



The impact of integrase strand transfer inhibitors (InSTIs) on weight gain among adults with HIV in clinical care

Sneha Thatipelli, MD¹, Chad Achenbach, MD, MPH², Shannon Galvin, MD²

¹Department of Medicine, ²Division of Infectious Disease, Northwestern University, Chicago, IL

BACKGROUND

Uncontrolled HIV patients starting or switching regimens may experience weight gain as seen in other studies.¹ Previous data has shown that integrase strand transfer inhibitors (InSTIs) for HIV may be associated with clinically significant weight gain, in addition to the “return to health phenomenon”.

OBJECTIVE

- Do patients being treated with InSTI-based regimens experience a statistically significant weight gain compared to those who are newly infected with HIV vs. those who are chronically infected?
- Is there an association between InSTI-based regimens and metabolic syndrome?

METHODS

Single center, retrospective cohort study of patients seeking HIV care at Northwestern Memorial Hospital from Jan 2001 to Nov 2018.

Inclusion Criteria	Exclusion Criteria
<ul style="list-style-type: none"> • Adults > 18 y/o with HIV • Baseline weights • Additional weight at least 6 mo later 	<ul style="list-style-type: none"> • Patients who developed malignancy, thyroid disorders, and disseminated TB or MAC

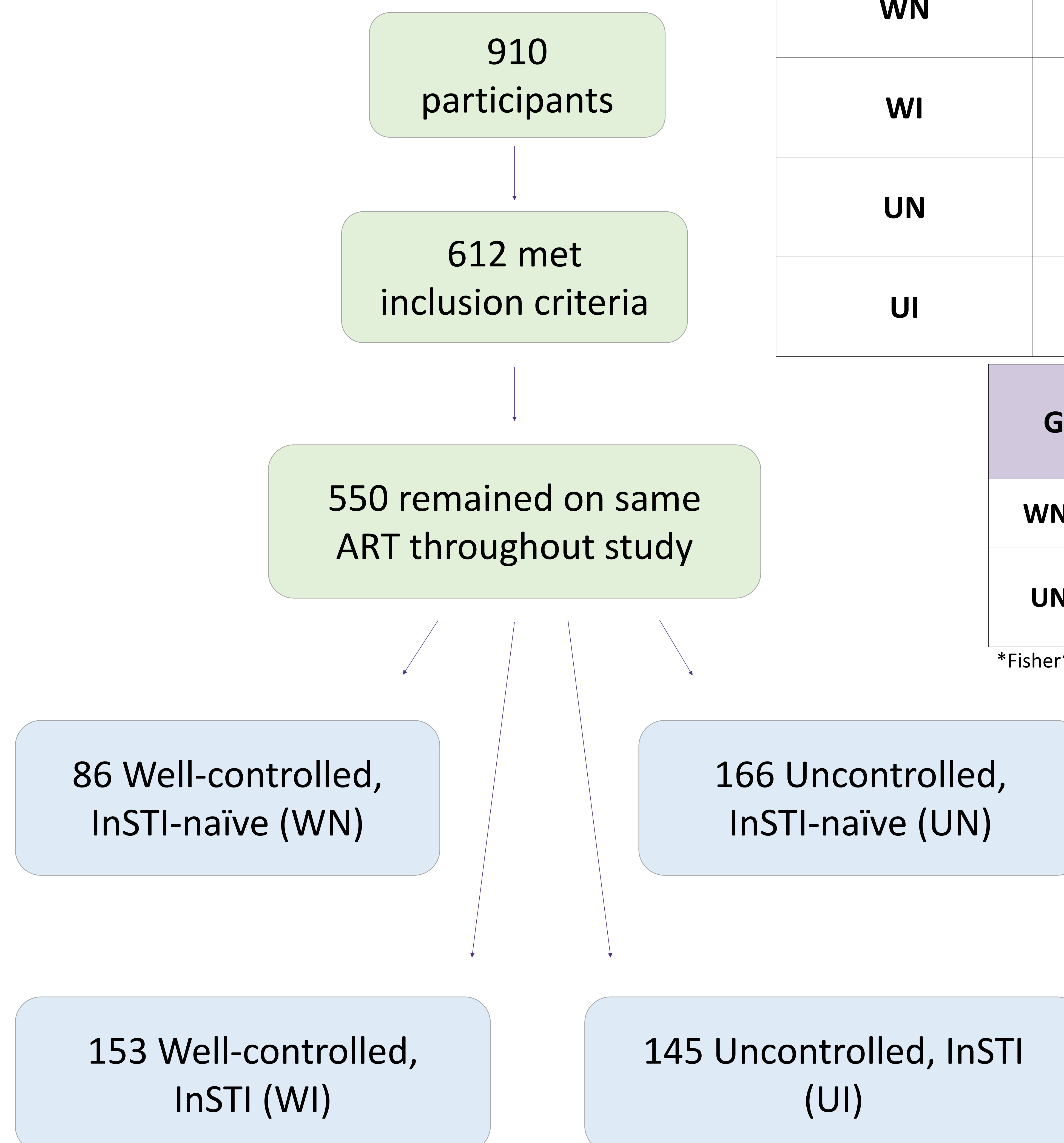
RESULTS

Well-controlled → proxy for chronic HIV

- Entered cohort with VL < 2000

Uncontrolled → proxy for new or untreated HIV

- Entered cohort with VL > 2000



Group	Mean Weight Change (kg, 95% CI)		
	6 mo	1 year	2 years
WN	0.22 [-0.86, 1.3]	-0.86 [-2.94, 1.22]	0.026 [-2.347, 2.399]
WI	0.21 [-0.79, 1.21]	-0.50 [-2.02, 1.04]	0.43 [-1.35, 2.21]
UN	1.74 [0.24, 3.24]	3.84 [1.57, 6.11]	2.42 [-0.44, 5.28]
UI	0.78 [-0.15, 1.71]	2.33 [1.02, 3.64]	3.04 [1.2, 4.85]

Group	HTN Incidence	DM Incidence	HLD Incidence
WN vs. WI	26% vs. 34%	32% vs. 37%	29% vs. 32%
UN vs. UI	34% vs. 26%	35% vs. 22% (p=0.03)*	30% vs. 21%

*Fisher's exact 2-tailed test

CONCLUSIONS

- When comparing controlled vs. uncontrolled HIV patients who are either on InSTI regimens or not, significant weight gain was seen only in uncontrolled patients on InSTI regimens at two years.
- Uncontrolled patients on other regimens had weight gain at one year but was not significant at two.
- Well controlled individuals did not have statistically significant weight change on either type of regimens.
- Except for a higher diabetes incidence in the uncontrolled naïve group, there was no difference in metabolic disease incidences at 2 years
- This data is confounded by the fact that we did not control for those who were on TAF vs. TDF, which may also affect weight gain.

References:
¹Sax et al. Weight Gain Following Initiation of Antiretroviral Therapy: Risk Factors in Randomized Comparative Clinical Trials, *Clinical Infectious Diseases*, Volume 71, Issue 6, 15 September 2020, Pages 1379–1389