

The experience of pregnancy in women living with HIV (WLWH) between 2000 and 2023: a single center retrospective observational analysis



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Background:

During recent years, the increased access to antiretroviral therapy (ART), the U=U paradigm, have significantly changed the reproductive landscape of WLWH.

Main aim of our study is to describe the approach on MTCT during the last 23 years at our center.

Material and Methods:

This is a retrospective descriptive single center study including 80 pregnancies, 56 WLWH followed at S. M.Goretti Hospital between 2000 -2023. Data were compared between 2000-2016 and after 2016, when the U=U campaign was launched.

Statistical analysis was conducted by using the GraphPad prism program.

Results:

- Patients' characteristics are reported in Table 1. Overall, 26.7% (15) women received HIV diagnosis during pregnancy, 13 of which before 2016. Overall, 11 participants had an AIDS diagnosis, 4 of which after 2016 (Tab. 1 – Fig. 1). Of the 73.2% (41) known HIV carriers, the mean infection duration was of 6,5 years. 18 women had an HIV positive partner.
- Mean CD4+ nadir was lower between the 2017-2023 group; a statistically significant increase in mean HIV-RNA zenit was observed in the same study group ($p < 0,0001$).
- About ART, 34 out of 80 pregnancies (42.5%) were on an PI-containing regimen while nucleoside backbone combination was used in 17 subjects (16 on TDF/FTC vs 1 on ABC/3TC). Among the 56 gestations from 2008, 21 were on INSTIs, with 81% on raltegravir, and 9,5 % on dolutegravir (introduced upon the 3rd trimester)(Fig. 2). No patient changed ART regimen during pregnancy, and 17% did at least 3 therapy switches from pregnancy until today.
- 78,75% (63) of patients underwent C-section. Spontaneous vaginal delivery increased after 2016 (31.5% vs 9,8%) (Fig. 3). 47 undetectable women before 2016, would have undergone vaginal delivery by using the U=U paradigm.
- A constant annual birth rate was observed in our study period (median of 3 pregnancies/year) with no change after the introduction of vaginal delivery in 2016. Overall, preterm delivery (<37 weeks) occurred in 12,5% pregnancies and the prevalence of low birth weight (<2.5 kg) was observed in 6,2%.
- WLWH born outside Italy increased in the 2017-2023 study group, (73,6% vs 56.3% in 2000-2016, $p 0.28$) (Table 1,2).
- No MTCT occurred thanks to the implementation of ART.

Table 1. Patients' characteristics

VARIABLES	TOTAL (n = 80)	2000 - 2016 (n = 61)	2017 - 2023 (n = 19)	p VALUE	
Total Pregnancies	80	61	19		
Age (years), median	32,3 (21-47)	32,3 (21-47)	31,6 (22-41)	0,99	
Nationality	Italian	31/80 (55,3%)	26/61 (42,3%)	5/19 (26,3%)	
	Other	25/80 (44,6%)	35/61 (57,3%)	14/19 (73,6%)	0,28
Risk factor for HIV	Vertical	4/80 (5%)	1/61 (1,6%)	3/19 (15,7%)	0,03
	Drugs of abuse IV	10/80 (12,5%)	9/61 (14,7%)	1/19 (5,2%)	0,43
	Sex	66/80 (82,5%)	51/61 (83,6%)	15/19 (78,9%)	0,73
Smoking	27/80 (33,7%)	24/61 (39,3%)	3/19 (15,7%)	0,09	
HCV co-infection	10/80 (12,5%)	9/61 (14,7%)	1/19 (5,2%)	0,43	
Mean years of HIV infection	6,5 (0-30)	5,6 (0-19)	9,9 (0-30)	0,34	
HIV diagnosis in pregnancy	15 (26,7%)	13 (21,3%)	2 (10,5%)		
CD4 nadir (median) cell/mmc	295 (6-886) cell/mmc	302,9 (6-886) cell/mmc	263,2(12-557) cell/mmc	0,76	
HIV-RNA Zenit (median) cp/mL	209.453 cp/mL	21.231 cp/mL	935.452 cp/mL	<0,0001	
CD4 I trimester (median) cell/mmc	643,3	517,87 (193-1.142)	1.244,8 (485-6.646)	0,01	
HIV-RNA I trimester (cp/mL)	5.160,50	6.139 (0-113.719)	0 (0-0)	0,01	
HIV-RNA upon delivery (cp/mL)	1.556 cp/mL	1.498 cp/mL	1.732 cp/mL	0,06	
CD4+ upon delivery (cell/mmc)	608 cell/mmc	585 cell/mmc	694 cell/mmc	0,64	
AIDS diagnosis, CDC stage 3, n (%)	11 (13,7%)	7 (11,4%)	4 (21%)	0,28	

Table 2. Italy VS other countries 2000-2023

VARIABLES	ITALY	OTHER COUNTRIES	p VALUE
Country	31 (55,3%)	25 (44,6%)	
Age (years), median	33,1	29,3	
Smoking	16 (51,6%)	6 (24%)	0,05
C3 Stage	4 (12,9%)	6 (24%)	0,28
HIV RNA 3rd Trimester > 50 cp/mL	6 (19,3%)	8 (25,8%)	0,27
C - Section	25 (80,6%)	22 (88%)	0,22
Actual HIV RNA > 50 cp/mL	3 (9,6%)	2 (6,4%)	0,06
CD4 + nadir	306,45 (6-886)	265,26 (6-557)	0,96
HIV - RNA zenith	604,51 (<50 - 5.407.656)	104,76 (<20 - 5.830.000)	0,001

Fig. 1.

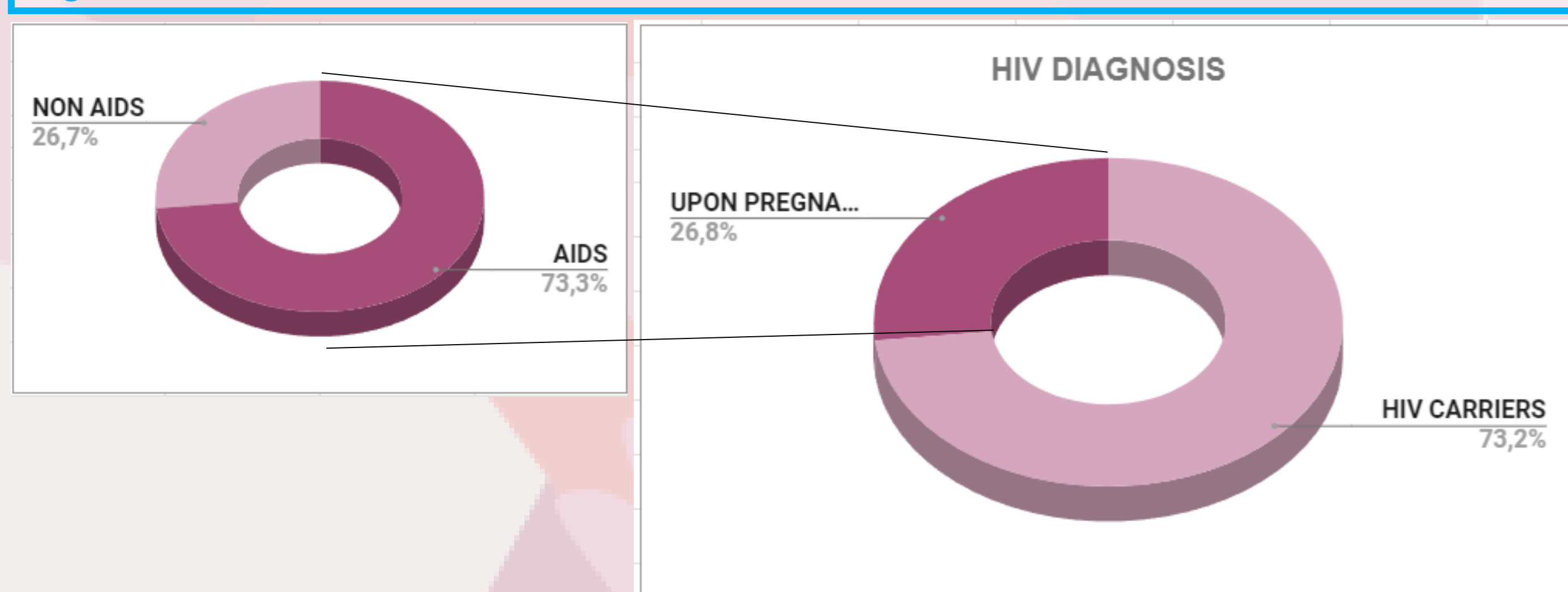


Fig. 2.

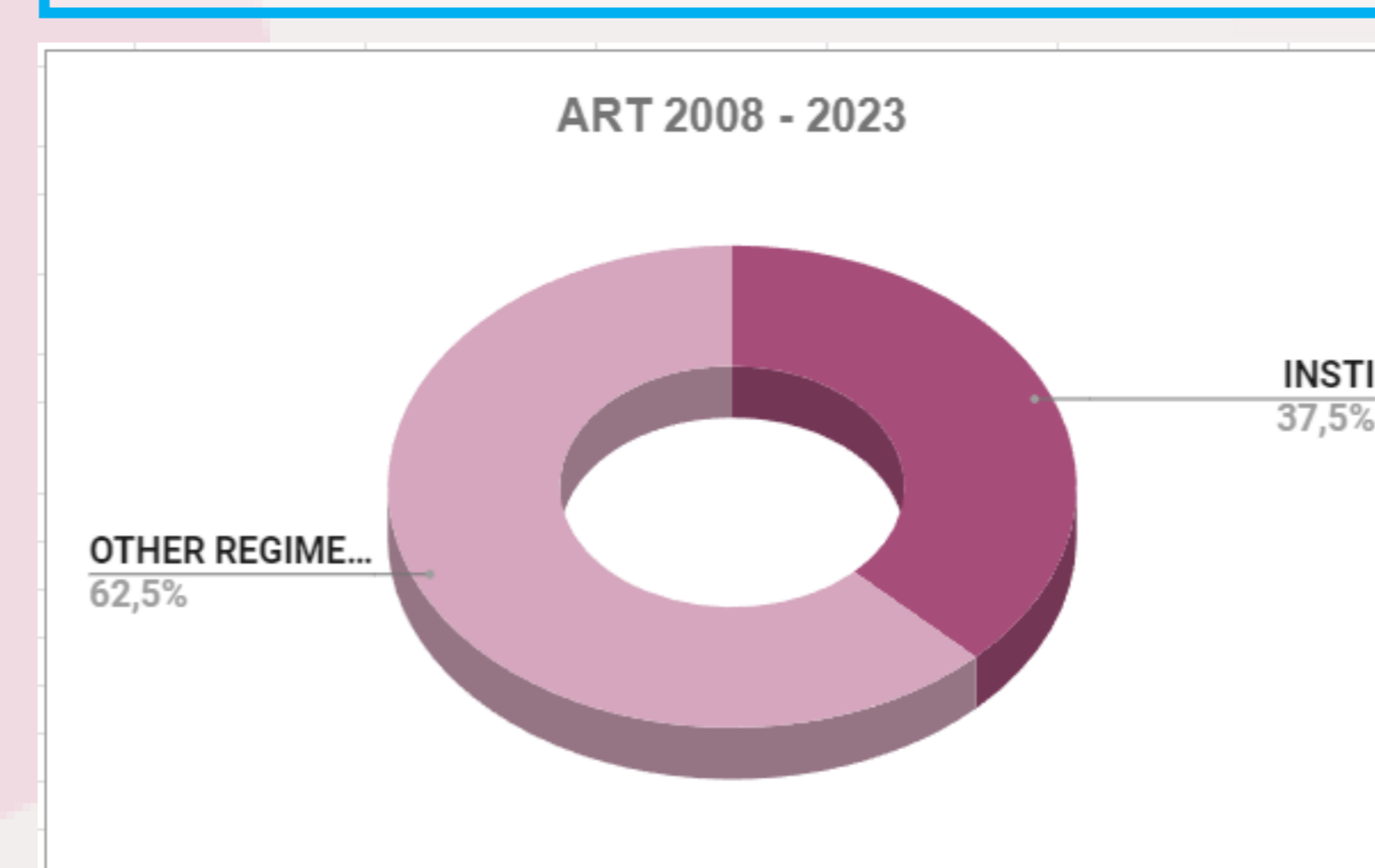
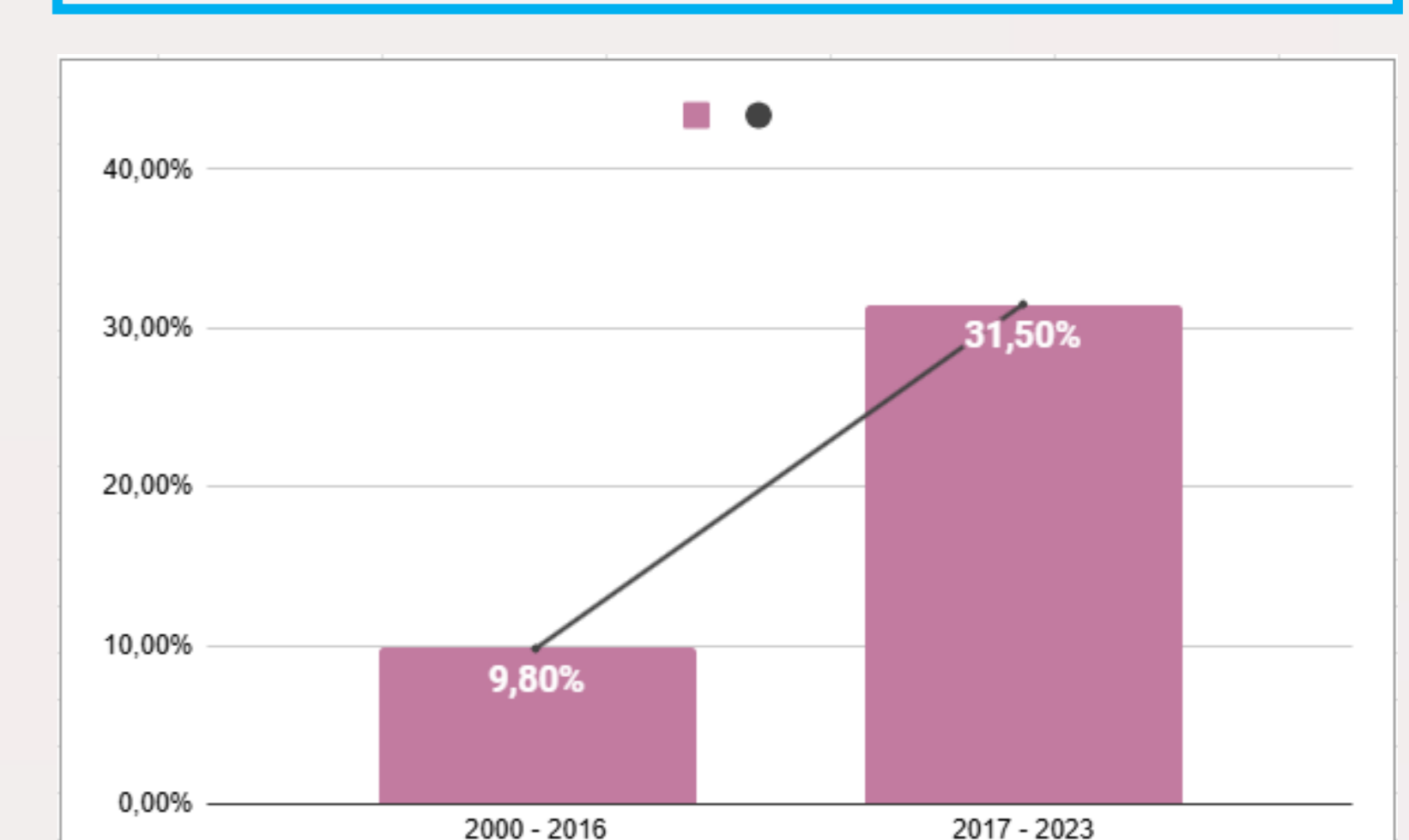


Fig. 3.



Conclusions:

Our findings demonstrate that more women (21%) are diagnosed late in the 2017-2023 period; however modern ART conferred excellent virologic control, with all WLWH achieving viral suppression by first trimester and thus achieving zero MTCT.