



# **HIV-infected infertile women have lower success rate for in vitro fertilization than non-HIV-infected infertile women.**

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# Background

- The real impact of women's HIV infection on fertility is unknown.
- Scant information on the outcome of assisted reproduction in HIV infected women. The results of one study, based on a small number of HIV infected women, suggest low pregnancy rates after ICSI (explicar estas siglas al menos la primera vez, hazlo para otras siglas también) but, prospective studies are lacking.
- The aim of this study was to investigate whether infertile HIV infected women have similar in vitro fertilization success rate than non-infected women. The presence of possible associated reproductive and infectious factors on the outcome were also assessed.

# Methods

## •First study

Prospective cohort including:

- 50 IVF (explicar estas siglas al menos la primera vez) cycles in HIV-infected women (cases)
- 50 cycles in HIV serodiscordant couples (SDS, infected men exclusively)
- 100 cycles in non-infected couples (controls), matched by age.

## •Second study:

Prospective cohort including:

- 25 oocyte donation (OD) cycles in HIV infected women (cases) matched by age
  - 75 cycles in non infected couples
  - 16 non-matched cycles in HIV SDS couples.
- IVF cycles in all women were performed under standard ovarian hyperstimulation and oocyte donation cycles under hormone replacement therapy.
  - Standard predictive variables for reproduction and HIV infection were used.
  - The association of the predictive variables with the occurrence of pregnancy were evaluated by means of a logistic regression analysis.





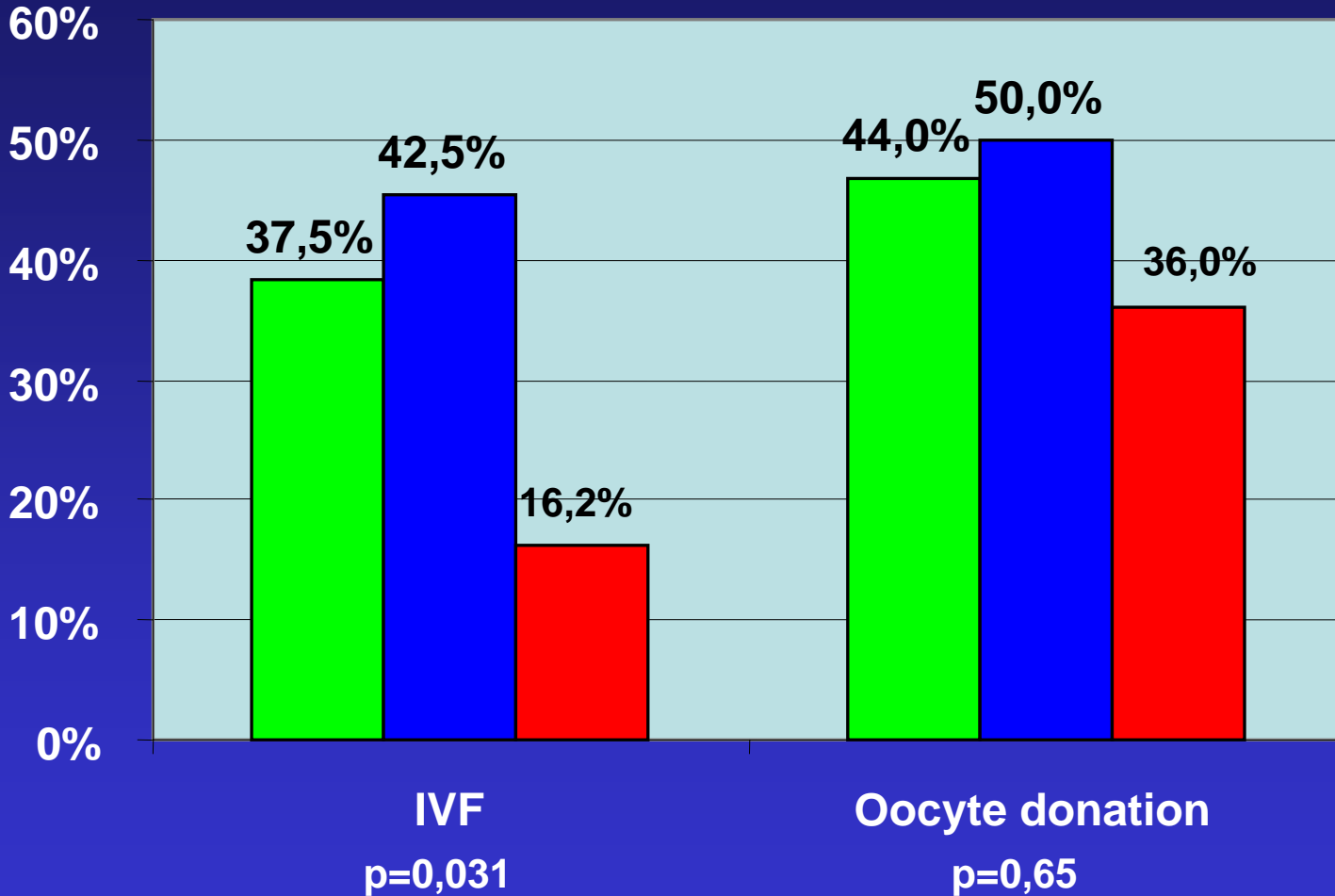
# Results

- No baseline differences between cancelled and analysed cycles were observed.
- Table 1 and 2 describe baseline characteristics and assisted reproductive variables for the different study groups.
- Clinical pregnancy rates by study groups are depicted in figure 3.
- The only variable independently associated with the occurrence of pregnancy was the total units of FSH required for ovarian hyperstimulation (p=0.002, OR, 95% CI 1.001-1.003).
- Other prognostic variables such as fertilization rate, embryo cleave and number of transferred embryos did not significantly explain the difference between the study groups.

Within the IVF-HIV group, among the HIV related variables, only CD4 count appeared to be significantly correlated with pregnancy rate (adjusted OR per unit: 1.01, 95% CI 1.001-1.013, p<0,018). Known duration of infection and of ARV treatment were not associated with pregnancy outcome.

- In the group of women undergoing OD, no independent factors for pregnancy were found.

# Clinical pregnancy rate



**■ Uninfected   ■ HIV-inf. male only   ■ HIV-inf. women**

## Table I. Characteristics of couples with completed cycles

	In vitro fertilization			Oocyte donation		
	HIV inf. Women	HIV inf. Men only	Uninfected	HIV inf. Women	HIV inf. Men only	Uninfected
Age &	36,0±2,8	35,1±3,6	35,15±3,4	38,5±2,6	38,4±5,8	38,6±2,3
Basal FSH &	8,1±2,9	7,9±2,1	7,8±2,3	NA	NA	NA
Years of infertility &	1,4±1,1	2,3±2,3	4,1±3,6	NA	NA	NA
Abnormal sperm	23 62,2%	26 65,0%	47 58,8%	19 76%	12 75%	56 75%
History of IVDU	8 21,6%	NA	NA	11 44%	NA	NA
CD4 >= 200	35 94,6%	NA	NA	24 96%	NA	NA
Viral load < 200	30 81,1%	NA	NA	17 68,0%	NA	NA

NA: Not adequate

\* Median±SD & Mean ±SD

## Table II. Assisted reproductive variables by study group

	In vitro fertilization			Oocyte donation		
	HIV inf. Women	HIV inf. Men only	Uninfected	HIV inf. Women	HIV inf. Men only	Uninfected
Units of FSH used for ovarian stimulation&	3721±1218	3743±1934	3136±1392	NA	NA	NA
Oocytes retrieved*	8,1±5,6	8,6±4,3	9,7±5,3	8,3±4,1	7,9±3,1	7,4±2,6
Mature oocytes injected*	6,2±4,7	7,0±3,9	7,7±4,4	7,0±3,0	5,9±1,7	6,4±2,2
Embryos transferred*	2,4±1,0	2,5±0,9	2,6±0,9	2,6±0,8	2,7±0,9	2,7±0,8

NA: Not adequate

\* Median±SD & Mean ±SD

**Table III. Stepwise logistic regression parameters for the occurrence of pregnancy in the IVF group.**

**Variables in the Equation**

	B	Standard Error	Sig.	Odds ratio
Study group			,062	
HIV	-,843	,523	,107	,430
Discordant	,522	,435	,230	1,686
FSH Units	-,001	,000	,000	,999
Constant	1,229	,493	,013	3,419

# Conclusions

- HIV-infected infertile women have lower success rates for IVF than non-HIV-infected infertile women.
- In the oocyte donation group, that can be considered as a control uterus, with a similar general environment (exposure to HIV, HAART etc.), no different pregnancy rates were found suggesting the absence of implantatory differences in HIV-infected women.
- In addition no differences in oocyte and embryo related variables could explain the different pregnancy rate in HIV women.
- In contrast, variables related with the ovarian reserve seemed to significantly predict the IVF outcome. This observation along with the predictive value of CD4 counts, suggest an immune mediated mechanism on the ovary or oocyte and not on the embryo neither the uterus as a plausible explanation.