Demographic and Management Trends Among HIV-Positive Pregnant Women Over 10 Years at One Canadian Urban Hospital

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Abstract

Objective: There is limited information about changing trends in the management of HIV-positive pregnancies in Canada as Canadian and international guidelines are updated. We reviewed the experience over a 10-year period of one Canadian urban hospital with regard to trends in the demographics and management of HIV-positive pregnant women.

Methods: We performed a retrospective chart review of all HIV-positive pregnant women delivering between March 2000 and March 2010. Demographic, pregnancy, and intrapartum data were collected and analyzed.

Results: During the study period, there were 141 singleton pregnancies in HIV-positive women. The mean age of the cohort was 30.4 years. The number of women seen increased significantly over time ($P < 0.001$), with 63% of cases in care from 2007 to 2010. Most women were of African descent and had recently immigrated to Canada. There was a statistically significant trend towards increasing numbers of Afro-Caribbean women over the study period ($P = 0.03$). Only 4% reported illicit drug use in their current pregnancy. Although the majority of women had a known diagnosis of HIV before pregnancy, 30 (22.4%) had the diagnosis made on antepartum testing. Most women were compliant with their highly active antiretroviral therapy (94.3%) and had undetectable viral loads documented at the time of delivery (76.4%). A significant shift towards increased use of protease inhibitor antiretrovirals in pregnancy was noted over time ($P < 0.001$). All neonates received zidovudine after delivery. There were no cases of vertical HIV transmission.

Conclusion: Our review documented increasing numbers of HIV-positive pregnant women over the past 10 years. The majority of these women were healthy with well-managed disease, and had favourable pregnancy outcomes. There were no infected children born during the study period.

Key Words: HIV, prenatal, patient care

Competing Interests: None declared.

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Résumé

Objectif : Nous ne disposons que de données limitées au sujet de l'évolution (au fur et à mesure que sont mises à jour les lignes directrices canadiennes et internationales) des tendances pour ce qui est de la prise en charge des grossesses séropositives pour le VIH au Canada. Nous avons analysé, sur une période de 10 ans, l'expérience d'un hôpital urbain canadien en ce qui concerne les tendances en matière de caractéristiques démographiques et de prise en charge des femmes enceintes séropositives pour le VIH.

Méthodes : Nous avons mené une analyse rétrospective des dossiers de toutes les femmes enceintes séropositives pour le VIH ayant accouché dans cet hôpital entre mars 2000 et mars 2010. Les données liées aux caractéristiques démographiques, à la grossesse et à la période intrapartum ont été recueillies et analysées.

Résultats : Au cours de la période d'étude, nous avons recensé 141 grossesses monofœtales chez des femmes séropositives pour le VIH. L'âge moyen au sein de cette cohorte était de 30,4 ans. Le nombre des femmes se présentant à cet hôpital a connu une hausse considérable avec le temps ($P < 0,001$), 63 % des cas étudiés ayant été pris en charge entre 2007 et 2010. La plupart des femmes étaient d'origine africaine et avaient récemment immigré au Canada. Nous avons constaté une tendance significative sur le plan statistique indiquant une hausse régulière du nombre de femmes d'origine afro-antillaise pendant la période d'étude ($P = 0,03$). Seulement 4 % des femmes ont signalé avoir consommé des drogues illicites pendant la grossesse alors en cours. Bien que la majorité des femmes aient présenté un diagnostic connu de VIH avant la grossesse, 30 d'entre elles (22,4 %) ont obtenu ce diagnostic à la suite d'un dépistage antepartum. La plupart des femmes faisaient preuve d'observance en ce qui concerne leur traitement antirétroviral hautement actif (94,3 %) et leurs charges virales étaient indétectables au moment de l'accouchement (76,4 %). Une tendance considérable indiquant un accroissement de l'utilisation d'inhibiteurs de protéase (antirétroviraux) pendant la grossesse a été constatée avec le temps ($P < 0,001$). Tous les nouveau-nés ont reçu de la zidovudine après l'accouchement. Aucun cas de transmission verticale du VIH n'a été constaté.

Conclusion : Notre analyse a documenté une croissance du nombre de femmes enceintes séropositives pour le VIH au cours des 10 dernières années. La majorité de ces femmes étaient en santé et leur maladie était bien prise en charge; de plus, elles ont obtenu des issues de grossesse favorables. Aucun enfant infecté n'est né au cours de la période d'étude.

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INTRODUCTION

It has been estimated that 20 000 to 32 000 Canadian women of reproductive age are living with the human immunodeficiency virus.[1] With the success of highly active antiretroviral therapy, many of these women will remain healthy and choose to become pregnant. Without intervention the risk of mother-to-child transmission of HIV is 25% to 30%.[2] With the introduction of universal HIV testing in the antepartum period, suitable maternal antiretroviral therapy, scheduled Caesarean section when appropriate, intrapartum and neonatal administration of AZT, and the avoidance of breastfeeding, the risk of mother-to-child transmission of HIV has decreased to less than 2% in developed countries.[3,4]

Maternal characteristics and behaviours, as well as changing medical practice guidelines, can also play an important role in pregnancy outcomes in women with HIV. Given Canada's multicultural population, there has been a change in epidemiology and management strategies of HIV-affected pregnancies over time. A recent review by the Canadian Pediatric AIDS Research Group examining the rates of vertical transmission in Canada and maternal demographics over the last two decades found an increase in the number of HIV-infected pregnant women, with 90% of patients living in Ontario, Quebec, British Columbia, or Alberta.[5] There has been a steady increase in the number of HIV-infected women born outside Canada who are now living in the country. How these demographics have changed over the last 10 years and, more specifically, how they have changed within urban centres such as Toronto is not well described.

In addition to demographics, there is evidence that prescribing habits have also changed as more information regarding HAART in pregnancy becomes available.[6] The Canadian consensus guidelines established by the Canadian HIV Trials Networking Group on Vertical HIV Transmission provide clear direction for Canadian health care professionals managing HIV in pregnancy.[7] There is limited information about the changing trends in Canada in the management of HIV-positive pregnancies as Canadian and international guidelines are updated.

The primary objective of this study was to review the experience of one large Canadian urban hospital in the management of HIV-positive pregnant women over time, with a specific focus on demographic and management trends.

ABBREVIATIONS

AZT	zidovudine
HAART	highly active antiretroviral therapy
PI	protease inhibitors

METHODS

We performed a retrospective chart review of all HIV-infected pregnant women who received obstetrical care at St. Michael's Hospital in Toronto, Ontario, between March 2000 and March 2010. Patients were identified using an internal obstetrical database and through chart coding. All singleton pregnancies were included in our cohort. Multiple gestations and pregnancies resulting in a first trimester loss were excluded. The identified charts were reviewed and data collected by one study author using a standardized data collection form. Both electronic and paper charts were appraised. Data collected included patient demographics (age, ethnicity, country of origin, marital status, employment), past obstetrical and medical history, HIV status (year of diagnosis, type of antiretroviral therapy used during pregnancy, CD4 count, and viral load in third trimester), antepartum course, intrapartum data (mode of delivery, gestational age at delivery, birth weight), use of postpartum neonatal HIV prophylaxis, and incidence of vertical transmission. All patient identifiers were removed before the data were collected and analyzed.

The distribution of the study variables was examined through frequencies, categorical variables were expressed as counts and percentages, and continuous or discrete variables were expressed as means and ranges. Bivariate analyses included cross-tabulations. Associations between categorical variables were assessed with the chi-square test. Assessment of trends was performed using the Cochran-Armitage test for binomial proportions. A P-value < 0.05 was considered to indicate statistically significant associations. All statistical tests were conducted using SAS 9.3 (SAS Institute Inc., Cary NC) and graphs were prepared using Microsoft Excel (Microsoft Corp., Redmond WA).

Ethics approval for the study was obtained from the Research Ethics Board at St. Michael's Hospital.

RESULTS

We identified 141 singleton pregnancies in HIV-positive women occurring between March 2000 and March 2010. Two sets of twins and one recorded first trimester pregnancy loss were excluded from our analysis. The cohort demographics are summarized in Table 1.