Changes in the body weight in patients with HIV infection after switch to an INSTI-containing antiretroviral regimen

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Conclusions

- We found a non-significant weight gain and BMI increase in the first year after the switch to an INSTI-containing regimen
- The change in both body weight and BMI in the group switching to INSTI was comparable with the group continuing a non-INSTI regimen

Introduction

- Integrase strand transfer inhibitors (INSTI) have recently become a part of the preferred antiretroviral regimens used in the treatment of HIV infection.
- However, recent studies raised concerns about weight gain associated with use of these agents which could have a negative impact on the cardiovascular risk profile of HIV patients.

Aim of the study

Evaluate change in body weight and BMI in our cohort of patients

- switching from an non-INSTI regimen to an integrase inhibitor.

Methods

- retrospective cohort study in adult patients with HIV
- follow-up in the University Medical Center in Utrecht
  group A: 50 consecutive INSTI-naïve patients switching to an INSTI-containing regimen
  group B: 50 consecutive patients who continued their non-INSTI regimen
- both groups matched regarding age and gender
- weight and BMI retrieved:
  group A: 1 year before-, at moment of- and 1 year after the switch
  group B: at the moment of-, 1 and 2 years after the start of current ART
- differences in weight and BMI were statistically evaluated with the Mann- Whitney test

Results

Demographic and baseline clinical data are summarized in Table 1. Both groups were comparable regarding baseline BMI, ethnicity and viral load, although group A had lower nadir CD4 count [301 vs. 174/mm^3, p =0,011].

Table 1. **Demografic and baseline clinical data**

Patient characteristics	Group A (n=50) switch to INSTI	Group B (n=50) current regimen continued	
Age, [Median (IQR)]	44,50 (34,00-55,50)	41,50 (32,75-52,75)	0,497
Male % [n (%)]	45 (90%)	45 (90%)	
Nadir CD4+ count median (IQR)	301 (144-452)	174 (77-324)	0,011
<200 n (%)	16(32)	27 (54)	0,043
200-500 n (%)	26(52)	17(34)	0,156
>500 n (%)	8 (16)	6 (12)	0,774
Viral Load k/ml median (IQR)	111.000 (306.555,60-563.000)	84.000 (9.477,50-201.250.0)	0,214
<10.000	7(14)	13(26)	0.451
10.000-100.000	12(24)	19(38)	0,654
>100.000	19(38)	18(36)	0,20
Length (cm) median (IQR)	180,00 (173,50-187,00)	180 (173,00-185,00)	0,809
Weight (kg) median (IQR) at first cART	73,75 (65,25-79,50)	71,25 (63,15-82,50)	0,868
BMI [Median (IQR)] at start ART	21,86 (20,55-24,34)	22,41 (19,76-24,44)	0,926

Results on weight and BMI are shown in Table 2:

- no significant body weight gain and BMI increase after start of INSTI have been found in patients switching to an INSTI regimen (group A),
- similarly, no significant weight gain and BMI increase have been seen in patients continuing their non-INSTI regimen,
- no significant differences have been observed between the two groups.

Table 2. **Changes in body weight and BMI**

Variable	Group A (switch to INSTI) (n=50)		Group B (continuation non-INSTI) (n=50)	
	Δ 1 year before switch to baseline	Δ baseline to 1 year after switch	Δ first year after start cART	Δ second year after start cART
weight change [kg]	0,75 (-0,63; 2,43)	0,9 (-1,0; 4,7)	0,0 (-1,13; 1,85)	0,0 (-3,2;-3,0)
%weight change	0,95 (-0,91; 3,05)	1,27 (-1,21; 6,67)	0,0 (-1,63; 2,30)	0,0 (-4,11; 3,49)
BMI change [kg/m^2]	0,26 (-0,08; 0,80)	0,27 (-0,28; 1,51)	0,0 (-0.38; 0,51)	0,0 (-1,13; 0.89)
%BMI change	1,17 (-0,32; 3,08)	1,15 (-1,22; 6,50)	0,0 (-1,67; 2,13)	0,0 (-4,04; -3,52)