

USING BONE TURNOVER MARKERS TO DETECT LOW ADHERENCE TO OSTEOPOROSIS TREATMENT





LOW ADHERENCE TO OSTEOPOROSIS TREATMENT : A GLOBAL PROBLEM

Low adherence to oral bisphosphonate (BP) treatment is very common among patients with post-menopausal osteoporosis.

Poor compliance is due to various reasons such as:

- ⊗ Lack of motivation;
- ⊗ Patient's inability to detect improvement in this silent disease.

AT ONE YEAR AFTER THE FIRST PRESCRIPTION:



Adherence to oral bisphosphonates varies between **43%** and **59%**



Adherence is even worse with generic medications

ACHIEVING HIGHER EFFICACY AND LOWER COSTS THROUGH BETTER ADHERENCE

Low adherence to treatment:

- ↓ **Decreases** the **efficacy** of the treatment
- ↑ **Increases** the **patient's risk** of fracture

Adequate compliance with BP treatment regimens is required to achieve efficacy with therapy and is associated with the following improvements:



Bone mineral density



Reduction in fracture risk



Decrease in healthcare costs

For example:

- ↓ **29% reduction** in the risk of non-vertebral fractures¹
- ↓ **44% reduction** in the risk of hip fractures alone¹

SCREENING STRATEGY TO DETECT LOW ADHERENCE IN PATIENTS INITIATING ORAL BISPHOSPHONATES

MEASUREMENT OF BONE TURNOVER MARKERS

is considered the most specific early method for measuring the biological effect of bisphosphonates

THIS METHOD IS BASED ON:

Measurement of two bone turnover markers

PINP: Procollagen type I N- terminal propeptide

CTX : Collagen type I C-terminal telopeptide

01.

At baseline

02.

Three months after starting therapy

Oral BPs decrease levels of PINP and CTX rapidly in most patients, beyond the least significant change (LSC), the margin of change.

IS THE PATIENT RESPONDING TO TREATMENT?

Responders are considered as patients who show changes in BTMs that exceed the LSC.

↓ **PINP:** check for a decrease of **more than 38 %**

↓ **CTX:** check for a decrease of **more than 56%**

SUMMARY

PINP **>38%**
decrease of more than 38 %

CTX **>56%**
decrease of more than 56 %

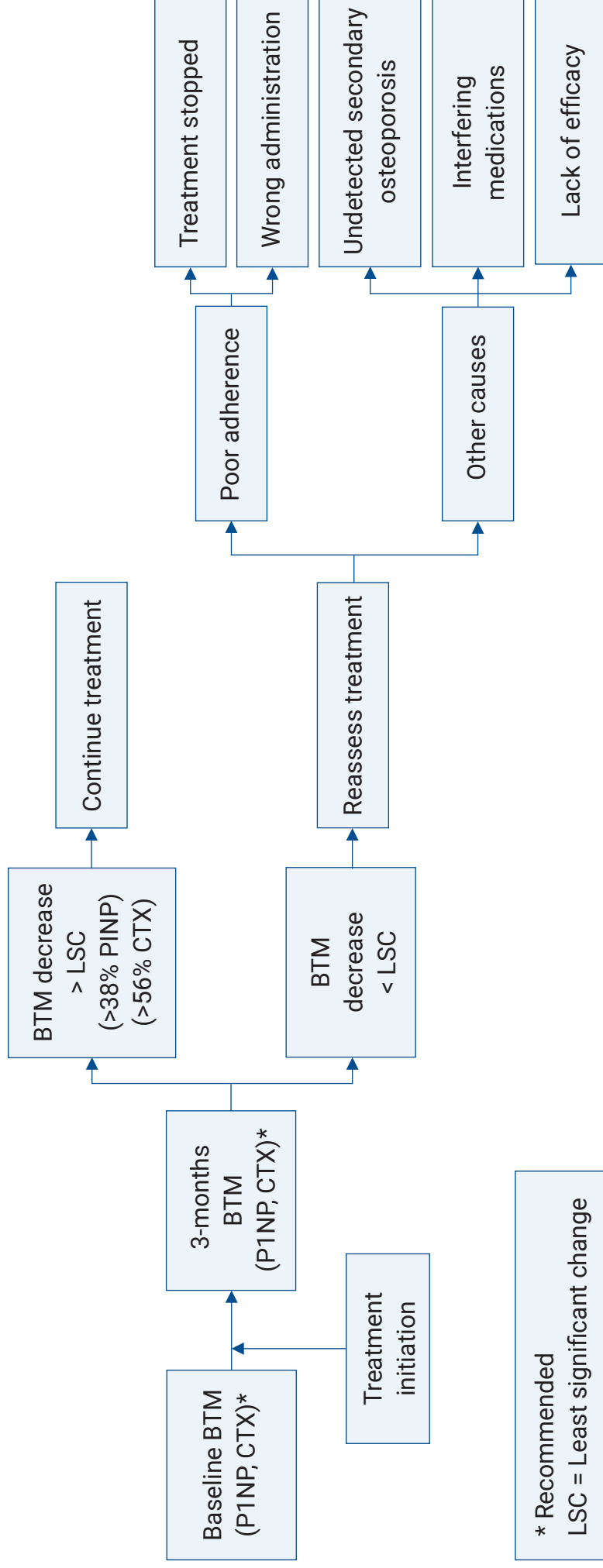
Significant decrease of PINP and/or CTX is observed between the initiation of treatment and 3 months later



The treatment can continue

No decrease during the 3-month period? Reassess to identify problems with the treatment, mainly low adherence.

ALGORITHM FOR THE ASSESSMENT OF ADHERENCE BASED ON THE MEASUREMENT OF CTX AND/OR PINP



Adapted from Osteoporos Int. 2017 28:767-774.

The following recommendations were published by an IOF-ECTS Working Group on Adherence

Diez-Perez A et al., International Osteoporosis Foundation and European Calcified Tissue Society Working Group. Recommendations for the screening of adherence to oral bisphosphonates. Osteoporos Int. 2017 Mar;28(3):767-774. doi: 10.1007/s00198-017-3906-6

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**Our vision is a world without fragility fractures
in which healthy mobility is a reality for all.**

References:

1. Cramer et al., A systematic review of persistence and compliance with bisphosphonates for osteoporosis. Osteoporos Int. 2007 Aug;18(8):1023-31.

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