

# ID 4802: BASELINE CHARACTERISTICS AND PERINATAL OUTCOMES IN PREGNANT WOMEN WITH HIV: A COMPARISON BETWEEN 2000-2010 AND 2011-2021

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## INTRODUCTION

The use of combined antiretroviral treatment (ART) during pregnancy has **improved maternal health and has decreased HIV vertical transmission** to rates below 1%. However, HIV infection in pregnancy is associated with an **increased risk of adverse perinatal outcomes such as preterm birth, low birthweight and small for gestational age (SGA)**. Association between HIV infection, ART and perinatal outcomes is poorly understood.

## METHODS

- **Retrospective study.**
- **Pregnant women with HIV** who delivered in a tertiary referral center (Hospital Clínic of Barcelona) **between January 2000 and December 2021.**
- **Two study periods according to the date of delivery:** 2000-2010 (period 1) and 2011-2021 (period 2).
- Assess and compare the **maternal characteristics, the perinatal outcomes and ART regimens** between the two periods.

## RESULTS

- A **total of 458 pregnant women with HIV** were included (318 in Period 1; 140 in Period 2).
- Regarding baseline maternal characteristics, there was a higher rate of **black ethnicity** and **overweight women** (body mass index > 25) and a reduction in the number of women with **low educational level and toxics use** in Period 2.
- Infection parameters are described in Table 1 and perinatal outcomes are shown in Table 2 .

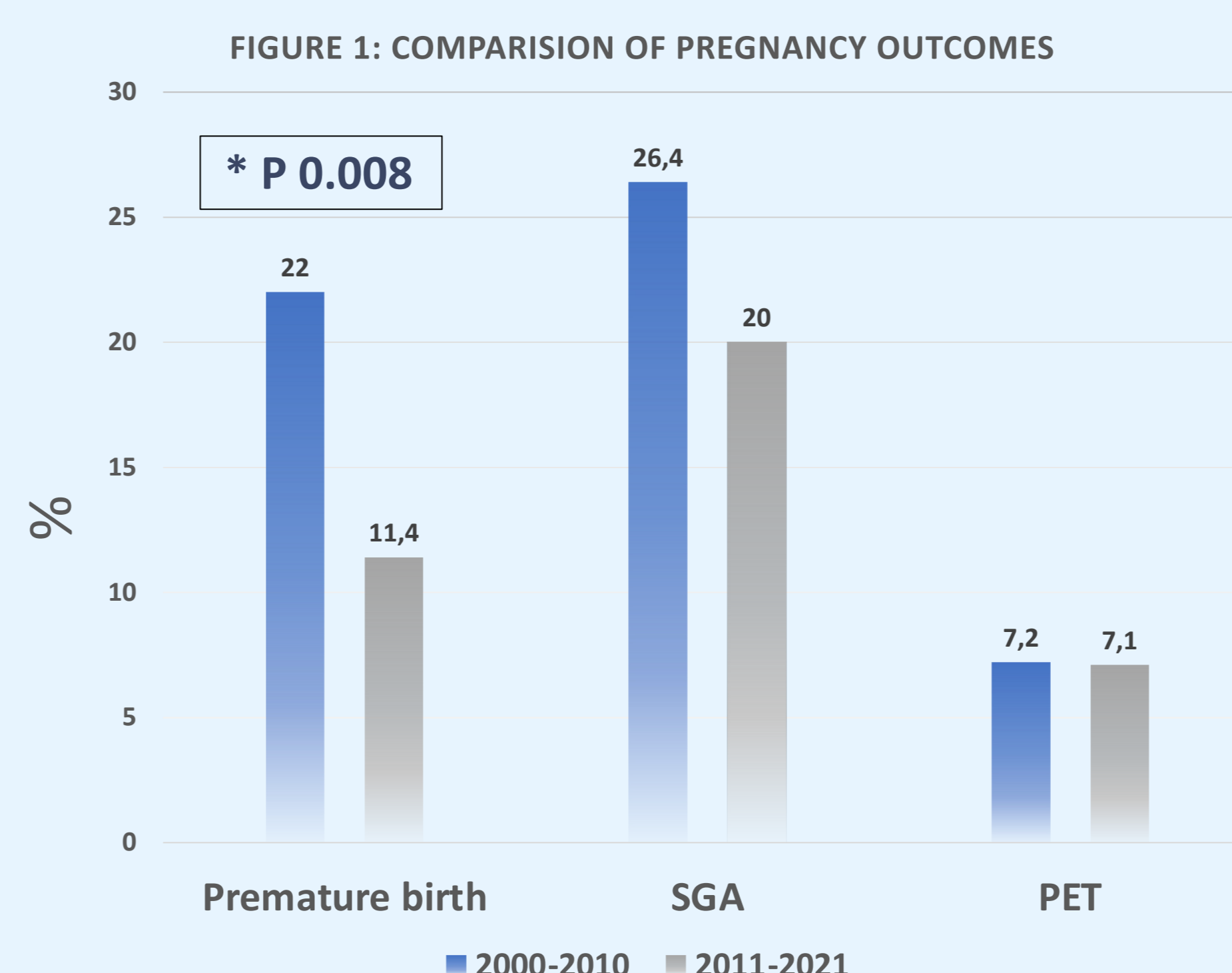


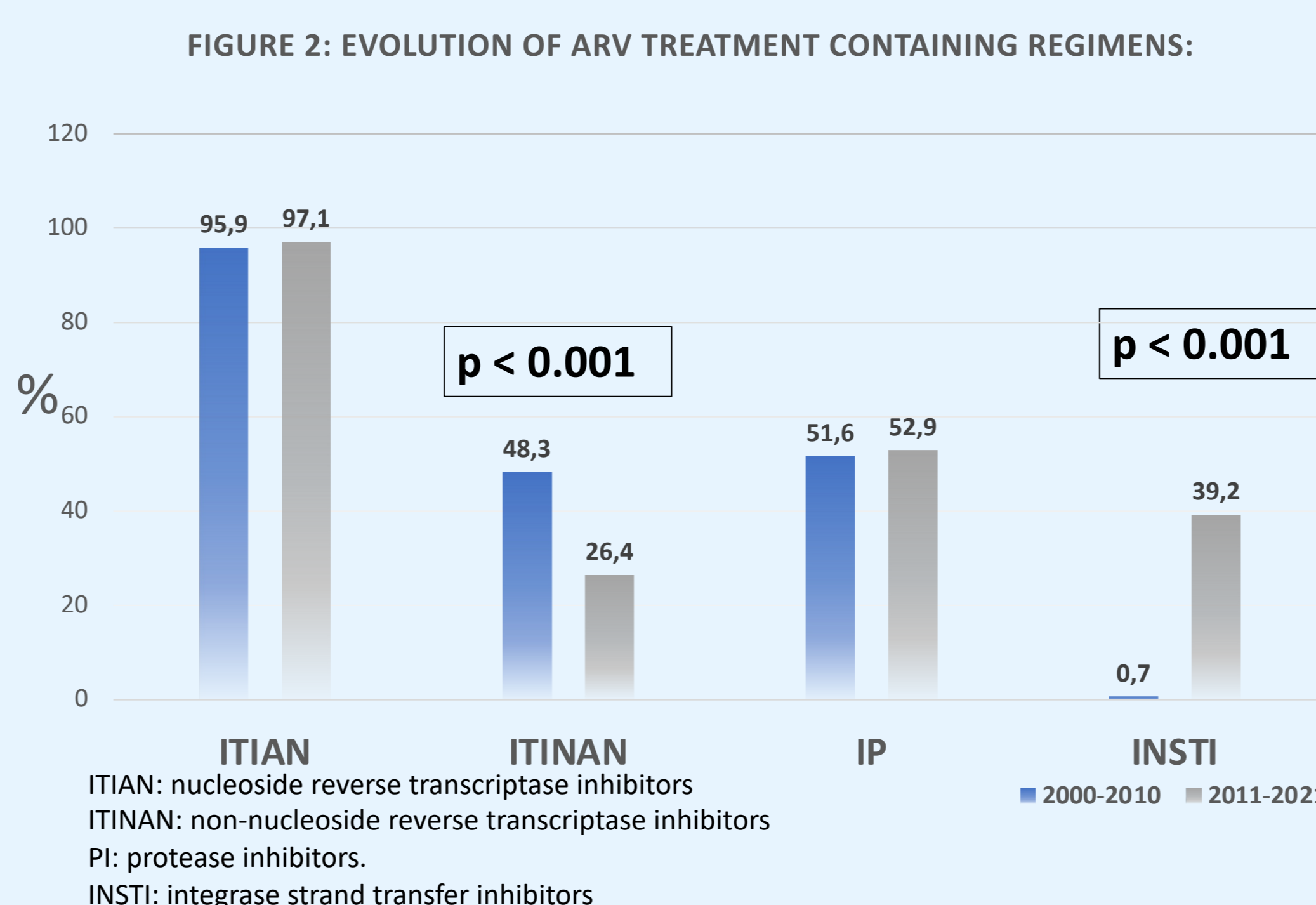
TABLE 2. Perinatal outcomes between 2000-2010 and 2011-2021 HIV-infected pregnant women:

	2000-2010 Period	2011-2021 Period	p-value
Gestational age at delivery (weeks); m±SD	37.5 ± 2.8	38.3 ± 2.4	<b>0.003</b>
Premature birth; n(%)	70 (22)	16 (11.4)	<b>0.008</b>
- Spontaneous	43 (13.5)	9 (6.4)	<b>0.027</b>
- Iatrogenic	27 (8.5)	6 (4.3)	0.109
PPROM; n(%)	26 (8.2)	9 (6.4)	0.517
Birth weight (kg); m±SD	2822.4 ± 682.0	3006.6 ± 650.5	<b>0.007</b>
EFW<10 <sup>th</sup> centile at delivery; n (%)	84 (26.4)	28 (20.0)	0.141
Preeclampsia; n (%)	23 (7.2)	10 (7.1)	0.973
Delivery method; n (%):			
- Elective c-section	179 (56.3)	58 (41.7)	<b>0.004</b>
- Operative vaginal delivery	10 (3.1)	3 (2.1)	0.552
- Spontaneous vaginal delivery	79 (24.8)	62 (44.3)	<b>&lt; 0.001</b>
Intrapartum zidovudine; n(%) (n=454)	295 (93.7)	76 (54.7)	<b>&lt; 0.001</b>
Adverse perinatal outcome; n(%)			
- Apgar 5' <7 (n=455)	7 (2.2)	4 (2.9)	0.659
- pH AU < 7.2 (n=413)	62 (20.5)	23 (20.7)	0.966
- Neonatal unit admission (n=451)	68 (21.7)	15 (10.9)	<b>0.006</b>
Vertical transmission; n(%) (n=383)	1 (0.4)	0 (0)	0.473
Intrauterine fetus demise; n(%)	6 (1.9)	1 (0.7)	0.346

TABLE 1. Infection parameters between 2000-2010 and 2011-2021 HIV-infected pregnant women:

	2000-2010 Period	2011-2021 Period	p-value
Diagnosis in pregnancy; n (%)	56 (17.6)	24 (17.1)	0.903
Diagnosis at delivery; n (%)	6 (1.9)	1 (0.7)	0.346
Transmission route; n(%)			
- Unknown	8 (2.5)	9 (6.4)	0.041
- Sexual	240 (75.5)	110 (78.6)	0.472
- Injection drug use (IDU)	66 (20.8)	8 (5.7)	<b>&lt; 0.001</b>
- Transfusion	3 (0.9)	1 (0.7)	0.808
- Perinatal	0 (0)	12 (8.6)	<b>&lt; 0.001</b>
CD4 count at 1 <sup>st</sup> trim; median (range) (n=355)	451 (25-1462)	564 (1-1236)	<b>0.002</b>
CD4 count at delivery; median (range) (n=357)	525 (43-2213)	548.5 (93-1774)	0.379
Detectable viral load 1 <sup>st</sup> trim; n(%) (n=381)	119 (45.8)	31 (25.6)	<b>&lt; 0.001</b>
Detectable viral load at delivery; n(%) (n=454)	63 (20)	12 (8.6)	<b>0.003</b>
ART before pregnancy; n(%)	196 (61.6)	102 (72.9)	<b>0.020</b>
ART during pregnancy; n(%)	284 (89.3)	136 (97.1)	<b>0.005</b>
ART at 1 <sup>st</sup> trim; n(%)	175 (55)	106 (75.7)	<b>&lt; 0.001</b>

- The percentage of small for gestational age (SGA) remained **similar and high** in both periods (Figure 1).
- A **7% of preeclampsia (PET)** was observed in both periods irrespective of timing of treatment initiation.
- PET rates were **significantly lower** in patients using protease inhibitors.



- Regarding ART regimens, the use of nucleoside reverse transcriptase inhibitors and protease inhibitors was similar between periods (Figure 2).
- We observed a **significant decline in the usage of non-nucleoside reverse transcriptase inhibitors** together with an initiation in the use on integrase strand transfer inhibitors.

## CONCLUSION

Over the last two decades, the **baseline characteristics of pregnant women with HIV have changed**, with a reduction in the use of toxic substances, and an increase in educational level. The use of ART has almost eliminated perinatal transmission, even with vaginal delivery and avoiding intrapartum zidovudine. While there has been a significant decrease in spontaneous preterm birth rates, the percentage of SGA and PET remain high irrespective of ART regimen or timing of treatment initiation.