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 fractures
- 44% reduction in the risk of hip fractures alone
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

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: decrease of more than 38%
- CTX: 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

1. Baseline BTM (P1NP, CTX)*
   - Treatment initiation

2. 3-months BTM (P1NP, CTX)*
   - BTM decrease > LSC (>38% PINP) (>56% CTX)
   - Continue treatment
   - BTM decrease < LSC
   - Reassess treatment

   - Poor adherence
     - Treatment stopped
     - Wrong administration
     - Undetected secondary osteoporosis
     - Interfering medications
     - Lack of efficacy

   - Other causes

*Recommended
LSC = Least significant change

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

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

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References:

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