Reproductive experience of HIV-infected women living in Europe

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BACKGROUND: The aim of this study was to describe the experience of pregnant and non-pregnant HIV-infected women regarding fertility and childbearing, with a view to inform policies and practices to improve reproductive outcome. METHODS: A cross-sectional survey collected information on socio-demographic and basic reproductive characteristics of HIV-infected women in Europe. A total of 403 women participated; 121 were pregnant. RESULTS: The median age was 29 years and 84% (228) of women were born in Europe. Overall 68% (275 of 403) had been pregnant at some time. At the time of the survey, 59% (n = 160) of women had no HIV symptoms; severe symptoms were more frequent among non-pregnant than pregnant respondents (36% (65 of 181) versus 5% (4 of 88)). Of the women, 80% reported being in a long-standing relationship; 39% (74 of 190) reported that they became infected by their current partner and, overall, heterosexual infection was reported as the mode of acquisition in 55% (190 of 344). Maternal well-being, no previous live birth and having an uninfected partner were strongly associated with the likelihood of being pregnant. To assess the problems relating to fertility, pregnant and non-pregnant women were considered separately. Overall, 46% of pregnant women reported not using condoms to protect against infection during pregnancy. Of the 60 pregnant women who planned their pregnancies, 10 reported the need for assistance in conceiving: five monitored their ovulation period and five became pregnant through in vitro fertilization. Of 34 non-pregnant women currently trying for a baby, 15 (44%) had done so for more than 18 months. Overall 25 (27%) of 94 women who planned to become pregnant needed reproductive care. CONCLUSIONS: Our results suggest that these days knowledge of HIV infection neither influences the desire for children nor the decisions regarding pregnancy in HIV-infected women living in Europe.

Keywords: HIV; pregnancy; infertility

Introduction

Many HIV-infected women living in Europe are likely to want to become pregnant (Watts et al., 2004; McGarrigle et al., 2006) and more so now than in the past. Highly active antiretroviral therapy (HAART) effectively and substantially reduces the risk of mother-to-child transmission (Charurat et al., 2004; European Collaborative Study, 2005), prolongs life and improves quality of life (Vittinghoff et al., 1999; Mocroft et al., 2003; Porter et al., 2003). The advent and increasing use of HAART has thus created an environment where desire of parenthood among HIV-infected people, who now face a chronic rather than an acute life-threatening condition, has become ‘normal’ (Chen et al., 2001; Heard et al., 2007). In addition, many HIV-infected women see pregnancy and childbirth as a way to regain their sense of womanhood and sexuality, often making childbearing a high personal priority. Pregnancy rates before and after HIV diagnosis among 533 HIV-infected women in France (Fourquet et al., 2001) varied by geographic origin, and childbearing patterns of these HIV-infected women reflected those of their general population, suggesting that culture was the most important decision-making factor.

Results from studies in Africa, as well as in developed countries, have suggested that HIV may have an adverse effect on fecundability and fertility, especially in cases of advanced
Previous studies have reported on the ability to conceive using in vitro fertilization (IVF) among HIV-infected women (Coll et al., 2006). Reduced fertility and childbearing concerns have been raised. In this context, we describe the characteristics of HIV-infected women in Europe and the impact of their reproductive status.

Materials and Methods

A cross-sectional questionnaire survey was carried out to obtain information on social, demographic and reproductive health characteristics of HIV-infected women living in Europe. The survey instrument was designed to include questions related to reproductive experiences since HIV diagnosis, including general health, sexual relationships, decisions about reproduction and reproductive counseling. Close-ended responses were primarily analyzed quantitatively, while semi-structured items were analyzed qualitatively. MS Excel was used for data entry and management. Univariate and multivariate logistic regression analyses were performed using STATA (version 7, StataCorp, College station, TX, USA).

Patients and Methods

Clinicians working in major obstetric or infectious disease reference centers in five European countries (France, Italy, Ukraine, Poland and Spain) were asked to participate. Clinicians were informed about the project, the aims of the study, the need for validation, and thus a pilot phase involving administration of the questionnaire to 100 women was carried out in two centers. No modification of the survey instrument was required based on the pilot results. The final version of the anonymous self-completed questionnaire consisted of 47 multiple-choice and semi-structured items.

Statistical analysis

Close-ended questions resulted mainly in quantitative analyses. MS Access 2000 was used for data entry and management. Univariable logistic regression analyses were performed using STATA (version 7, StataCorp, College station, TX, USA).

Results

Patient characteristics

There were 403 HIV-infected women who responded from Spain (65), Italy (91), Ukraine (63), France (73) and Poland (110), with most of respondents (84%) of European origin. Some women did not complete the questionnaire in full, and results can thus relate to smaller numbers for some items. Most women were not pregnant (282 women, 70%) at the time of completion of the questionnaire. Of the 121 pregnant women, 21 had known their HIV status for over a year, i.e. from before they became pregnant. The median age was 29 years. Table I reports socio-demographic characteristics of respondents, by pregnancy status. There were some significant differences in marital status, profession and HIV symptoms by pregnancy status, whereas there were no differences according to age group or area of birth (Table I).

Of the women, 70% (280 of 403) had a positive result when first tested for HIV, whereas the remainder had been diagnosed after at least one prior negative test. Reasons for testing were, in most of cases, related to health problems or knowing the HIV status of the partner. Of the 344 women responding to this question, heterosexual acquisition was most common (190 of 344, 55%); of these women, 39% (74 of 190) reported having been infected by their current partner, 48% (92 of 190) reported infection by a previous known HIV-infected partner and the remaining 24 women did not identify the source of their infection. Illicit drug use was still an important factor.

One-quarter of women described their current HIV symptoms as ‘severe’, but most reported to be asymptomatic.
partner, by pregnancy status.

Table II shows characteristics of the women’s relationships, for women who reported having a current or past partner. The 283 women who were currently cohabiting or married had a median duration of 74 months in the relationship and 118 had a previous child with their current partner. Only 308 women responded to the question about the HIV status of their partner; of these, 145 (47%) had an HIV-uninfected partner, 123 (40%) an HIV-infected partner and 40 (13%) did not know the HIV status of their partner. More than half of the women with a current HIV-infected partner (65 of 116) were diagnosed with HIV after their partners’ diagnosis. There were 14 women (5%) who stated that their partners were not aware of their HIV status; six of these women were pregnant.

Table II. Characteristics of relationships among women with a current partner, by pregnancy status.

<table>
<thead>
<tr>
<th></th>
<th>Not pregnant</th>
<th>Pregnant</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Partner aware of respondent’s HIV status No</strong></td>
<td>8 (4%)</td>
<td>6 (6%)</td>
<td>14 (5%)</td>
</tr>
<tr>
<td><strong>Yes</strong></td>
<td>180 (96%)</td>
<td>96 (94%)</td>
<td>276 (95%)</td>
</tr>
<tr>
<td>Total (missing 113)</td>
<td>188 (100%)</td>
<td>102 (100%)</td>
<td>290 (100%)</td>
</tr>
<tr>
<td>$\chi^2 (I) = 0.3810; P = 0.537$</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>HIV status of partner</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Uninfected</td>
<td>83 (41%)</td>
<td>62 (61%)</td>
<td>145 (47%)</td>
</tr>
<tr>
<td>Infected</td>
<td>94 (45%)</td>
<td>29 (29%)</td>
<td>123 (40%)</td>
</tr>
<tr>
<td>Unknown</td>
<td>30 (14%)</td>
<td>10 (10%)</td>
<td>40 (13%)</td>
</tr>
<tr>
<td>Total (missing 195)</td>
<td>207 (100%)</td>
<td>101 (100%)</td>
<td>308 (100%)</td>
</tr>
<tr>
<td>$\chi^2 (I) = 10.9183; P = 0.001$</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>First to be identified</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Woman</td>
<td>37 (43%)</td>
<td>14 (47%)</td>
<td>51 (44%)</td>
</tr>
<tr>
<td>Her partner</td>
<td>49 (57%)</td>
<td>16 (53%)</td>
<td>65 (56%)</td>
</tr>
<tr>
<td>Total (missing 287)</td>
<td>86 (100%)</td>
<td>30 (100%)</td>
<td>116 (100%)</td>
</tr>
<tr>
<td>$\chi^2 (I) = 0.1198; P = 0.729$</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Most (91 of 101) pregnant women were aware of the HIV infection status of their partner; of these 62 (61%) reported to be in a relationship with an uninfected man, but only 22 had avoided the risk of infecting the uninfected partner by means of autoinsemination. Overall, 45 (46%) pregnant women said that they did not use any barrier contraceptive during pregnancy.

Amongst 226 women who were not pregnant at the time of survey, 39% (90 of 226) stated their desire to have a baby. Of the 34 women, who were actually trying for a baby at the time of completing the questionnaire, 15 (44%) reported to have been trying for >18 months. The respondents felt that they had been adequately and timely counselled, receiving information mostly from infectious disease specialists; very few women (5%) had received advice from an obstetrician or gynaecologist before conception.

To assess the potential size of the problem relating to difficulties in conceiving, we assessed pregnant women who planned their pregnancy (60), of whom five reported to have needed assistance to conceive by monitoring their ovulation period and five reported the use of IVF programmes. These 10 women, together with the 15 non-pregnant women who had been trying to conceive for at least 18 months suggests that 27% (25 of 94) of women who planned to become pregnant had, or were having, problems conceiving.

**Obstetrical history and current pregnancy**

Most women (68%, 275 of 403) had been pregnant at some time. Of these 275, 160 (58%) had had a previous successful pregnancy outcome, 48 (17%) had a previous spontaneous abortion and 67 (25%) had had a voluntary termination. Only two women had both a previous spontaneous abortion and a live birth (1%, 2 of 275). Compared with non-pregnant women, pregnant women were more likely to have an uninfected partner (Table II) ($P = 0.003$) and less likely to have had a previous live birth ($P = 0.0171$).

Of the 67 women who had opted for a voluntary termination in the past, approximately half (33) reported to have done so as a result of their awareness of their HIV status. Of the women who had had terminations, 26 were pregnant when they completed the questionnaire and 14 had changed partners since the termination.

Univariable and multivariable logistic regression analyses (Table III) were carried out to determine factors associated with being pregnant at the time of the survey among the 403 women. Maternal well-being, no previous live birth and having an uninfected partner were strongly associated with the likelihood of being pregnant. Although the use of HAART was more common in the pregnant women, it could not be included in the logistic model because of the high correlation with maternal well-being.

**Discussion**

Results from our survey, which was carried out at a time and in settings where there is knowledge that mother-to-child transmission risk can be decreased with appropriate interventions, indicate that a current pregnancy was more likely with maternal
well-being, no previous live births and a relationship with an uninfected partner. Our findings are in line with results from large surveys conducted in America (Chen et al., 2001) and France (Fourquet et al., 2001; Heard et al., 2007), which indicate that HIV is not a dominant factor in HIV-positive individuals’ desire for children and that childbearing patterns and levels seem to be influenced by the same reproductive determinants in the general populations. For example, Fourquet et al. (2001) compared pregnancy rates before and after HIV diagnosis by geographical origin (sub-Saharan Africa versus European) among women living in France: incidence of pregnancy after HIV diagnosis was 3-fold lower in European than in African women, and among the latter group, pregnancy incidence increased after HIV diagnosis in those with fewer than two live births at this time. Fourteen percent of women in our study were African overall that limited the possibilities for stratification by geographical origin in the analysis of factors associated with being pregnant.

The issue of reproductive care for HIV-infected individuals still poses ethical dilemmas and practical implications for the couples and the carers (Gilling Smith et al., 2006). In couples, who have already tried to conceive unsuccessfully, medical intervention would allow the conception of a child at a risk of acquiring HIV, even with optimal reproductive care. It could be debated whether the couple’s desire to have a child justifies such a medical intervention. A further ethical dilemma facing clinicians is the situation where an HIV-infected woman (often newly diagnosed) does not want to antiretroviral drugs without the the knowledge of the father. Appropriate psycho-social support should be provided to all newly diagnosed women with regard to pregnancy, as recommended in management guidelines (British HIV Association, 2007).

Women, who wanted children or were pregnant, were more likely to have a long-standing relationship, be it marriage or cohabitation, than non-pregnant HIV women. Reported time taken to conceive suggested that overall, conception was not a problem for most women. Prevention of viral transmission from an infected woman to an uninfected man when addressed relied on timed self-insemination using quills. Although fertility remains a medical concept related to both partners, and comparison of the group of women interviewed in our survey with the general population is problematic (Thackway et al., 1997), our results suggest that a significant number of women failed to conceive (27%) and therefore needed fertility advice and treatment. This is an observation in line with recent reports of decreased fertility rates in HIV-infected women undergoing fertility treatment (IVF), suggesting a subclinical hypogonadism mediated by immunosuppression, and stressing more the need for a multidisciplinary medical approach (Coll et al., 1992). There is also a need to make couples affected by HIV aware of the risks involved in unprotected sexual intercourse between discordant partners, especially when trying for a pregnancy, and to stress the reproductive options available to them. Uninfected women, who have HIV-positive partners and who want to become pregnant could be protected by the use of a variety of approaches including sperm washing (Semprini et al., 1992).

Although this was a cross-sectional survey and could not take into account changes in management over the past few years, the results suggest that these days knowledge of HIV infection neither influences the desire for children nor the decisions regarding pregnancy in HIV-infected women living in Europe. Our method of data collection meant that we could not calculate a response rate; this should be borne in mind when interpreting the results presented, as we were unable to verify the representativeness of the sample participating.

The fact that many HIV-infected adults desire and expect to have children has important implications for the prevention of vertical and heterosexual transmission of HIV and the need for counselling to facilitate informed decision-making about safe childbearing. The availability of treatment and improvement in the quality of life has given women living with HIV greater autonomy with respect to reproductive choices.
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References


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