In 2000 French Demand Diagnosed HIV Women with CD4<200 cells/mm

Among women accessing HIV care, what factors are predictive of becoming pregnant?

The characteristics of this diverse group continue to change with an increasing number of older women and women on ART [3]

Research questions

1. Among women accessing HIV care, what factors are predictive of becoming pregnant?
2. Did the pregnancy incidence change during the period 2000-2009?
3. Are changes in the characteristics of pregnant women due to increases in the pregnancy rate among specific groups of women?

Methods

Data were obtained from two on-going studies:

• The UK Collaborative Cohort (UK CHIC) Study: a large cohort of adults accessing HIV clinical care at 13 HIV clinics, representing around 30% of women (aged 16-49 years) who accessed HIV care in the UK in 2000-2009 [4]

• The National Study of HIV in Pregnancy and Childhood (NSHPC): collates pregnancy data on HIV-positive women accessing antenatal care from all maternity units in the UK and Ireland using active surveillance [5]

Study design

• Women reported to both studies were identified using demographic and clinical variables including date of birth and CD4 counts
• A dataset was created containing all women (aged 16-49 years) who accessed care in 2000-2009 and included clinical data, such as CD4 counts (from UK CHIC), and antenatal data, such as date of delivery (from NSHPC)
• Age, ART use and CD4 count at start of year were used
• Pregnancies during which HIV was diagnosed were excluded from that year's data

Definitions

• Date of conception: estimated as 266 days before expected date of delivery
• Year of pregnancy: year of conception

Statistical analysis

• Predictors of pregnancy and changes in pregnancy incidence were assessed using generalized estimating equations (Poisson regression) accounting for repeat measures
• Interaction terms between calendar year and each covariate were assessed to investigate whether calendar year trends varied in some subgroups

Results

• In 2000-2009 there were 3637 pregnancies among 1291 women
• The number of women accessing care increased each year, as did the number of pregnancies among this group (Table 1)

Changes in the characteristics of pregnant women

During 2000-2009 there was an increase in the age of pregnant women, the proportion of black-African and black-Caribbean women and the proportion conceiving on ART

There was a decrease in the proportion with CD4 <350 cells/mm³ (p<0.001)

Predictors of pregnancy

• Older women were less likely to have a pregnancy than younger women (adjusted Relative Rate [ARR] 0.44 per 10 year increment in age [95% CI 0.41-0.46], p<0.001)
• Women with CD4<200 cells/mm³ were less likely to have a pregnancy than women with CD4 200-350 cells/mm³ (ARR 0.67 [0.56-0.79], p<0.001)
• Women of white or black-Caribbean ethnicity were less likely to have a pregnancy than women of black-African ethnicity (Table 2)
• ART use was not predictive of having a pregnancy after accounting for age, ethnicity and CD4 count (Table 2)

Changes in pregnancy incidence

The likelihood that women had a pregnancy increased over the study period; this remained the case after accounting for changes in age, CD4 count, ethnicity and ART use [ARR per later year 1.05 [1.03-1.07], p<0.001]

There was no evidence that the pregnancy rate increased more among women on ART, women of a particular age, ethnicity or CD4 category

Conclusions

• HIV-positive women accessing HIV clinical care are increasingly likely to become pregnant
• Changes in the characteristics of pregnant women in UK CHIC reflect changes in the characteristics of women accessing care
• Demand is likely to increase for the multidisciplinary services providing clinical and antenatal care, particularly services involved in the prevention and management of pregnancy complications, as an increasing number of older women have children - women at increased risk of pre-term delivery, pre-eclampsia and gestational diabetes, complications also associated with antenatal ART use
• MTCT rates in the UK are low; however the number infants exposed to HIV and ART in utero has increased. The long-term implications for in utero ART exposure, for children, and ART use during pregnancy, on the woman's health and future treatment responses are not completely understood and require further investigation

References:
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