unfulfilled wish to have a child. At the time of the interview no definitive cause for the couples’ subfertility, nor their
prognosis, was available. Selection of couples depended upon the presence of the interviewer on non-fixed, scheduled days, and was therefore independent of the type of patients seen that day. Prior to the interview we registered female age, fertility treatment in the past, duration of subfertility, cycle history, and whether the couple had conceived before and already had children. Only couples in whom the women had a regular cycle were invited, as anovulatory women usually need ovulation induction, and expectant management is therefore rarely proposed in these women. A structured interview was designed to assess patients’ preference for IUI relative to expectant management conditional on the probability of a treatment-independent pregnancy. One of the authors (J.C.B.) performed all interviews in an outpatient setting.

Firstly, the couples were informed about IUI without COH. Detection of ovulation was supposed to take place using urine LH tests once or twice daily at home, starting on an individually calculated cycle day. Semen would be collected and prepared; insemination would take place 20–30 h after the endogenous LH surge. In the interview, the pregnancy rate of IUI without COH was set at 8% per cycle. We explained that IUI is usually given for six cycles, and that after these six cycles one in four couples would be pregnant. To determine the threshold, the couples were asked whether they would prefer expectant management to IUI in a scenario with 100% certainty of a treatment-independent pregnancy in the next 12 months. If the couple preferred expectant management, the probability of a treatment-independent pregnancy was subsequently decreased in 5% steps until the couple switched in their preference to IUI.

Secondly, the couples were informed about IUI with COH. Treatment with COH was supposed to be performed with gonadotrophins by self-administered subcutaneous injections for 8–10 days, follicular growth would be monitored by transvaginal sonography two to three times in each cycle and ovulation would be induced by a subcutaneous injection with HCG. Subsequently, semen would be collected and prepared prior to insemination, which would be performed 38 h after HCG administration. Couples were informed about the side-effects of gonadotrophins, i.e. skin irritation that might occur at the place of injections and the risk of cancellation of the insemination due to the growth of more than three follicles. Furthermore, structured information was given about the risks and consequences of OHSS and its diverse appearances, such as nausea, pain, hospitalization and, as an ultimate consequence, death. Additionally, structured information was given about the increased risk of a multiple pregnancy and its possible implications such as premature birth, hospitalization (incubator), a lower birth weight and an increased chance of a disabled child. The pregnancy rate of IUI with COH was set at 12% per cycle. We explained that IUI with COH was usually given for six cycles, and that after these six cycles one in three couples would be pregnant. To determine the threshold, the couples were asked whether they would prefer expectant management to IUI with COH in a scenario with 100% certainty of a treatment-independent pregnancy in the next 12 months. If the couple preferred expectant management, the probability of a treatment-independent pregnancy was subsequently decreased in 5% steps until the couple switched in their preference to IUI with COH.

To determine the impact of the risk of OHSS on their preference, the couples were asked if they would continue IUI in a scenario with 100% certainty of not getting OHSS after IUI. The probability of OHSS was then systematically increased in 5% steps, until the couple switched back to expectant management. To determine the impact of the risk of a multiple pregnancy we used the same approach. The couples were asked if they would continue IUI in a scenario with 100% certainty of not having a multiple pregnancy after IUI. We then increased the probability of a multiple pregnancy in 5% steps until the couple preferred not to continue IUI.

**Data analysis**

We calculated the mean probability of a treatment-independent pregnancy at which couples switched in their preference from expectant management to IUI, for IUI both with and without COH. To visualize the preference thresholds of the couples, we plotted the percentage of couples who preferred IUI (with or without COH) for each respective probability of a treatment-independent pregnancy.

To evaluate the impact of OHSS and multiple pregnancy, we calculated the mean threshold event rate at which couples would switch from IUI to expectant management.

We anticipated that the patients’ preferences might be influenced by the baseline characteristics of the couple. Therefore, we assessed associations between female age, fertility treatment in the past and duration of subfertility on one hand, and the couple’s preference threshold on the other, by calculating Spearman correlation coefficients. We also evaluated differences in the mean thresholds of the couples depending on their baseline characteristics, primary versus secondary subfertility, and having a child or not, by performing *t*-tests.

**Results**

We interviewed 40 couples. The mean female age was 33 years (range 25–39). None of the couples had undergone fertility treatment in the past. The overall duration of subfertility was 1.9 years (range 9 months to 5.1 years). In 20 couples the subfertility was primary and in 20 couples it was secondary. Thirteen of the 20 couples with secondary subfertility already had one or more children.

All couples opted for expectant management when a treatment-independent pregnancy in the next 12 months was set at 100%. The first couples switched to IUI without COH at a threshold of 80% probability of a treatment-independent pregnancy. When the probability of a treatment-independent pregnancy was only 10%, all couples preferred to be treated with IUI without COH. The mean threshold at which the couples switched their preference was 51%. Sixty per cent of the couples switched at a probability of a treatment-independent pregnancy between 40% and 60% (Figure 1).

The first couples switched to IUI with COH at an 80% probability of a treatment-independent pregnancy. On the other side of the spectrum, four couples refused treatment with IUI with COH, even if they had no chance to conceive without treatment. The mean threshold at which the couples switched their preference was 41%. Fifty-four per cent of the couples switched at a probability of a treatment-independent pregnancy between 40% and 60% (Figure 1).

All couples would continue IUI with COH when there was 100% certainty of not developing OHSS. When the risk of OHSS was increased to 50%, none of the couples would continue treatment. Most couples (78%) did not want to continue IUI when the risk of OHSS rose above 10% (Figure 2). The mean risk of OHSS at which the couples switched their preferences was 11%.

All couples would continue IUI when there was 100% certainty of not conceiving a multiple pregnancy. There were
31 (77%) couples that would continue IUI even with a 100% certainty of getting a multiple pregnancy, whereas the other nine couples (23%) switched from IUI to expectant management when the risk of a multiple pregnancy was increased (Figure 2). The mean risk of a multiple pregnancy at which the couples switched their preference was 78%. Table I gives an overview of the mean thresholds of the couples.

We did not find any significant correlation between female age, duration of subfertility and couples’ thresholds (data not shown). Nor did we find statistically significant differences in the mean thresholds of the couples if participants were divided into groups for primary or secondary subfertility or for already having a child or not (data not shown).

**Discussion**

In this study we found that, on average, all couples would prefer IUI without COH to expectant management if their probability of a treatment-independent pregnancy was 51% or lower. For IUI with COH this threshold was at 41%. At a risk of OHSS of 10% or higher, most couples would again prefer expectant management. The risk of a multiple pregnancy did not affect patients’ preferences.

The preferences of the couples were based on hypothetical scenarios. It cannot be excluded that in real situations, couples’ preferences might be different. However, all patients interviewed were suffering from subfertility such that they had contacted a fertility clinic, and the scenarios that we described were realistic. Thus, we feel that the present approach was the best way to get reliable information on patients’ preferences.

Couples switched at a higher probability of a treatment-independent pregnancy to IUI without COH compared with IUI with COH. Possibly, patients are more inclined to start a more ‘natural’ treatment. Some couples mentioned a general aversion to medication and feared the unknown consequences of treatment for either future pregnancies or for their own health. Both phenomena have been described previously in a preference study in which medical treatment with methotrexate was compared with laparoscopic surgery in tubal pregnancy (Nieuwkerk *et al.* 1998).

Ninety per cent of the couples preferred IUI without COH and 50% of the couples preferred IUI with COH over expectant management when the probability of pregnancy for the two strategies was comparable. Apparently in such a scenario, joining a treatment program is more appealing to patients than doing nothing.

Although nowadays it is generally acknowledged that patients’ preferences should be incorporated into medical decision making, treatment should only be started when this is known to increase the likelihood of getting pregnant. Over-treatment may generate unnecessary risks and unwarranted

![Figure 1. Couples’ thresholds for IUI without and with COH at variable probabilities of a treatment-independent pregnancy.](image1)

![Figure 2. Couples’ thresholds for IUI at variable risk probabilities of OHSS and a multiple pregnancy.](image2)

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<th>Table 1. Mean probabilities of a treatment-independent pregnancy or of the risk of OHSS/a multiple pregnancy at which the couple switched their preference</th>
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<td>Mean threshold (%)</td>
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costs. The misuse of facilities and other resources will lead to an extension of waiting lists for those couples who are likely to benefit from IUI.

In this study, 77% of the couples continued IUI with COH even at a 100% certainty of having a multiple pregnancy. This remarkably high percentage is in concordance with earlier studies in which a positive attitude of subfertile couples towards the prospect of multiple pregnancy has been described (Gleicher et al., 1995; Ryan et al., 2004). In the study by Ryan et al., an intuitive explanation was given for this phenomenon: nulliparous couples who have been struggling with infertility for some time may be eager to fulfill their family size goals as quickly as possible. Although we did not find any association between couples’ thresholds and female age, duration of subfertility, or subfertility being primary or secondary, such factors can influence decision-making. Since most couples preferred treatment even when their chances of a spontaneous pregnancy were still high, an association between couples’ thresholds and female age, duration of subfertility and subfertility being primary or secondary was not found.

One study has described a relationship between uncertainty about the outcomes of twin gestation and the desire for multiple births (Ryan et al., 2004). In our study, we performed structured interviews in which the potential disadvantages of multiple pregnancies were emphasized systematically. In spite of these efforts, patients preferred treatment even at a considerable risk of multiple pregnancy. Our study clearly demonstrates that structured information on the potential hazards of multiple pregnancies has little impact on patients’ preferences. Other types of counselling like turning numerical data into meaningful pictures and communicating about risks in a two-way process has been described to have a positive effect on the explanation of risks (Edwards et al., 2002; Murray et al., 2004). A study to assess the effect of alternative ways of providing information about the risks of twins on couples’ perceptions about elective single embryo transfer did not find changes in couples’ attitudes despite additional information (an extra information leaflet) and face to face discussion (Murray et al., 2004). In that study, the couples were more concerned about perceived treatment failure than about iatrogenic complications, such as ovarian stimulation and multiple pregnancy.

In summary, the majority of couples would prefer IUI with or without COH when the probability of a treatment-independent pregnancy in the next 12 months is <50% and <40%, respectively. The risk of a multiple pregnancy does not affect their preference for IUI, whereas IUI is rejected when the risk of OHSS exceeds 10%.

References

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