

# Increased weight gain with HIV-therapy TAF medication

March 15 2021

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Research team Inselspital and University of Bern found an above average weight gain associated with increase blood lipids after switching HIV-therapy from TDF to TAF. Additional individual counseling will be necessary to avoid harm after therapy switch.

In Switzerland about 17,000 people are living with an HIV infection, worldwide there are about 38 million. Today, the disease can be treated so successfully that a normal life can be ensured to a great extent. However, [weight](#) increases are often observed at the beginning of HIV therapy due to adaptations of the metabolism, which are part of a successful therapy. Therefore, body weight control plays an important role in HIV therapy. It is important, for example, to avoid metabolic problems that can lead to heart attacks or diabetes over the long term.

Tenofovir is the drug used as part of the standard HIV therapies. The previously, widely used TDF-based therapy (tenofovir disoproxil fumarate, TDF) has been associated with renal side effects and bone loss. It was therefore steadily replaced with a new variant, TAF-based therapy (tenofovir alafenamide), which was associated with fewer side effects. The study presented here explores evidence of excessive weight gain after switching from TDF to TAF.

## **TAF leads to disproportionate weight gain**

The key finding of the study shows that individuals who switched to TAF therapy gained significantly more weight (1.7 kg) than individuals who remained on TDF therapy (0.7 kg) during the observed 18 months. This effect was seen in all subgroups of the study and independent of previous medication. In the group with a normal BMI, 13.8% became overweight or obese with TAF, compared with 8.4% receiving TDF. At the same time, a negative development of lipid metabolism was noted, with an overall increase in blood lipid levels. Lead author Bernard Surial notes: "The result was very consistent. Cardiovascular complications are a leading cause of illness and death in people with HIV. Accordingly, the metabolic changes found are of great significance."

## **Extensive study**

The multicenter cohort study included 4375 participants of the Swiss HIV Cohort Study who had been treated with a TDF-based therapy for at least 6 months prior to the start of the study. Swiss university hospitals, other hospitals and private practices were involved. The central research question focused on the problem of determining the change in weight and fat levels induced by switching from TDF to TAF.

The study also addressed the question of whether diabetes would be diagnosed more often with TAF. However, no clear answer could be found here, as the time period of 18 months for the study was probably too short.

The study was carried out as part of a larger project examining the different aspects of switching from TDF to TAF. The research group has already reported on the development of renal function after switching from TDF to TAF (Changes in Renal Function After Switching From TDF to TAF in HIV-Infected Individuals: A Prospective Cohort Study).

## **What do these results mean for practice?**

TAF is now part of the most commonly used HIV therapies with very good efficacy and tolerability. The study now shows that increased attention needs to be paid to the problem of weight gain when switching to TAF. Instead of an unconditional, automatic switch from TDF to TAF, the advantages of better renal tolerance and avoidance of bone loss must be balanced against the disadvantages of weight gain and increased blood lipid levels in the future. Individual counseling can be used to develop optimal patient-specific solutions.

## **Impact on patient care, guidelines and upcoming studies**

Research into the long-term effects of HIV therapies on body weight and blood lipid metabolism is a high priority in HIV medicine. Prof. Andri Rauch, head of the study, therefore notes: "With its large number of participants, the significant result of our study for patient care helps both in the individual counseling of people with HIV and in the optimization of the international HIV guidelines. In future, more in-depth studies, it will be necessary to investigate the exact mechanisms of the metabolic changes and especially their effects (heart attacks, diabetes, etc.). Needless to say, the search also continues for new drugs that can ensure successful HIV [therapy](#) without negative effects in the long term."

**More information:** Bernard Surial et al, *Annals of Internal Medicine*, DOI: [10.7326/M20-4853](https://doi.org/10.7326/M20-4853) , <https://www.acpjournals.org/doi/10.7326/M20-4853>

Provided by Inselspital, Bern University Hospital

Citation: Increased weight gain with HIV-therapy TAF medication (2021, March 15) retrieved 21 June 2024 from <https://medicalxpress.com/news/2021-03-weight-gain-hiv-therapy-taf-medication.html>

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