

# Live births, spontaneous and induced abortions in the Swiss HIV Cohort Study (SHCS): Which factors may predict pregnancy outcomes?

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## Background

- Since the release of the Swiss statement in 2008 ("people with undetectable viral load do not transmit HIV") condom use in stable partnerships decreased from 62 % in 2005 to only 28 % in 2015.
- Despite the possibility of natural conception the total number of obstetric events (live births, spontaneous and induced abortions) decreased. However the rate of induced abortions remained twice as high as in HIV negative women and there was an age-dependent increase in spontaneous abortions over time\*.
- We aimed to identify factors associated with spontaneous abortions, induced abortions and live births.

\* Hachfeld et al., oral presentation, EACS 2017, Milan

## Methods

- Assessment of obstetric events in 2722 women aged 18-49 years between January 2009 and December 2016.
- Descriptive statistics, uni- and multivariate logistic regression models using R for statistical data analysis.

## Results

Table 1: Pregnancy outcomes 2009-2016 in the SHCS according to demographic and clinical factors

	Live Birth n= 534 (65.3%)	Spontaneous abortion n= 142 (17.4%)	Induced abortion n=142 (17.4%)	p-value
Median age at event	33 [29, 37]	35 [32, 39]	33 [27, 37]	<0.001
<b>Riskgroup (%)</b>				0.013
Sexual intercourse	459 (86.0)	121 (85.2)	111 (78.2)	
Intravenous drug use	22 (4.1)	7 (4.9)	6 (4.2)	
Perinatal infection	15 (2.8)	2 (1.4)	11 (7.7)	
Other	38 (7.1)	12 (8.4)	14 (9.8)	
<b>Ethnicity (%)</b>				0.586
White	169 (31.6)	42 (29.6)	34 (23.9)	
Black	328 (61.4)	87 (61.3)	96 (67.6)	
Other	37 (6.9)	13 (9.1)	12 (8.4)	
<b>Stable partnership (%)</b>	472 (88.4)	125 (88.0)	111 (78.2)	0.017
<b>None or lower education</b>	387 (72.5)	102 (71.8)	113 (79.6)	0.144
<b>Suppressed viral load</b>	492 (92.1)	116 (81.7)	107 (75.4)	<0.001
<b>CD4 count (median [IQR])</b>	533 [403, 695]	582 [403, 734]	542 [376, 774]	0.398
<b>Alcohol consumption</b>	27 (5.1)	22 (15.5)	12 (8.5)	<0.001

### Spontaneous abortions

- more likely in older women and with alcohol consumption (**aOR 2.8, 95%CI 1.4-5.6, p=0.004**),
- less likely with suppressed viral load (**aOR 0.3, 95%CI 0.1-0.7, p=<0.001**).

### Induced abortions

- more likely in perinatally infected women (**aOR 2.4, 95%CI 1.0-5.9, p=0.05**)
- less likely in stable partnerships (**aOR 0.4, 95%CI 0.2-0.8, p=<0.001**) and with suppressed viral load (**aOR 0.2, 95%CI 0.1-0.5, p=<0.001**).

Table 2: Logistic regression of live birth versus spontaneous abortion and versus induced abortion, in odds ratio (confidence interval)

	Live birth versus spontaneous abortion				Live birth versus induced abortion			
	Univariate LR	P	Multivariate LR	P	Univariate LR	P	Multivariate LR	P
Age at obstetric event	1.5 (1.2 – 1.7)	<0.001	1.5 (1.2 – 1.8)	<0.001	NS			
Perinatal	NS				3.0 (1.3 – 6.7)	0.007	2.4 (1.0 – 5.9)	0.05
Stable partnership	3.6 (1.3 -14.9)	0.04	NS		0.5 (0.3 – 0.8)	<0.001	0.4 (0.2 – 0.8)	<0.001
Suppressed viral load	0.4 (0.2-0.6)	<0.001	0.3 (0.1-0.7)	<0.001	0.2 (0.1 -2.4)	<0.001	0.2 (0.1-0.5)	<0.001
Alcohol consumption	3.4 (1.9 – 6.2)	<0.001	2.8 (1.4 – 5.6)	0.004	NS			

NS = not significant, CI = Confidence interval, Adjusted for: age, mode of HIV infection, stable sex partner, viral HIV suppression, ART, time on ART, oral hormonal contraception, alcohol consumption, depression psychiatric treatment

## Conclusions

- HIV suppression, stable partnership and alcohol abstinence are associated with pregnancies ending in live births.
- Women with perinatal HIV infection seem to be more likely to experience an induced abortion.
- The high rate of induced abortions and the age dependent rate of spontaneous abortions underline the unmet needs of both timely family planning and effective contraception in women living with HIV.